

INTRODUCING STEAM TECHNOLOGIES INTO THE RUSSIAN LANGUAGE EDUCATIONAL PROCESS

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Abstract

This article is devoted to pedagogical methods for the development of students' language competencies based on STEAM technologies in the study of the Russian language. The paper considers some ways of introducing humanitarian, natural and technical fields of science in the process of learning the Russian language.

Keywords: STEAM education, competence, Russian language, integration, technology, critical thinking and software.

Introduction

The development of highly organized thinking and training in the effective application of acquired knowledge in various fields is carried out through STEAM education.

Scientists have repeatedly noted the importance of STEAM education, which includes the natural sciences, technology, engineering, mathematics, and art. This is one of the most important trends in the 21st century. Modern employers prefer specialists who are well versed in these subject areas. This technology contributes to the integration of different areas, which allows the student to master individual subjects in their relationship as part of the implementation of complex educational projects.

One of the fundamental tasks of this direction is to increase the critical thinking skills of a person who can find answers to any questions experimentally, exploring and applying their abilities in practice.

The phased introduction of this model of education, which combines five disciplines together, allows us to turn to an interdisciplinary and applied approach at the same time. An innovative educational environment makes it possible to professionally prepare students for the advanced technically developed world. This is a kind of bridge that connects the educational process with the further professional growth of a person. For the first time, American students managed to combine theory and practice in a single educational process, who showed amazing results as a result of the experiment.

In the US, STEAM education is recognized by the National Research Council and the National Science Foundation (NSF) as the technological backbone of a developed society. The degree of training of the workforce in the field of STEAM is an indicator of the nation's ability to support its development [1].

So, this direction is gaining great popularity. In a number of countries, including Uzbekistan, programs based on STEAM have been developed, which were presented at educational festivals by various companies.

Despite the fact that scientists have recognized the importance of integrating the above areas of knowledge, language teachers have some difficulties in introducing STEAM into the learning process of students.

When working with Russian language students, unlike other groups, additional support is required to develop academic language skills.

It is necessary to promote language acquisition and learning through a variety of teaching methods, including the development of communicative competencies, academic discourse, support in the use of sentence frames, the increase in general academic and specific subject areas, and the development of vocabulary.

However, in each of the areas of STEAM learning there are concepts that we can adopt to deepen the structure of Russian language learning.

Science, engineering, and mathematics can be complex, so students need to understand not only complex academic language and vocabulary, but also all information content and processes. However, there are a few tricks that educators can use to help students improve their science, engineering, and math skills.

For example, you might invite students to find and read articles that combine topics from these areas. There are many useful websites that contain useful information for both teachers and students. Some of these online resources contain short articles written on a wide range of topics, including science, engineering, and math, that can be shared with students of all reading levels.

By studying articles on suggested topics, students can practice literacy skills, building up basic knowledge while developing comprehension skills.

Along with using text, teachers should focus on expanding vocabulary. This is one of the main ways to deepen students' knowledge of science and principles of science, engineering and mathematics. Here it is important to focus on common vocabulary, as well as domain-specific vocabulary. Of course, both types of vocabulary are crucial in expanding a student's vocabulary.

Vocabulary related to the subject area includes those words that relate to the content being studied. Consider a few examples of words - photosynthesis, flora, fauna. These terms are related to botany and do not apply to other subject areas.

In the emphasis on general academic vocabulary and vocabulary of the subject area, an indication is made of root words, prefixes and suffixes. This practice has a strong research base and trains students in word analysis and word families.

Since most of the vocabulary in these content areas has Latin roots, it is possible to teach students who speak other foreign languages, such as Spanish, Italian, French, etc., that the Latin roots in academic vocabulary words can give them clues to the words they are learning. They may know their own language.

Russian language learners need to understand the instructions given in the assignments. While there are many strategies to help make your instructions more understandable, a few simple ones include the use of visuals such as photographs, sketches, graphs, or videos.

In addition, preloading and pre-teaching key vocabulary and content concepts will also help equip students with the vocabulary they will need to gain a deeper understanding of the concepts and skills they are learning.

Integrating technology into teaching benefits language learners as well as students who are native speakers or fluent in a particular language. The integration of technology into education introduces students to the tools that are increasingly being used in the process of further work in any specialty.

However, there are some ideas on technology integration for Russian language students. Since we are talking about technology, it is worth turning to software. What support can websites, software and applications provide for students who do not yet have a command of the language?

One common support that teachers can turn on is the various translation services technology has to offer. Although translation can be a useful tool in the classroom, teachers should be careful in using it.

In other words, students should not strive to translate everything, but rather use translation software or applications and try other ways to determine the meaning of words or phrases. When reading, students should first try to determine the meaning of new words using context clues. Or, if the word is used by an educator, they can add a visual aid or share the meaning with the student as needed.

Ultimately, students should not just type everything into a program to have it translated for them, but should use these tools wisely when they cannot determine the meaning of words, phrases, or text in other ways.

In addition, students may not have equal access to technology. Some may have additional or more limited access to various devices at home.

It is important that teachers are aware of the various situations that occur in students' lives. There may be cultural differences in terms of technology use that should also be considered, including the number of electronic devices used and how they are used in school or at home.

When discussing STEM education, the integration of the arts is often overlooked. Although art itself is a subject area, it can be integrated into all areas of human activity. Art is an important part of a versatile person.

In addition, art is the cornerstone of civilization and culture. The inclusion of the arts in teaching is not frivolous; rather, it brings a different modality to learning. For language learners, adding art can also help reduce the language load on assignments. Through the integration of the arts, students can demonstrate learning, take notes, or otherwise absorb the information presented, while relying less on language. Art also helps students demonstrate concepts in non-linguistic ways. Nonlinguistic representations are used in various subject areas, including mathematics and the natural sciences.

Of course, many of the topics and strategies discussed here apply to every area of STEAM. However, hands-on activities, including conducting experiments in science, using an interactive whiteboard with students, creating objects and adjusting designs in engineering, creating collages in art, or using mathematical manipulation, all benefit not only language learners, but also fluent speakers.

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