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Forming intellectual needs of technical university students using interactive technologies (on the example of studying the theme “Higher Education”)

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Abstract

The article examines forming intellectual needs of technical university students using the example of studying the theme “Higher Education” on the basis of materials taken from an English textbook for technical universities and higher institutions under the authorship of I.V. Orlovskaya; generalizes the concept of “need” for philosophical and psychological research; emphasizes that the information support of the system of didactic management of technical higher institutions is based on the principle of cognitive learning and is the basic component of modeling educational subsystem; emphasizes the relevance of the theme “Higher Education” in practical English classes with first-year students of technical higher institutions. Using popular scientific information in the educational process can make students’ cognitive activity, especially in the first two years, interesting and fascinating, develop and reinforce their intellectual needs, which are actualized in solving various problems. The following sources of popular scientific information can be distinguished: popular scientific literature; popular scientific television and video films; popular scientific television and radio programs; popular scientific exhibitions and expositions, INTERNET. Appeal to various sources of popular scientific information, under certain conditions, can affect the success of students’ intellectual activity, contributing to the formation

of all its components, including motivational ones. Successful solution of problems that require students' intellectual actions with information obtained from popular scientific sources can help to strengthen their belief in their own capabilities.

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Keywords

Need, technical higher institution, popular scientific literature, higher education, intelligence.

Introduction

Developing human civilization has led to the fact that the amount of scientific knowledge about the world around us has rapidly increased. In this situation, the importance of popular science information increases dramatically, and the problems solved with its use are multiplied and complicated. Now there is an acute issue of popularizing discoveries being made, since popular-scientific information is much faster than monographs and special articles introducing the latest ideas into the consciousness and practice.

Using popular-scientific information allows rebuilding the student's intellectual activity in accordance with the challenges of time, optimizing it. In the course of referring to various information sources of a popular-scientific character, the individual's intellectual abilities and needs are intensively formed.

The concept of "need" for philosophical and psychological research is defined as a reflection in the human psyche of the need for objects, conditions necessary for implementing its vital activity. People's needs manifest themselves in the form of human states, which are called "need states".

Specialists have the general position that needs are a source of activity. At the same time, many researchers believe that needs are not only the basis for the emergence of motives, but also they themselves perform a motivating function.

In understanding the intellect, the capacity for solving mental tasks is singled out as its essential feature. At the same time, in modern interpretations, solving mental tasks is linked to attracting necessary information.

Main part

All this necessitates the widespread introduction of popular scientific information into the educational process of modern higher education, which should help students to form the motivational and instrumental components of their intellectual activity [Nozdrina, 2005].

Intellectual needs, according to experts, are not primary, as they arise on the basis of other needs. At the same time, different authors, speaking of the essence of intellectual needs, proceed from a different understanding of intelligence, which is a form of human knowledge of reality.

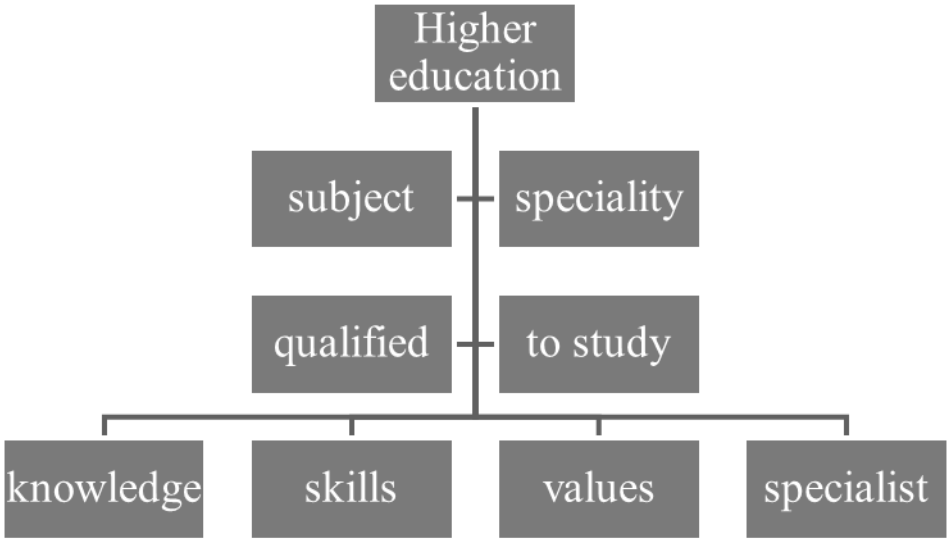
Information support of the didactic management system of higher educational institutions of a technical profile is based on the principle of cognitive learning and is the basic component of simulating educational subsystem. Studying the theme "Higher Education" in practical English classes with first-year students is relevant today. At the beginning of the lesson the students of the groups "Operating

transport-technological machines and complexes", "Materials science and materials technology" of Bryansk state technical University were invited to try to guess what the topic of the lesson would be among the offered variants:

1. It provides any country with highly-qualified specialists.
2. It can be received at the Universities, in the Institute and Academies.

