

## THE SYSTEM OF PSYCHOLOGICAL DISCIPLINES IN TECHNICAL INSTITUTIONS OF HIGHER EDUCATION

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The article shows the importance of psycho-pedagogical science for a modern specialist as well as for the organization of educational process. The structure of the education program on psychology and pedagogics is presented. The need for study of psychological basis of management is demonstrated. The paper outlines the experiences of the Ufa state aviation technical university in teaching this subject. Many teachers of the University are found to take part in organizational and management practices. A study guide "Pedagogical management" has been published as a manual for teachers of this subject. The article outlines the content of the study guide and summarizes the experiences of the author in adoption and application of education programs for disciplines "Engineering psychology and ergonomics" and "Psychology and pedagogics in higher education institutions". Methods and procedures for improving methodological skills of teachers are presented. The problem of enhancement of vocational guidance work among schoolchildren is raised. The idea of establishing a psychological service in education institutions is suggested.

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Teaching psychology and pedagogics in technical and other institutions of higher education (except teacher training schools) is provided for in the elective component of Federal State Education Standards of Higher Education (FSES HE).

So why the high interest in psychology and pedagogics among educational community and FSES developers? What subjects does psychological and pedagogical training of future engineers include? What goals and objectives do they pursue? What role do psychology and pedagogics play in the organization of education process? The article tries to answer these questions.

First of all, *let's consider the relevance of psychological knowledge for life of a modern human (including students and specialists)*. Psychology is the only science studying the inner world of human, the world of psychic phenomena, processes, properties and states. Gaining psychological knowledge is necessary for self-exploration and reflexive actions. Every young man should understand the specifics of his own psyche – motivation, psychic processes, perception, memory and cogitation, emotion, temperament, habitus, abilities, etc. Reflexive conscious and behavior of human intends implementation of the following actions – self-analysis, self-control, self-evaluation, self-criticism, self-direction, self-evolution, etc. It is thought that human self-consciousness should not be limited to only self-perception, awareness of individual psychological attributes. It is important for a person to find his place in the group or collective, to define goals and objectives of his activ-

ity, to make relationships with other people, to develop his view on the problems, events and situations. Self-consciousness implies knowing of one's own nationality (national self-consciousness), mastery of mother tongue, knowledge of history and culture of one's own people, sense of pride in fatherland, etc.

Psychological knowledge helps to know better the inner world of other persons, to understand mentality of other people – members of the family, friends, fellow students and others with whom the student (specialist) interacts. Studying human psyche means identifying and evaluating his psychological attributes, state, orientation, relationships and aspects of cognition, emotion and volition. On the basis of this knowledge he builds relationships with other people, chooses the proper behavior, the tone of conversation, etc.

Knowing elementary psychology and pedagogics the student can organize better his study, control and evaluate his knowledge, correct in time his actions of doing homework. Learning activity is known to be based on mental processes of attention, reception, memory, and thinking. Knowledge of details of these processes enables enhancing cognitive activity and improving performance. Every student should realize the structure of learning and cognitive activity (subject, goals, means, actions, operations and result). These elements should be scheduled and implemented in all forms of education. At classroom studies they are explained by the teacher, during unsupervised activities they are defined and studied by the student on the base of the knowledge of activity psychology [2].

The education program on psychology and pedagogics provides for the study of the following: the subject and objectives of the discipline, personality psychology, cognitive psychical processes, nature and regularities of education process, methods and procedures of study. As result of study the students should know: the relevance of psychological and pedagogical knowledge in modern specialists' life; nature and structure of psyche; aspects of the processes of perception, attention, memory and thinking; psychological structure and personality psychological features; nature and structure of activity and communication; psychological phenomena and processes in a small group; nature, structure and regularities of education process. The students should be able to reveal the content of these problems so as to use the knowledge in their reflexive activities: for improvement of study and communication, solution of conflicts, etc. Besides, the students perform different creative tasks which refer to unsupervised activities: drawing up a self-concept (psych profile), psychological profiling of other people, description of the structure of a specific activity, drafting the texts of dialogues, socio-psychological profiling of the team (collective).

