ORIGINAL ARTICLE

INTERNATIONAL JOURNAL OF ARTIFICIAL INTELLIGENCE

ISSN: 2692-515-x, Impact Factor: 9.23

American Academic publishers, volume 6, issue 01,2026

Journal: https://www.academicpublishers.org/journals/index.php/ijai

ORGANIZATION OF TECHNOLOGY TRAINING MODERN APPROACHES

Ziyamova Gulbakhor Tulabayevna
Namangan State Pedagogical Institute, Intellectual science and information, a teacher of the Department of Exact Sciences.
ziyamovag@gmail.com Tel: +998950782582

Abstract

The article shows the role of pedagogical technology in modern education, the importance of improving metacognitive activities in developing analytical and creative thinking of secondary school students. The development of metacognitive skills allows students to increase their knowledge, as well as choose learning strategies and use them effectively in changing conditions, and helps to create new ideas. Recommendations are also given for improving metacognitive activities.

Keywords

technology metacognitive activity, metacognition, exercises, innovation, topic, materials, modern economy, science, culture, technology, activity, metacognitive knowledge, metacognitive control, self-assessment, reflective practices.

Introduction

The role of technology in today's education.

21st century education is being shaped in accordance with the needs of a changing society. Improving the quality of education, developing students' independent thinking, creativity and practical skills is a requirement of tod. Currently, the main approaches and methods of teaching technology are based on various pedagogical theories and practices. These approaches are aimed at ensuring that students acquire knowledge more deeply and effectively, while taking into account their different learning styles. The main methods of teaching technology include: traditional lessons, interactive methods, problem-based learning, practical laboratory experiments and computer-based learning. Each method has its own characteristics and educational effectiveness, and their use helps to increase the level of student understanding. In this regard, technology taught in secondary schools also requires the use of modern pedagogical and methodological approaches, abandoning traditional approaches. This subject serves to consolidate not only theoretical knowledge, but also practical life skills, and forms technical thinking and creative activity skills in students.

Metacognitive knowledge plays an important role in pedagogy. It helps students to independently manage their learning activities. By identifying their strengths and weaknesses, students can choose learning styles that suit them and use the necessary resources to make their learning more effective. Students can use a variety of pedagogical strategies to develop metacognitive knowledge. For example, encouraging students to plan their learning, monitor their own activities, and self-evaluate can strengthen their metacognitive skills. Also, teaching students to analyze their thoughts and be prepared to criticize their own work when performing specific tasks can further develop metacognitive knowledge. Metacognitive knowledge plays an important role in developing students' ability to understand their own knowledge and effectively manage their learning activities. The development of this type of knowledge helps students become more independent and self-developing learners, which improves the quality of their overall education. Building on John Flavell's ideas, the ideas that metacognitive knowledge has an important role in pedagogy and helps students independently manage their

ISSN: 2692-515-x, Impact Factor: 9.23
American Academic publishers, volume 6, issue 01,2026
Journal: https://www.academicpublishers.org/journals/index.php/ijai

learning activities were put forward by John Flavell. He introduced the concept of metacognition in his research and conducted in-depth research in this area.

This activity also prepares students to apply their knowledge in practice in the future. Metacognitive skills help students solve complex problems independently, as they acquire the ability to analyze and coordinate their learning activities. Critical thinking skills encourage students to actively participate in solving new and complex problems. These skills teach students to express their thoughts independently and defend their views in a well-founded way. Critical thinking allows students to expand their knowledge and deepen their understanding. This activity teaches students to evaluate different opinions and ideas and to be willing to change their minds when necessary. Critical thinking skills also teach students to effectively apply their knowledge to different situations they encounter in life.

Thus, metacognitive strategies are important in improving the quality of teaching. They help students to understand their own knowledge more deeply and independently, and also develop the ability to effectively manage their own knowledge. These strategies enrich the educational process and make students more independent and effective learners. Metacognitive strategies are important in the educational process of students. These strategies not only help students to increase their knowledge level, but also develop their self-understanding and coordination skills. This activity allows students to criticize their own knowledge and learning methods, they can identify their strengths and weaknesses and improve their learning strategies on this basis. Metacognitive strategies also help students learn how to apply their knowledge and adapt to new situations, which helps improve their self-regulation skills. As a result, these activities enrich the learning experience and make students more independent and effective learners. Students are able to understand their knowledge more deeply and independently, which improves the quality of their overall learning.

Traditional lectures are a widely used method for teaching technology. This method is mainly implemented through a teacher-led presentation, in which the teacher explains the main concepts and theories and then tries to reinforce the topic through problem solving. Traditional lectures allow students to quickly and effectively convey theoretical knowledge, but this approach also has its own limitations. Modern pedagogical approaches and methods.

I. Interactive methods.

Interactive teaching methods are widely used in modern teaching. These methods ensure the active participation of students in the teaching process and direct them (STEAM) approach provides interdisciplinary integration and allows for the to independent learning. In lessons, methods such as “brainstorming”, “cluster”, “problematic questions” encourage learning through collaborative and coherent thinking instead of passive work with the text.

I.1. Project-based learning. The project approach is a very effective method in technology. Students choose a project aimed at solving real-life problems, plan it step by step, independently select materials and carry out work. This process develops responsibility, initiative and creative thinking.

