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# ТӘРБИЕЛЕУ ЖӘНЕ ОҚЫТУ ТЕХНОЛОГИЯЛАР МЕН ТЕОРИЯСЫ

## ТЕОРИЯ И ТЕХНОЛОГИИ ОБУЧЕНИЯ И ВОСПИТАНИЯ

### THEORY AND TECHNOLOGIES OF EDUCATION AND TRAINING

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### **The formation of skills of independent work among university students**

This article is dedicated to the organization of independent work of students in higher educational institutions. Here are considered such concepts as «autonomy», «self-learning» and «creative independence». The authors analyzed the data of domestic and foreign scholars on the nature, characteristics and distinctive features, challenges and benefits of self-education. They propose definition of «self-education» as part of continuing education, as well as a set of skills and strategies that support students' independent learning. The article also contains information about the specifics of independent work of students in the context of modernization of current education system. In addition, the authors propose to get acquainted with some aspects that affect the activity of self-education of students, and it is their psychological readiness for independence and autonomy in the educational process. One of the highlights, which received special attention in the article, is the study of the key skills required for successful implementation of student independent study at a higher educational institution. The authors examined the role of the student and the teacher in the process of performing independent work at the university, as well as the characteristics and difficulties associated with the transition to a more independent student learning.

*Keywords:* independent work, university students, education system, features and peculiarities, skills and abilities, teaching, professional training, self-education, development, specialists.

The process of modernization of the educational system, particularly the higher professional education, sets the task of training specialists who are able to adapt to changing life circumstances, to acquire the necessary knowledge independently, to apply it in practice skillfully to solve a variety of problems, to think critically, to deal with information competently and to engage in self-educational activity.

A person who has an experience of creative independent activity is always at a higher level than those who use standard methods. In addition, a specialist who has a certain intellectual level and the ability to raise it creatively, can rationally accept, develop and implement advanced technologies, this can become a stimulus to progress. Thus, society, consisting of individuals with a high creative potential, can provide decent living conditions. This explains great interest of pedagogical sciences in the process of formation of the creative independence of any person.

Independence is defined in pedagogy as one of the characteristics of the person. This characteristic is determined by two factors. The first factor includes the basic skills that a person possesses. The second is the attitude of a person to the process of activity, the result and the condition of implementation.

The classification of levels of independence is related to the separation of the activity into the reproductive and productive or creative. In the first case we have in mind the independence in the reproductive activity. In the second case changes occur in the activity itself (its purpose is not to obtain the final product, but to find new ways). This independence is defined as the creative. Studies have shown that creativity is the highest level of independence and human activity. «Creation can be defined as production of idea or product which is innovative and significant. Creativity is how we can move beyond our usual lives, reality and con-

sciousness, to gain access to the deeper ways of knowing, and even deep spiritual realizations». Today, such traits of personality as creativity and independence are fully studied by psychologists and educators. The studies cover various factors of creative independence that make it possible to develop one kind of function or another [1].

Self-education of a person - this is his deliberate systematic cognitive activity needed to solve the challenges that arise at different stages of life, and to solve socially significant tasks to meet his needs not only to improve the level of education, but also to master the second and third specialty.

Self-education is an integral part of lifelong learning. Lifelong learning is understood as the systematic, purposeful activity to acquire knowledge and develop the skills, abilities and required qualities both in all types of general and special educational institutions and in the process of self-education. Self-education and self-development are really important for the formation of student's personality.

Self-educational activity of the student - it is such an activity that is controlled externally by the teacher and is simultaneously self-guided by the student. Along with this, self-education is a means of self-improvement, as it promotes the development of purposefulness, persistence in achieving goals, internal organization, diligence and other moral qualities. Consequently, the self-education is a form of independent work of students, it allows a person to adapt to changing conditions and the content of professional work, promotes the enhancement of professional competence.

Success of self-education depends on a number of components of cognitive activity, paramount ones among them are: 1) to possess the necessary level of intellectual development, to have an ability to pose questions, identify problems and formulate them, to foresee and plan consistent steps to find answers and solutions; 2) an ability to mobilize and update the knowledge and methods of activity of those already learned, to select one needed to solve the problem, relate them to the terms of the problem, to draw conclusions from the studied facts; 3) a desire to solve the problem (task), to find the answer to emerged questions; to target oneself, if necessary, for further self-study, and in the process of solving the problem to know something new applying a variety of sources.