*Based on findings of the study of psychological and pedagogical training of future engineers, we have proved and confirmed by experiment the hypothesis that psychology study needs to continue at undergraduate level.* The fact is that specialists while working communicate with managers of various levels, colleagues, workers and solve together different problems. In this context the significance of psychological aspects of interpersonal communication, skills of interaction, joint decision-making, proper responsibilities allocation increase greatly. Many young specialists become leader personnel soon after graduation of the institute or a bit later. Market economy requires new culture of management from modern leaders. The main objective of the manager is to create conditions for good performance and social development of every worker and the whole team (organization). For this to succeed, the manager should know the nature of work and techniques (goals, means, process, etc.) on one hand, and workers (employees), their qualification, abilities, incentives, character traits and other attributes on the other hand.

Psychological background of the manager makes it possible for him understand himself and other people, first of all employees. The knowledge of psychology helps him to better interact with people, establish emotional

contact, influence if necessary, communicate effectively, supervise the staff, establish a favorable psychological climate in the team (collective), and develop positive reinforcement of work and creative activity.

Thus, future specialists of all profiles should have organizational and managerial skills. In view of this the organizational and managerial activities are included in FSES for all master's programs. A connected problem in this regard is training process design. An education program for discipline "Psychology of management" has been developed and implemented at our University by the Department of Social Science and Technologies to address this problem. The program incorporates the following subjects: social and psychological profile of the manager, psychology of manager's activity, employees' incentive, business communication, personnel psychology, management decisions and execution. The unsupervised activity of students includes along with study of source material the following creative activity: social and psychological profiling of the director, his management activity analysis, social and psychological profiling of the team, labor incentive, development of an activity scenario, drawing-up a management decision-making plan (through the example of resolving any problem) [4].

We have developed a study guide for this subject. While explaining the importance of psychological knowledge for engineering one should mention engineering psychology. As it is known, the developers of current technologies must take into account all human factors: human and environmental safety when in operation, automated control system operator's specific mental processes, performance and exhaustion, comfort, etc. At the confluence of engineering, psychology and design there emerged ergonomics which is meant to improve labor environment during designing man-machine system. With this in mind, we have included "Engineering psychology and ergonomics" into curriculum of some engineering subjects. It encompasses such topics as subject and objectives of the course, operator's activity in "Man-machine" system, operator's psychological characteristics, engineering and psychological development of operator's activity, operators training, etc.

*Graduates with master's degree are eligible to teach at vocational schools of all levels. They should have psychological and pedagogical competency.* One of the main education subjects aimed at solving this problem is Psychology and Education of High School (72h),

included into curriculum of master's courses (elective component of education program). It embraces the following topics: subject, basic concepts and objectives of the discipline; purpose and content of higher vocational education; Federal State Education Standard of higher education; vocational education structure principles; nature and regularities of learning process; methods and organizational forms of education and training of students; modern teaching technologies; teacher's activity and personality, etc. Psychological knowledge comprises: psychology of learning and cognitive activities of students; psychological characteristics of students; student body psychology; teaching activities psychology; personality of high school teacher; teacher communication psychology. The author has published a study guide on this subject "Psychology and pedagogics of high school" which is considered to be one of the best textbooks and is popular among teachers and masters of universities [5].

The author has a long teaching experience which shows that the most effective teaching methods are: problem-based learning, group methods of problem solving (brainstorming, case study, group discussion, gaming), testing (personality examination and evaluation), psychological experiment, solution of psychological and teaching problems, etc. Implementation of group forms and methods of learning and cognitive tasks solution is aimed at overcoming the conflict between teacher-centered teaching and team work in industries. Work activity in industries is known to be collective, where each specialist should possess such qualities as corporate feeling, tact, mutual understanding, sociability, respect for the opinions of other people, etc. In teacher-centered teaching the abilities of the student group and cognitive activity potential are not realized, the educational importance of training declines, organized interaction between students is not put into practice. To overcome these shortcomings it is necessary to apply different forms and methods of team work at classroom and extracurricular activities. Implementation of these methods implies search activity of students, so these methods are called heuristic ones.

