



Formation of students' research thinking: the key goal of modern education

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ABSTRACT

This article explores the imperative role of fostering research-oriented thinking among students in contemporary education. Educators facilitate the development of student's analytical skills, creativity, and independent inquiry by adopting various pedagogical methods such as problem-based learning, research projects, engagement in scientific endeavors, cultivation of critical thinking, and technology integration. This paper underscores the significance of integrating these strategies to nurture a generation equipped to tackle the complexities of the modern world emphasizing active learning and interdisciplinary approaches.

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Talabalarning ilmiy tafakkurini shakllantirish: zamonaviy ta'limning asosiy maqsadi

ANNOTATSIYA

Kalit so'zlar:

ilmiy-tadqiqodchilik
tafakkuri, muammoga
yo'naltirilgan ta'lim,
tadqiqot loyihalari,
tanqidiy fikrlash,
ilmiy faoliyat,
pedagogik usullar,
faol o'rganish,
fanlararo yondashuvlar,
tahliliy ko'nikmalar,
texnologiya integratsiyasi.

Ushbu maqolada zamonaviy ta'limda talabalar o'rtasida ilmiy-tadqiqodchilik tafakkurini rivojlantirishning muhimligini ko'rib chiqiladi. Muammoli o'qitish, ilmiy loyihalar, ilmiy faoliyatga jalb qilish, tanqidiy fikrlashni rivojlantirish va texnologiyalarni joriy etish kabi turli xil pedagogik usullarni qo'llash orqali o'qituvchilar o'quvchilarning analitik qobiliyatlari, ijodkorligi va mustaqilligini rivojlantirishga hissa qo'shadilar. Faol ta'lim va fanlararo yondashuvlarga e'tibor qaratgan holda, ushbu maqola zamonaviy dunyoning murakkabliklarini engishga qodir avlodni tarbiyalash uchun

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ushbu strategiyalarni birlashtirish muhimligini ta'kidlaydi.

Формирование исследовательского мышления учащихся: ключевая цель современного образования

АННОТАЦИЯ

Ключевые слова:

исследовательское мышление, проблемно-ориентированное обучение, исследовательские проекты, критическое мышление, научные усилия, педагогические методы, активное обучение, междисциплинарные подходы, аналитические навыки, интеграция технологий

В данной статье исследуется значимая роль развития исследовательского мышления у студентов в современной образовательной среде. Авторы рассматривают применение разнообразных педагогических методов, включая проблемное обучение, исследовательские проекты, вовлечение в научную деятельность, а также развитие критического мышления и использование современных технологий. Особое внимание уделяется формированию аналитических способностей, креативности и самостоятельности учащихся. В статье подчеркивается важность активного обучения и междисциплинарных подходов для подготовки студентов к успешной адаптации к сложностям современного мира.

The formation of research thinking among students is an important task of pedagogy, especially in the context of modern education, where the emphasis is shifting from knowledge transfer to the development of independent research and critical thinking skills.

These pedagogical methods can be successfully applied to develop students' research thinking and prepare them for an active role in modern society and the professional sphere. Here are some pedagogical possibilities to achieve this goal:

- Problem-oriented learning
- Research projects
- Problem tasks and cases
- Technology use
- Research activities
- Formation of critical thinking
- Support and Motivation

Creating learning situations that require students to analyze problems, look for solutions, and formulate their research questions. This allows students to develop critical thinking skills and independent information retrieval.

Students conduct small research projects on topics of interest to them. These can be either individual projects or group studies. Projects must be open enough to encourage creativity in problem-solving.

Using real or model problem situations from professional practice for training. Solving such problems requires analysis, research, and decision-making based on preliminary data.

Integration of modern information technologies such as Internet resources, databases, computer programs for data analysis, etc. This helps students to explore the topic and work with information more effectively.

Providing students with the opportunity to participate in scientific research projects under the guidance of experienced scientific supervisors. This may include participating in conferences, publishing articles, etc.