The educational process in the system of higher professional education plays a crucial role in the development and accumulation of cognitive independence among students as the basis to master any knowledge, including professional one. But in secondary schools and in institutions of secondary and higher vocational education the training focuses mainly on building knowledge and skills, and the development of students' abilities for cognitive independence has received little attention. Increasing the role of students' independent work denotes a fundamental review of the organization of educational process, which should be designed to promote the development of student's ability to use knowledge creatively, tendency for self-organization, to adapt to profession and society fast and successfully. To be ready for the future professional activity, students learn additional volumes of knowledge at their own initiative; acquire skills and abilities necessary for independent work and further self-education. The transition from compulsory education during the initial stages to the ability to learn independently throughout later life is one of the challenges in pedagogy of higher education. It is also necessary to take into account the degree of preparedness of students for independent work, a certain level of self-discipline of students. In this case, we need targeted teaching independent work, which includes the formation of methods to model the learning activity itself, students' determination of optimal daily routine, the awareness and the consistent refinement of rational work with the material, the acquisition of deep and at the same time dynamic (high-speed) reading techniques, drawing plans of various activities, note-taking, setting and solving educational and practical tasks. This is particularly necessary for the students of first and second courses. Within the educational process in the system of higher professional education it is important to show students that the willingness to work independently, to a continuous search for new, relevant knowledge, to the competent implementing of informational processes (search, storage, processing and dissemination of data) determine the success of personal growth and social demand.

Independent work is an integral and important form of learning. The purpose of individual work is to develop students' knowledge and skills as the main professional competences aimed at independent and creative solution of technological and scientific problems that arise in the practice of the future specialist. And the purpose and means of training, the relevance of search methods and ways to effectively manage the process are extremely high due to the independent work of the student. Acute urgency of management of student's independent work is evident. Self-education is an important component of the educational process, where there comes the formation of skills, abilities and knowledge, and, in addition, it provides students with the knowledge and techniques of cognitive activity, interest in creative work and, ultimately, the ability to solve technical and scientific problems. It is exactly in the course of independent learning there is a possibili-

ty to show motivation, determination, self-organization, self-reliance, self-control, and other personal characteristics of the student. In this regard, planning, organization and implementation of student, in the absence of the teacher, is important during his training at the university. The learning process should be organized so that students could learn not only the content of the teaching subjects, but also the ways of acquiring knowledge. Advantages of using computer technology in the organization of independent work include: the ability to provide the individualization and differentiation of education; expansion of the materials by providing access to different resources (including long-term, short-run, rare materials, etc.); stimulating activity and motivation of students in the development of teaching materials; intensification of the learning process; convenience and clarity of presentation; easy handling for rapid retrieval and simulation of processes and events, display them in the dynamics of growth of efficiency of educational process. The practical result of students' independent work is the creation of theoretical material; consolidation of knowledge of theoretical material through the use of necessary tools in practice; application of knowledge and skills to analyze the situation and make the right decision; application of knowledge and skills to create their own position.

The success of independent work is determined by the level of students' readiness. Self-education involves students' maximum activity in various aspects: the organization of intellectual work, search for information, the desire to make a discovery of new knowledge. Psychological conditions of the individual work among students is their academic performance, positive attitude towards it, interest and enthusiasm for the subject, understanding of necessity for proper organization of independent work to acquire skills and experience, as well as creativity.

The main difficulty is the need for self-organization. Many students have great difficulties related to the lack of skills of analysis, note-making, work with primary sources, ability to articulate, manage their time, take into account the individual characteristics of their mental and physiological features, almost complete lack of psychological readiness to work independently one from another, non-acquaintance with general rules of its organization.

Self-education is designed not just to master the discipline, but also to develop the skills of independent work in scientific and professional activities, the ability to take responsibility to solve the problem, to find constructive solutions how to escape from the crisis. In accordance with the new educational paradigm, regardless of specialization and its nature any budding professional should possess the fundamental knowledge, skills and abilities of his core business, have the experience and skills of creative research for new challenges. In addition, independent research has educational value: it creates independence, not only as a set of skills, but also as a character trait, which plays an important role in the structure of the personality of modern specialists with high qualification.

Modern technologies for the development of individual creative thinking are supported by self-training. Criteria of university education quality are radically changing; instead of the amount of knowledge the education system is intended to develop the ability for self-learning and creative thinking to support innovative behavior and motivational structure of personality which are developed with the aim to find adequate responses to the challenges of the rapidly changing economic, social, cultural and political environment. The problem is relevant for the modern university as the orientation of an active and independent learning activity of students, which is becoming the basis for preparing modern specialists. Today «cognitive independence» has become a subject of study of a number of authors (V.F. Torosyan), due to the fact that the quality of integrated personality is characterized by the need and ability of students to learn and practice the mastering knowledge and techniques, readiness to solve working problems, the ability to define the purpose of activities, proper use of the knowledge and techniques of cognitive activity for self-education and professional development [2].

