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ACTIVATION OF SELF-COGNITIVE ACTIVITIES OF STUDENTS OF A TECHNICAL UNIVERSITY BY IMPLEMENTING EFFECTIVE TOOLS

Abdurazzakova Dildora Anvarovna
Senior Lecturer, Department of "Intelligent Transport Systems" TSTU.
dildoraabdurazakova8222@.gmail.ru

Abstract

It is impossible to teach a student everything that is needed in professional activity, but it is possible and necessary to teach how to independently acquire knowledge, apply it in practice, cooperate, set oneself and seek solutions to problems. In this regard, there is a need to increase the effectiveness of classes, since it is through correctly organized classes that the named goals can be achieved.

The ongoing global changes in the field of education and vocational training put in the first place the problem of the formation of a competence-based approach to training. This means the need to educate a socially formed personality with a focus on a stable civic position, which would be able to act independently, have the skills to make informed decisions, take responsibility for their own actions, and be able to constantly develop professionally. A special role is assigned to the ability to learn all life, to master all the new subtleties of the profession and to quickly adapt to the market conditions [1]. The main trend is seen in the improvement of approaches to learning processes, where the idea of developing independence, increasing the effectiveness of vocational training is put forward in the first place [2].

The solution to this problem is possible only on condition of activation of independent cognitive and labor activity by introducing a system of effective means and methods of encouraging students to active independent study and work.

Defining the concept of "activation of cognitive activity", in our research we relied on the principles of active learning Zankova L.V. [3] and the conditions of active learning, formulated by TI Shamova. Introducing the concept of cognitive activity, we relied on the definition of N.D. Butuzov and on the determination of the levels of cognitive activity. Thus, the general conceptual basis of our research was the views of K.Sh. Akhiyarova, Yu.P. Pravdin, A.K. Gulyamova, V.V. Davydova, L.V. Zankova, G.I.Shchukina, R.A. Nizamov.

Active learning is based on the establishment of an optimal balance between learning and learning, i.e. between the instructive side of the educational process and the independent work of trainees. The main goal of active learning is to ensure a fruitful independent educational and cognitive activity of students; establishing the optimal

balance between teaching and learning, which will ensure the productive work of students within their maximum capabilities [4].

Thus, we see that the activation of training is one of the main goals of the intensification of training, the achievement of which is effective if it occurs with an optimal ratio of time and effort and the result obtained.

Psychologists and educators have identified the most important conditions for the implementation of active learning. Shamova T.I. divides these conditions into three groups. “The first group includes conditions,” she writes, whose purpose is to ensure the formation of a motive for activity:

1) The formation of cognitive needs;

2) Education of stable cognitive interests;

3) A combination of emotional and rational in teaching.

The second group of conditions is designed to ensure the successful formation of a knowledge system based on self-management of the learning process:

1) The formation of intellectual skills associated with the processing of assimilated information;

2) The formation of skills to carry out planning, self-organization and self-control in the learning process.

The purpose of the third group of conditions is to include each student in the process of active learning:

1) An individual approach in a collective work environment;

2) Control over the course of educational and independently cognitive activities of students. "

The activity of trainees, as a rule, manifests itself in their attitude to cognitive activity. Cognitive activity presupposes a greater degree of student independence than learning. In addition, the transformative nature of cognitive activity lies in the fact that the acquired knowledge transforms the subject of activity, therefore we believe that the result of cognitive activity can be the student's personal position on a particular issue. It implies a certain idea of the individual about the problem under study.

Thus, cognitive activity is an activity, the condition of which is the individual's independent representation of the problem under study, and the result is a transformation of the personal position on a particular issue.

Shchukina G.I. indicates three levels of cognitive activity of students, each of which can be forming in its own way:

- The lowest level - reproductive, imitative activity, all actions occur at the request of the teacher

- The second level - search activity, characterized by an active cognitive response: "It is inherent in the student as a person who takes the initiative in cognition, the desire to know, interest in learning"

A higher level is the creative activity of students, which brings them very close to cognitive independence.

In order to develop the activation of the independent cognitive activity of students of the transport profile, the development of computerized areas is required, which provides many opportunities to improve the quality of education in a higher educational institution, the formation of enhanced skills of independence. Activity among students, the development of the ability to search for information, its comprehension for the purpose of continuous professional growth and building a successful career.