In group learning and cognitive activities every student takes an active part in problem solving. He interacts with other participators, communicates, and shows his well minded and emotional attitude, thus realizing his mental potential. The student becomes active and thoughtful player. Students of small groups (3-7 people) have higher knowledge level; a better organized and united group is more ef-

ficient than the same number of people working alone. Group training provides with a sense of accomplishment. Hypothesizing, listening to and taking stock of the opinions of other people, compromising, cooperating with each other, the students gain experience of decision-making and professional communication. Besides, the skills of future professionals are formed [1].

*It is difficult to overestimate the importance of psychology and pedagogics for teaching activities.* Psychological knowledge is necessary for the teacher to understand psychological and age characteristics of students, for communication, cooperation, the student group guiding and learning activity management. Psychological knowledge is used by every teacher in development of teaching methods and teaching materials. During this process the following issues emerge and are to be developed: determining learning needs and students training, selecting teaching materials in accordance with the education program, choosing adequate methods and tools, scheduling of all kinds of studies (including extracurricular activities) in accordance with the education program, tests development for knowledge control and evaluation.

*Analyzing professional activities of the teacher it cannot go unnoticed that these activities comprise elements of guidance.* There is a number of organizational challenges meeting which the teacher acts as a leader: a curator, a leader of graduate internship, a scientific advisor, a chairman of methodological council, a head of department, a deputy head of the department, or a head of a scientific laboratory, etc. Even if the teacher just gives a lesson – he acts as a training provider, as a curator, i.e. as a manager. In order to provide a methodological assistance for teachers and heads of structural units of the University we have published a study guide "Pedagogical management" [1]. It comprises the following parts: the subject and objectives of pedagogical management, basic theory of the discipline, educational organization as a subject of teaching activities, educational process as an object of management, control of learning and cognitive activity of students, cooperation and communication of teachers and students, quality management, etc.

It stands to reason that *the department functions go beyond just teaching of psychological and pedagogic disciplines.* Teachers of Psychology and Pedagogics carry out research on psychological, educational and social issues. As a result of the research, there have been defended four Doctoral Theses and many

Candidate's ones. The articles and monographies of the authors are published by leading publishers of the country. *Teachers and assistants of the department are engaged in scientific and methodological work, the aim of which is to provide education process with a complex of educational and program materials, teaching aids and information (academic and methodological complex)*. Besides, the department's methodological work pursues the following aims: constant improvement of training methods; development of new techniques of education process arranging; improvement of teaching skills, etc.

Pedagogization of education process intends constant professional development of the University teachers with the active involvement of educational psychologists of our department. Synthesis and analysis of our University work experience show that the most efficient methods of teachers upgrading are:

Aubakirovaregular self-education in order to improve professional knowledge of the subject taught, of pedagogics and psychology, and of teaching methods;

- scientific and methodical work aimed at development of academic and methodological complex and improvement of nature, techniques and organizational forms of education;

- carrying out methodological research;

- teachers' involvement in scientific conferences and seminars (The Ufa state aviation technical university has been hosting annual Education Issues all-Russia scientific and methodological conference under the aegis of the Russian Federation Ministry of Education and Science Research Centre since 1990);

- teachers' participation in publishing a collection of scientific articles (our University publishes annually the collection of research papers [3];

- study, synthesis and implementation of advanced teaching experience;

- theses writing and defense (Master's, Candidate's and Doctoral ones) on Psychology, Pedagogics and Methodology;

- arrangement of pedagogical excellence seminars and lectures on Psychology and Pedagogics for young teachers;

- study at Advanced Training Faculty for young teachers.