An important contribution to the development of pedagogy of creativity has been given by many scientists. Works of V. Shubinskiy (1988) are devoted to the creative process. The criteria of creative activity are developed by I. Lerner (1981). Features of creative activity are studied by I. Kaloshina (1983) and M. Makhmutov (1977); creative thinking – by Z. Kalmykova (1981) and V. Krutetskiy (1976) [3-5].

The concept of independent learning is often associated with other approaches to learning, such as the «personification» and «student-centered learning». Discussion of self-learning often occurs in the context of important issues such as the role and relationship between student and teacher, as well as the role of information and communication technologies in the learning process.

Successful independent learning depends on a number of external and internal factors. External factors include the establishment of a strong relationship between teachers and students, and the creation of an «enabling environment» where ICT can become an important element. The internal factors are the skills that

some particular students should acquire. They include cognitive skills such as memory and focusing attention and problem-solving, meta-cognitive skills related to the understanding of how learning takes place, as well as affective skills associated with feelings and emotions.

Benefits include improved self-learning performance; enhanced motivation and self-confidence; better awareness of the students of their boundaries and possibilities of overcoming them; opportunities of teachers to provide differentiated tasks for students; and promoting social integration by means of countering the alienation.

Details of some studies have shown that the use of self-learning approaches have allowed teachers to organize a wide range of activities in their classrooms and give more attention to teaching and learning, than the organizational aspects and behavior of students. For example, it allowed teachers to work with certain groups, while the other groups operate independently of each other. Two studies have shown that students, who are independent in learning, work at higher standards, more motivated and have more self-esteem than others. Students develop skills that help them to continue their own learning, using their own ideas to form an opinion; solve the problems using a variety of strategies in their learning.

A key component of independent learning is the transfer of responsibility for the learning process from the teacher to the student. It is intended that students acquire an understanding of their own learning, being motivated to learn and work with teachers to structure the learning environment. Self-learning is not simply involving students in the work alone; teachers play a key role in promoting and supporting self-learning, for example, during the group work.

External elements that support independent learning include the development of a strong relationship between teacher and student, as well as the creation of «an enabling environment». «Enabling Environment» includes the proper «physical environment», a flexible approach to the time that the teacher gives the students to work on specific tasks and general willingness to carry out independent learning by students. Appropriate resources are also needed, and it is important that teachers know that the work is performed.

An essential element of independent learning is a positive relationship between teachers and students, based on trust. Mutual responsibility for training is also needed.

There are a number of skills that students need to acquire to be successfully engaged in independent learning:

– cognitive skills: such as the ability to build informal rules for solving problems; classification of objects based on specified criteria; hypothesis formulation and logical reasoning. These skills are important for the creation of «readiness to a learner»;

– meta-cognitive skills: some reviews have found evidence that for a year 6 students were able to describe how they learn, and to identify the key activities necessary for learning, such as listening, memorization, use of previously acquired knowledge and the use of formal strategies. Other studies have emphasized the importance of the fact that students are able to reflect on what they have achieved, monitor their progress and use the self-assessment in order to take responsibility for their own learning;

– emotional skills: these skills are associated with controlled senses. Studies define motivation as the most important influencing attribute towards the independent learning. One study showed that another important affective skill that is associated with motivation is «the delay of satisfaction». This refers to the ability to wait for the results of achievement.

The key role of a teacher in facilitating the students to become independent learners is to ensure that they participate actively in the learning process. There are a number of strategies that support students' independent learning:

- scaffolding: this refers to the assistance provided by a qualified person, in this case, the teacher who helps students in their learning. The goal is the gradual transfer of responsibility from the teacher to the student, where he mildly reacts to the students' responses, and does not follow a predetermined educational path;

- giving the students an opportunity of self-monitoring: self-control depends on two processes - setting goals and getting feedback from others and from oneself. The teacher promotes self-monitoring of students by helping them to use internal and external feedback to see whether the strategy that he used effective in achieving training objectives;

- giving the model of behavior: independent learning improves by means of encouragement of students to copy the behavior of their mentors, including, for example, when the teacher shows students how to categorize information so that it was easier to remember;

- development of communication, which includes language that focuses on the training: it helps students to understand the actions that are involved in learning better, to understand their own learning style, and helps students and teachers to share ideas;

• provision of feedback with accomplished homework: it was found that it increases the confidence of students in independent work and helps them to develop a reflexive aspect of independent learning.