Thus, if the cognitive activity of a student is his activity on mastering knowledge, skills, skills, then cognitive activity is the student's desire to effectively master knowledge, the readiness to mobilize volitional efforts and the choice of optimal ways to achieve the goals of cognition, as well as the readiness for independent activities. This conclusion helps to understand that cognitive activity and independence are inextricably link. The source of cognitive activity and independence is the need for acquiring knowledge, mastering the methods of educational and cognitive activity, the need for self-development and self-improvement [5].

One of the relevance of innovations today, which helps to increase the cognitive activity and independence of students in the transport sector, is the use of mobile technologies in the learning process in order to solve all kinds of pedagogical problems by gaining general access through networks to the sources of knowledge of educational institutions. The dynamics of the use of mobile devices in education is increasing for many reasons. Among them: widespread use of mobile gadgets among trainees (often one user can have two or more devices); stable and very active interest in their application [6].

- According to a number of scientists (V.I. Zagvyazinsky, Sh.A. Amonashvili, M.N. Skatkin), the principle of positive motivation and a favorable emotional climate of learning is very important both for the emotional comfort of participants in the educational process and for the effectiveness of knowledge assimilation [5] ...
- Self-directed learning and immediate content delivery on demand are the hallmarks of mobile learning. It provides users with the opportunity to learn outside of business hours and creates an environment for collaborative learning and interaction.

In [7], the following categories of mobile learning are distinguished:

- Technology-driven mobile learning - Some specific technological innovations are located in the academic setting to demonstrate technical feasibility and pedagogical capabilities.
- Miniature but portable e-learning - mobile, wireless and portable technologies are used to replicate approaches and solutions already used in conventional e-learning tools. For example, the porting of some e-learning technologies, such as the virtual learning environment (VLE), to these technologies, or, for example, flexible replacement of static desktop technologies with mobile technologies.

To study whether mobile android technologies are successful in enhancing the independent cognitive activity of higher education students in the transport sector, we have created a mobile application for mastering the skills of practical laboratory work using the example of the subject "Fundamentals of road safety organization". This mobile application works in phones running on the android system. Today the system “Windows” “android” “IOS” is the most widespread. The advantage of this mobile app:

- The Internet is not needed, this makes it possible to study at no extra cost (free distribution among students) and in remote areas.
- The mobile application is programmed in the form of a presentation this gives the student comfort during training.
- The mobile application is located in the mobile device, because of this, it can be used everywhere.
- Ability to copy at no extra cost.

In the course of use, a survey was conducted of students of the Tashkent State Transport University in order to determine their technical and psychological readiness to use mobile phones in the educational process. 60 4th year students took part in the survey. The survey showed that 92% of students have telephones, 80% of them have smartphones, 15% of students have laptops.

Students have some technical functions in the phone, such as: GPRS Internet access; 4G Internet access; WAP Internet access; Bluetooth; infrared port; playing MP3 files; Voice recorder; access to Java applications (games, e-books, etc.); camera

The technical equipment of students' mobile phones allows more than 70% of them to access the Internet, use e-books, dictionaries and reference books, and play audio files.

Students on their own use poorly the capabilities of mobile phones for learning, despite a high level of technical equipment. However, are they psychologically ready to use mobile phones in teaching? In order to answer this question, we asked students to answer the question:

"Would you like to be able to view all the necessary books and manuals to prepare for classes on your mobile screen?"

Analysis of the answers showed that 65% of students would like to be able to view all the necessary books and manuals to prepare for classes on a mobile phone screen, and 40% of students answered this question negatively, 30% consider it convenient, and 20% - inconvenient.

Thus, the majority of students are technically and psychologically ready to use mobile technologies in education. Some of them point to new opportunities offered by mobile learning, for example: “my phone is always at hand”, “I need to get information quickly”, “information can be found anywhere and at any time”, “books do not occupy places”, “interesting, convenient, fast”, “saves time”, “it will be convenient to study everywhere and always, under any conditions”, “very useful for exams, tests, tests”. Obviously, to use the new capabilities of mobile learning [9].

Thus, a blended form of training in different technological forms has significant advantages it can prepare future engineers for the need to constantly work on their own to improve their qualifications through the study of open information, online training, etc. However, unlocking the full potential of blended learning requires solving the problems; we have noted [10].

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