I.2. Problem-based learning. In this approach, the teacher does not provide ready-made answers, but teaches students the process of solving a problem. As a result, the student independ ently searches, conducts experiments, and deeply understands knowledge.

I.3. STEAM integration. The Science Technology, Engineering, Art and Maths comprehensive application of knowledge from several disciplines. For example, measurement

ORIGINAL ARTICLE
INTERNATIONAL JOURNAL OF ARTIFICIAL INTELLIGENCE
ISSN: 2692-515-x, Impact Factor: 9.23
American Academic publishers, volume 6, issue 01,2026
Journal: https://www.academicpublishers.org/journals/index.php/ijai

and calculation require knowledge from mathematics, and the selection of materials requires knowledge from technology.

II. Digital pedagogical technologies. Multimedia presentations, interactive whiteboards, online platforms and software tools provide visual and interactive organization of the lesson process. These tools attract students' attention, facilitate understanding of the topic being studied, and support independent research.

III. Organizing practical exercises.

III.1. Planning and safety. Practical exercises should have a clear goal, the necessary tools should be prepared in advance, and safety rules should be explained in advance.

III.2. Working from the beginning to the complex. Starting with simple tasks in forms appropriate to the age of the students and then moving on to complex projects increases efficiency.

IV. Evaluation and analysis. At the end of practical training, the results are analyzed, the work of students is evaluated, and errors are corrected by correcting them. This process develops critical thinking in students. V. Scientific foundations of methodology. The methodology of teaching technology is based on the rules of didactics. The scientific, systematic, consistent, demonstrative nature of education and its connection with practice are the main principles for technology. The age characteristics, interests and level of preparation of students are also important factors in choosing methods..

Conclusions and recommendations

In order to effectively organize technology lessons in today's educational process, it is important for educators to widely use interactive methods, develop students' independent research skills, introduce project-based learning and STEAM approaches, and use digital pedagogical tools in the classroom.

Lessons organized in this way not only strengthen technological knowledge, but also develop students' creative thinking, problem-solving, and teamw

List of used literature

1. Abdullaev S. X. O‘qituvchilarning ergonomik madaniyatini rivojlantirish muhitini tashkil etish tizimi va texnologiyasi //Sovremennoe obrazovanie
2. (Uzbekistan). – 2021. – №. 9 (1)
3. Xudoyqulov SH.S. Ziyamova G.T. O’sarova. O I. TEXNOLOGIYA MASHG’ULOTLARIDA “STACK-N-WHACK TEXNIKA” SIDAN FOYDALANISH “Ta’lim va taraqqiyot”.Ilmiy-uslubiy jurnal.2025-yil.1-son
4. Abdullayev S.X. Ergonomik yondashuv asosida bo’lajak texnologik ta’lim o’qituvchisi ergonomik kompetentligini takomillashtirish metodikasi //Namangan
5. davlat universiteti Ilmiy axborotnomasi. – 2023. – №. 6. – С. 842-8
6. O’rinboyev M.I. Umumiy o’rta ta’lim maktablarida fizika fanini o’qitishda o’quvchilarning metakognitiv faoliyatlarini takomillashtirish. Pedagogika fanlari

ISSN: 2692-515-x, Impact Factor: 9.23
American Academic publishers, volume 6, issue 01,2026
Journal: https://www.academicpublishers.org/journals/index.php/ijai

bo'yicha falsafa doktori(PhD)Ilmiy darajasini olish uchun tayyorlagan Dissertatsiya. Namangan-2025

7. Qo'ysinov, Muslimov N, Mamatov D, Toxirov O', Bozorov U, Nasurullayeva F. Texnologiya. 1 qism. Umumiy o'rta ta'lim maktablarining 5-sinf uchun darslik. Toshkent: "Novda Edutainment", 2024 y 128bet. (Qo'syinov, Muslimov N., Mamatov D., Toxirov O., Bozorov U., Nasurullayeva F. Technology. Part 1. Textbook for 5th Grade Students of General Secondary Education Schools. Tashkent: "Novda Edutainment," 2024, p. 128.)
8. Nosirov Nodirbek Valijonovich.Bo'lajak texnologik ta'lim o'qituvchilarining metodik kompotentligini takomillashtirish. Pedagogika fanlari bo'yicha falsafa doktori(PhD)Ilmiy darajasini olish uchun tayyorlagan Dissertatsiya avtoreferati. Farg'ona-2025
9. Mo'minova, M. (2025). Modern Professional Competencies of a Teacher: Analysis and Practical Recommendations. Scientific-theoretical Journal of International Education Research, 3(3), 4–8. https://doi.org/10.5281/zenodo.16227089
10. Ziyamova G.T. AMALIY MASHG'ULOTLAR JARAYONIDA METAKOGNITIV FAOLIYAT TURLARINI TAKOMILLASHTIRISH. Ta'limning zamonaviy transformatsiyasi Ilmiy-uslubiy jurnal.
11. Ziyamova G.T. THE THEORETICAL FOUNDATIONS OF DEVELOPING STUDENTS' METACOGNITIVE ACTIVITIES IN TEACHING TECHNOLOGYINGENERAL EDUCATION SCHOOLS.
12. International journal of artificial intelligence. 2025. ISSN: **2692-515X.**