As a rule, the first-year students face the problem of adapting to university studies specifics. This personal adaptation makes up one of personality development strategies. Adaptation as a psychological process of entering social, professional environment occurs as the environment becomes personal fulfilment area.

The level of social adaptation of the first-year students depends on many factors: personality psychological features, nature, business proficiency, behavior, values-based orientations, academic efforts, health, social environment, etc. In order to assist the first-year students we have published a study guide. It embraces the following topics: personality psychological features, requirements for a modern specialist, professional identity, psychological characteristics of students, learning activities psychology, creativity development, arrangement of students learning and research activities, self-management secrets, etc.

*The Ufa state aviation technical university has developed the first-year students adaptation measures* comprising: student groups formation; curators assignment; student initiation ceremony; experienced teachers presentation; introduction to the University history and famous graduates; dormitory consultation organization by efforts of teachers and senior students; declaration of education process goals and structure as well as the rights and responsibilities of students; teaching of "Psychology and Pedagogics"; curators', teachers' and senior students' assistance in arrangement of learning activity of student group; intersession efficiency report to monitor extracurricular activities and render assistance in time.

*Curators assigned by the Dean are responsible for educational work with first-year students*. In fact every teacher takes part in this work (worldview and social significance of the subject, teacher's personal influence on the students conscious and behavior, teachers' cooperation, etc.). Besides, every department uses various kinds of educational work involving both students and teachers. These include: students competitions; "The best student group" competition; disputes; hobby clubs; movies and theatre-going, visits to museums and exhibitions; celebrities, war and labor veterans, production workers meetings; amateur art activities; bulletin-board newspapers publishing; student dramatics, concerts, discos; participation in voluntary work, sports competitions; tourist rallies; themed nights; participation in local, regional and national actions; development of students self-management; arrangement of productive labor of students.

Thus, we can conclude that psychological and pedagogical knowledge in education process of institutions of higher education are of a great importance. In fact designing and functioning of all elements of education process should be based on modern advances in pedagogics and psychology.

However, *analysis of national education system concerning evaluation of youth psychological culture, communication and labor culture in all spheres of social life shows that pedagogics and psychology teaching is not sufficient*. It is time to have a new look at the problem of the younger generation psychology grounding. Lack of psychological knowledge, poor communication culture result in conflicts, rudeness (in family, at school, in the military and at enterprises), alcohol abuse, family disruption, etc. Violent behavior increase is seen among young people during sport events, meetings and festivals. Juvenile crime becomes an area of strong concern.

*Psychological knowledge is of great importance for schoolchildren occupational guidance as well*. Currently the problem of occupational guidance for schoolchildren is partly solved through profilization (introduction of profession-oriented subjects). The Russian Federation Ministry of Education and Science has established 11 specialties including physics and mathematics, science, information technology, industrial technology relevant to engineering. The purpose is to study and evaluate schoolchildren psychological features in accordance with these options by psychodiagnostic tests.

Unfortunately it should be acknowledged that the problem of professional identity at school is solved insufficiently. However it is very important for school leavers (prospective students) because sound decision influences occupation choice and future life.

In conclusion it is worth pointing out another aspect – psychological aid delivery (by analogy with medical aid delivery). To my opinion *it is necessary to establish a psychological service at schools, colleges and universities in order to render psychological aid, to monitor psychological state of students, teachers and members of the staff*. At present psychologists are considered to be needful only in extremal situations for rendering psychological support for victims and their relatives. But psychological aid is necessary in real life too. In fact psychological aid should be widely available. Under free market conditions, goods flow, scarcity of money, income inequality, intensification of labor, information overload, conflict situations increase and other factors of modern life result in psychological tension, depression, inadequate and aggressive behavior, etc.

Upgrading psychological background and culture of the younger generation should eliminate negative developments in people's conscious and behavior, as well as pave the way for their mental and social evolution.

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