Teaching students to analyze and evaluate information, identify false information, and argue their conclusions.

It is important to create a supportive and motivating environment where students feel confident in their research efforts and can receive feedback from teachers and peers.

In a modern world saturated with information and constantly changing challenges, it is important that education is not limited to the simple assimilation of facts, but stimulates the development of critical thinking, a creative approach to problem-solving, and the ability to research. In this article, we will look at what methods and approaches are used to form students' research thinking.

One of the key approaches to the formation of research thinking is problem-oriented learning. As part of this method, students are offered real or model problems that they must analyze, look for solutions, and develop strategies to solve them. Such tasks require the active participation of students, stimulating their critical thinking and independent research.

Conducting small research projects by students is an effective way to develop their research skills. These can be either individual projects or group studies. The projects must be open enough to stimulate creativity in solving problems and exploring new directions.

Students' participation in research activities plays an important role in the formation of their research skills. Providing the opportunity to participate in scientific projects under the guidance of experienced scientific supervisors allows students to immerse themselves in the research process and gain practical experience in the scientific field.

One of the key aspects of the formation of students' research thinking is the development of their critical thinking. This includes analyzing and evaluating information, identifying false information, and developing the ability to argue one's conclusions based on evidence.

The integration of modern information technologies into the educational process also plays an important role in shaping students' research thinking. The use of Internet resources, databases, computer programs for data analysis and other technologies helps students to explore the topic and work with information more effectively.

The importance of Problem-oriented learning or VET- VET stands for Vocational Education and Training, which is a form of education that focuses on providing practical skills and knowledge required for specific occupations or industries. VET programs often involve hands-on training, apprenticeships, and work placements to prepare students for employment in their chosen field.

Problem-oriented learning, on the other hand, is an educational approach that centers around solving real-world problems or scenarios. Instead of simply memorizing facts or theories, students engage in activities or projects that require them to apply their knowledge to address practical challenges. This approach promotes critical thinking, problem-solving skills, and the ability to transfer learning to new situations.

In the context of vocational education, problem-oriented learning could involve tasks or projects relevant to the specific industry or occupation being studied. For

example, students in a VET program for automotive mechanics might work on diagnosing and fixing various car problems, while those in a hospitality program might develop solutions for improving customer service in a hotel setting.

VET is based on the principle of active learning, where students are actively involved in solving real or model problem situations. It encourages students to independently search for information, analyze data, and develop solutions. The problems proposed in the framework of VET are usually ambiguous and open to interpretation, which contributes to the development of creative thinking.

How to develop students' skills in research individual projects? Research projects provide students with the opportunity to immerse themselves in an in-depth study of a specific problem or topic. These projects can be interdisciplinary and may include data collection and analysis, conducting experiments, as well as writing reports and presentations. Participation in such projects helps students develop critical thinking, research analysis, and communication skills.

Students' participation in research activities may include working on projects in laboratories, participating in scientific conferences, publishing scientific articles, and receiving research grants. This allows students not only to acquire practical skills in their field but also to start building their scientific career at the learning stage.

The formation of critical thinking includes not only the analysis of information but also the ability to critically evaluate and argue. This includes the ability to distinguish facts from opinions, evaluate the reliability of information sources, and build arguments based on logical reasoning and evidence.

Modern technologies play an important role in the development of students' research skills. This includes not only access to information resources via the Internet but also the use of specialized software tools for data analysis, process modeling, and visualization of research results.

CONCLUSION

The formation of research thinking among students is an important task of modern education. The use of various methods and approaches, such as problem-oriented learning, research projects, research activities, the development of critical thinking, and the use of modern technologies, allows students to effectively develop research skills and prepare them for an active role in modern society and the professional sphere.

The integration of these approaches into the educational process contributes not only to the formation of research thinking among students but also to the training of personnel capable of effectively solving complex problems of the modern world and contributing to scientific and professional progress.

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