The students offered the variant "Higher Education".

The next task was to add a mind mapping:



Further, a new lexical material was worked out, namely, new words were introduced on this theme, for example: to enable – давать возможность; to ensure – обеспечивать, гарантировать; to improve – улучшать, совершенствовать; means – средство, способ; further – дальнейший.

Then the students worked out reading reading and pronunciation of the most difficult words, such as, *important* [ɪm'pɔ:t(ə)nt], *thorough* ['θʌrə], *curricula* [kə'rikjulə], *require* [rɪ'kwaɪə], *major* ['meɪʤə] and international words: *qualification* ['kwɔlɪfɪ'keɪʃ(ə)n], *engineer* ['enʤɪ'nɪə], *method* ['meθəd], *bachelor* ['bæʧ(ə)lə].

Further, the students were asked to revise the following grammatical topics: "Word order in affirmative, interrogative and negative sentences", "the Indefinite tenses", "The Passive voice".

Then the students were given the task to read the text "Higher Education in Russia" for detailed reading [Orlovskaya, 2006].

Next, the experimenters were asked to answer questions based on this text: 1. Does higher education play an important part in any country? 2. Does higher education play an important part in your life? 3. What speciality do you get after graduating from the university?

For developing monological skills, special exercise was proposed to the students where they were to answer the questions about themselves: 1. How old are you now? 2. Where were you born? 3. What city did you come from? 4. Where did you go to school? 5. Why did you enter this institute? 6. What are your favourite subjects at the institute? 7. How do you usually spend your Saturday and Sunday? 8. What is your favourite sport? 9. What is your hobby? 10. How do you usually get to the institute? [Nozdrina, 2005].

Next, the students worked out the texts "Cambridge" and "Higher Education in the USA" for viewing reading [ibid.].

As the homework the students were asked to organize a discussion on the topic: "Higher education in different countries". For doing this they were to split into the following three teams:

I. Students from Russian universities.

II. Students from the UK.

III. Students from the United States of America.

To perform this task, it was necessary to make up questions to identify the features of higher education systems in our country, England and the USA.

This discussion aroused a great interest among the students. The approximate samples of questions proposed by the students are: 1. How many exams did you pass to enter the University? 2. Do you pay for your education? 3. What degree can a student get? 4. How many years do students study at the University to get a degree? 5. Do you have a practical training at various plants and enterprises?

For preparing the homework, the students used not only the knowledge gained during the lesson, but also, they collected necessary additional information for the discussion. Since the purpose of training is to develop the future specialist's competence, the student's readiness and ability for self-development, self-education and self-realization, as well as readiness for interpersonal communication, we consider it is necessary to seek and apply such tools and teaching methods that will direct the learning process to the problem field, where the process of obtaining knowledge in a joint activity of a tutor and students becomes natural.

Positive changes in forming intellectual needs for popular scientific information at the first-year students of the groups "Operating transport-technological machines and complexes", "Materials science and materials technologies" while studying the theme "Higher Education" confirm the validity and feasibility of the findings.

Conclusion

Thus, using popular scientific information in the educational process can make students' cognitive activity, especially in the first two years, interesting and fascinating, develop and reinforce their intellectual needs, which are actualized in solving various problems.

The following sources of popular scientific information can be distinguished: popular scientific literature; popular scientific television and video films; popular scientific television and radio programs; popular scientific exhibitions and expositions, INTERNET.

Appeal to various sources of popular scientific information, under certain conditions, can affect the success of students' intellectual activity, contributing to the formation of all its components, including motivational ones. Successful solution of problems that require students' intellectual actions with information obtained from popular scientific sources can help to strengthen their belief in their own capabilities.

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Формирование интеллектуальных потребностей студентов технических вузов с использованием интерактивных технологий (на примере изучения темы «Высшее образование»)

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Аннотация

Педагогическое исследование, описанное в данной научной статье, рассматривает вопросы формирования интеллектуальных потребностей у студентов технического вуза на примере изучения темы “Higher Education” на основе материалов учебника английского

языка для технических университетов и вузов под авторством И.В. Орловской. Данное исследование обобщает понятие «потребность» в философских и психологических исследованиях. Авторы научной статьи отдельно подчеркивают, что информационное обеспечение системы дидактического управления высшими учебными заведениями технического профиля опирается на принцип когнитивности. При этом оно является опорной составляющей для моделирования образовательной подсистемы. Авторы данной статьи отдельно акцентируют актуальность темы “Higher Education” на практических занятиях по английскому языку при работе со студентами первого курса технического вуза.

Для цитирования в научных исследованиях

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Ключевые слова

Потребность, технический вуз, научно-популярная литература, высшее образование, интеллект.

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