During successful independent learning the role of a teacher, acting as an expert who gives knowledge, is shifted to the role of «coach», who helps students to master the strategies necessary for learning. It is assumed that the main type of activity is the teacher helping the students to create their own ideas about learning objectives.

A number of studies have suggested that ICT play a useful role in independent learning as: they provide opportunities for easy self-assessment and measurement; increase the speed of access to information; and provide an environment for interaction between students and between students and their teachers.

According to the review by the General Education Council of England it is believed that teachers need to plan classroom activities so as to stimulate creativity and diversity of responses, for example, giving students the opportunity to present their work in different ways, including in the form of video, written and oral presentations.

The process of students' training in the conditions of information-learning environment is the effective implementation of special information technologies to improve the perception of educational material. The spread of modern computers, free access for the students to the Internet, the development of applying technologies – everything is actively implemented into the educational sector, through the creation of specialized information services, entirely new systems and learning technologies. One of the main objectives is to acquaint students with modern means of information technologies necessary for qualitative performance of independent work.

Without teacher's direct involvement or participation the student must learn how to organize his activity, to regulate and control it in terms of information and learning environment. There is a problem of students' awareness about the opportunities to use special informational and educational Internet resources within their independent work. Another problem is the difficulty of choosing between educational online resources, and resources that are entertaining.

According to the conducted numerous polls, the computer and the Internet are the main sources in the independent work of students. Most of the students enjoyed special programs and the Internet for self-training. According to L. Ivanova: «Information technologies penetrated deeply into the life of modern youth. Multi-functional portable devices as mobile phones have become its integral part. Despite it is called «phone this means of communication is used to solve a variety of problems» [6].

The research results show that the principle how to choose necessary resources in the Internet is chaotic. An interesting fact is that the students, making a request in the search systems, go to different links, regardless of the source of information. Unverified information becomes prior, so there are difficulties in carrying out independent work, and as a result there are errors in the works of students.

How to make useful educational information for students more prior? The issue of self-organization in this case is one of the most important. Solving the problem of students' awareness of the availability of educational online resources, we can avoid the «chaotic wandering» of students in search of necessary material, hence temptations to distract become smaller.

On the one hand, in conditions of modern information and learning environment the students have opportunity to perform independent work more qualitatively, using different educational online resources and software, but on the other hand, when they get free access to information of any nature on the internet, there is a possibility to reduce the level of their performance. It is necessary to raise the awareness of students on this issue, to create conditions for the effective organization of independent work among them in the conditions of information and learning environment.

## References

- 1 Андреев В. Преподавание курса для творческого саморазвития / В. Андреев. — Казань: Центр инновационных технологий, 2000. — С. 608.
- 2 Торосян В.Ф. Познавательная самостоятельность студентов технического колледжа как качество интегрированной личности: материалы VIII Междунар. конф. «Инновации в науке и образовании - 2010», посвящ. 80-летию со дня основания университета. — Калининград: КГТУ, 2010. — Ч. 3. — С. 293–295.
- 3 Гарунов М. Индивидуальная работа как средство накопления опыта творческой деятельности / М. Гарунов // Советская педагогика. — 1973. — № 4. — С. 52–57.
- 4 Лернер И. Дидактические принципы методов обучения / И. Лернер. — М.: Педагогика, 1981. — С. 186.

5 Махмутов М. Организация проблемного обучения в школе / М. Махмутов. — М.: Просвещение, 1977. — С. 240.

6 Иванова Л.А. Совместная адаптация медиа- и образовательного пространства — ключ к успешному решению проблемы космического лагуна в высшем профессиональном образовании / Л.А. Иванова // Вестн. Северо-Восточного федерального ун-та им. М.К.Аммосова. — 2009. — С. 38–44.

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## Жоғарғы оқу орнының студенттерінің жеке дағдыларының қалыптасуы

Мақала университет студенттерінің өздік жұмысының түрлі аспектілері тақырыбына арналған. Мұнда келесі ұғымдар қарастырылды: «өздік жұмыс», «өздік білім алу», «өздік шығармашылық». Авторлармен отандық және шетелдік зерттеудің негізі мақсаты өзін-өзі білімі сипаты, ерекшеліктері, мәселелері және артықшылықтары туралы деректерді жинау және талдау жасалды. «Өздік білім алу» ұғымы білімнің үздіксіз негізгі болып табылады, сонымен бірге бірнеше дағдылар мен стратегиялар, студенттердің өздік жұмыстарында қолданылады. Сондай-ақ әлемдік білім беру кеңістігінде студенттердің өзіндік жұмысының ерекшелігі туралы ақпарат берілді. Авторлар білім алу үрдісінде студенттердің өздік білім алу құзыретіне әсер ететін тәуелсіздік пен өзіндік психологиялық дайындығында келесі аспектілермен танысуды ұсынды. Мақалада жоғарғы оқу орындарында студенттердің оқу процесінде өздік жұмыстарын табысты қамтамасыз ету үшін негізгі дағдылармен және біліктіліктеріне ерекше маңыз берілді. Авторлар жоо өздік оқу процесінде студенттің және оқытушының ролін, сонымен қатар өздік оқуына ауысуына байланысты ерекшеліктер мен қиындықтарды жан-жақты қарастырды.

*Кілт сөздер:* өздік жұмыс, жоғарғы оқу орындарының студенттері, білім жүйесі, ерекшеліктері және өзгешіліктері, дағдылар және ептіліктері, оқыту, кәсіби оқыту, өздік білім алу, даму, маман.

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## Формирование навыков самостоятельной работы студентов вузов

Статья посвящена вопросам организации самостоятельной работы студентов высших учебных заведений. Рассмотрены такие понятия, как «самостоятельность», «самообразование», а также «творческая самостоятельность». Авторами проведен анализ данных отечественных и зарубежных исследователей о характере, особенностях и отличительных чертах, проблемах и преимуществах самообразования. Предложено определение понятия «самообразование» как составной части непрерывного образования, а также приведен ряд навыков и стратегий, поддерживающих самостоятельное обучение студентов. Дана информация о специфике самостоятельной работы студентов в контексте модернизации современного образования. Помимо этого, авторы предлагают ознакомиться с некоторыми аспектами, которые влияют на самообразовательную деятельность студентов, а именно на их психологическую готовность к независимости и самостоятельности в образовательном процессе. Один из основных моментов, которому уделено особое внимание — изучение ключевых навыков и умений, необходимых студентам для успешной реализации самостоятельной учебной работы в высшем учебном заведении. Выделены роль студента и преподавателя в процессе выполнения самостоятельной работы в вузе, а также особенности и затруднения, связанные с переходом на более самостоятельное обучение студентов.

*Ключевые слова:* самостоятельная работа, студенты высших учебных заведений, система образования, черты и особенности, навыки и умения, преподавание, профессиональное обучение, самообразование, развитие, специалисты.

## References

- 1 Andreyev, V. (2000). *Prepodavanie kursa dlia tvorcheskoho samorazvitiia [Teaching the course for creative self-development]*. Kazan: Tsentr innovatsionnykh tekhnolohii [in Russian].
- 2 Torosyan, V.F. (2010). *Poznavatelnaia samostoiatelnost studentov tekhnicheskoho kolledzha kak kachestvo intehrirovannoi lichnosti [Cognitive independence of students of technical college as a quality of integrated personality]*. Proceedings from Innovations in science and education - 2010: *VIII Mezhdunarodnaja konferentsiia posviashchennaia 80-letiiu so dnia osnovaniia universiteta – 8nd International conference, dedicated to the 80<sup>th</sup> anniversary of university*. (Vol. 3, pp. 293–295). Kaliningrad: KHTU [in Russian].
- 3 Garunov, M. (1973). *Individualnaia rabota kak sredstvo nakopleniia opyta tvorcheskoi deiatelnosti [Individual work as a means to accumulate the experience of creative activity]*. *Sovetskaia pedahohika – Soviet pedagogy*, 4, 52–57 [in Russian].

4 Lerner, I. (1981). Didakticheskie printsipy metodov obucheniia [Didactic principles of teaching methods]. Moscow: Pedagogika [in Russian].

5 Makhmutov, M. (1977). Organizatsiia problemnogo obucheniia v shkole [Organization of problematic teaching at school]. Moscow: Prosveshchenie [in Russian].

6 Ivanova, L.A. (2009). Sovmestnaia adaptatsiia media- i obrazovatel'nogo prostranstva — kluch k uspeshnomu resheniiu problemy kosmicheskogo lakuna v vysshem professionalnom obrazovanii [Co-adaptation of media- and educational space — a key of successful solving the problem of space lacunarity in higher professional education]. *Vestnik Severo-Vostochnogo federal'nogo universiteta imeni M.K.Ammosov – Bulletin of North-East federal University named after M.K. Ammosov*, 38–44.

Репозиторий КарГУ