European International Journal of Pedagogics

TYPE Original Research
PAGE NO. 46-49
DOI 10.55640/eijp-05-07-11

Based on Students' Technical Creativity: Educational Technology, Competence, And Development of Intellectual, Pedagogical, And Psychological Features

Yarlakabov Umirzok Mamatkulovich

Ph.D, professor, "Fundamental and social sciences and humanities", Sambhram University, Uzbekistan

OPEN ACCESS

SUBMITED 20 May 2025
ACCEPTED 16 June 2025
PUBLISHED 18 July 2025
VOLUME Vol.05 Issue07 2025

Abstract: This article analyzes the intellectual content of educational technologies in the process of rolan modern high rise and development of pedagogical and psychological aspects of creativity by students of technical competency in the format technical directions. It is also the mechanisms that direct your students to the highway through independent thinking technologies to innovate are illuminated. The result of the accord study, are an important factor in the effective development of the means of increasing technical competency of intellectual creativity.

Keywords: Education technology, intellectual, technical creativity, competence, innovative, problem-Education, independent thinking, creative approach to develop technological skills.

Introduction: Modern education system in the preparation of technical experts in the direction of not only theoretical knowledge, but also plays an important role for the development of technical creativity competence. Thus, the intellectual education technologies, in particular artificial intelligence, the platform of distance learning, adaptive learning systems, the problematic of teaching methods of students through independent thinking, creative

approach and practice-oriented work skills. In this article, the technical education intellectual creativity of using technology and the new year competence the form of pedagogical and psychological basis are considered [1,2].

Technical creativity of competence - in this modern society of innovative development is an important component, create new techniques and technologies existing products through innovative approaches and effective solution to the problems the ability to produce meaning. In the xxi century, technology is developing with a fast pace of technical creativity in conditions of competence not only in the field of scientific research but also industry, education and also in other sectors of the economy is of great importance [3].

Technical creativity of students in the education system competence to increase the theoretical knowledge they not only directing, but also the development of practical skills, independent thinking and problem solving to introduce pedagogical approaches directed to the motivation it gives. However, traditional teaching minds often the student's full of creative potential because it does not allow you to open and ready to accept the knowledge they directed you to remember more information. Therefore, in the process of education technical creativity of competencepossessing the improvement of methods for system development, innovative pedagogical technologies and modern approaches, there is a need to introduce. Modern industry and technology requirements for students with the knowledge and skills to adapt to this process, including them in the development of effective organization, as well as independent and creative should be directed to stimulate the activity [4,5].

METHODOLOGY

Technical education and pedagogical technologies based on the formation of intellectual creativity competence today's pressing one of the topics in psychological research. Uzbekistan and the works of foreign scientists in this direction, theoretical and practical approach on the basis of different approaches to this issue. Below is the main theme within the framework of the analysis of the selected literature [6].

The basis of Technical creativity" in the game, the technical content of the concept of creativity, the formation stage, as well as the technical methods provides comprehensive information about the development of thought. Students kompetensiya the formation of problematic situations in creative, technical design, as is the role of constructive thinking element analysis. Practical approach the game to be rich, methodical instructions that can be used in the preparation of the direction of technical experts is rich [7].

A handbook of "modern educational technologies" mazkur works of modern pedagogical technologies, especially digital technology and intellectual organization dedicated to the development of the educational process on the basis of the effective. Educational independent thinking, creative approach to particular aspects, such as personalized education are noted. Intellectual active in student activities and a student's personal education technology education on the basis of deep analysis of options instead put forward the idea to launch it.

In addition, scientists from Uzbek Sh.S.Ziyodov, and d. A. Djurayev modern educational methods in the work of creating an environment of intellectual xudoyberganov lit.

Yu.V.Gromyko "Intellectual technologies and education project activity" itworks without intellectual technologies and project activities of students in the mutual link shbu lit. The author artificial intelligence, digital media, interactive teaching system provides many rendered on the location of the technical development of creativity. Psychological approaches students to consider personal characteristics, motivation possessing made a deeper analysis of aspects like support. This work is to integrate theoretical principles and practice of deepening an important source.

This source confirmed the positive effects of technology on the basis of technical education intellectual creativity.

Technical creativity in the development of methods represented. In the process of education are traditional methods – for example, lectures and practical sessions – helps to strengthen the basics of knowledge of students, but does not create enough opportunity to fully open their creative potential. In this regard, methodological technique in order to increase the effectiveness of many innovative approaches to apply. In particular, projector learning based on students ' real directs to address problems: for example, the mechanical structures in the lesson or small the project they will work on robotic mechanism independently.

RESULT AND DISCUSSION

Problems and tasks oriented education to students from pre-clearly defined theoretical and practical knowledge necessary to find solutions to issues encourages adopters – for example, energy efficiency calculations on the task of. Also, cooperative (group) to read the readers are quick communication, to make collective

decisions and the role of distribution teaches; for example, one of the group members is there any ready appreciation of the graph, and gives advice on the selection of the material.

Design thinking (design thinking), while the methodology problem identification, idea development, and test prototiplash systematic creativity of students through the gradual implementation of the phase routes – for example, training device, or a new type of modular furniture design develop.

Interactive methods (brainstorming, case-study, are simulyasiya) which activates creative thinking, the students are the real or virtual allows you to find the solution through analysis of cases; for example, the industrial process is used for modeling of computer simulyasiya. Finally, the use of modern technology – in particular, 3d modeling, virtual reality and digital platforms (AutoCAD, like a unit or Tinkercad) – complex administrative structures vizualizatsiya to the prototype in a virtual environment test, and the opportunity to provide remote interaction creates. Technical creativity of students of these methods together with them to real world problems and significantly increases the level prepares.

Competence the development process the role of teachers in technical creativity. The creativity not only in the process of development of pedagogical and technical knowledge of the giver, but also for referral and will also play an important role as a motivator. The real lessons of the problem – Lessons real problems – for example, mechanical transmissiya to develop or increase the effectiveness of a prototype of modular furniture – on the project in the form of organized, independent analysis of students to seek creative solutions and skills will increase. For example, in the lesson the teacher school home of robotics and automatic waste separation in the environment to create a mechanism donating, directs students to work according to the principles of design.

In laboratory simulation and virtual training – for example, SolidWorks or AutoCAD 3d printer, which is published by the part of the design or unit in a platform on the modeling of the engineering process – introduces students with practical exercises. Mentorlik session every creative individual on the project in a meeting, for example, optimallashtirilgan geometry of the graph on students combined in the analysis, recommendations for improvement provides. Interactive training, for example, brainstorming session “Energy saving device, creating the concept of the” theme 50 ideas in 20 minutes or collecting case-study product design industry training solution in the case of the analysis of the problem through a discussion of the option of cooperation and will strengthen the team's ability to make quick decisions.

The structure of the curriculum as well as personal teachers, focusing students initial and behavioral skills looking mekatronika, microelectronics or architecture modeling provides you with special functions.

In the form of regular constructive feedback – for example, every month, which are held “Innovative project” at the price of students achievements, consider an individual whoat ua o‘sish plan defines methods to open the full creative potential of each student while stimulating serves. Industry representatives and experts, which attract their master-the class representatives (for example, the automobile from the enterprise to the guest-master, offer to teach the secrets of modern transmissiya) and startap-oriented approaches to incubators (students of the project, financial and legal support) technical thinking and practical skills students will strengthen those in.

The concept of intellectual technology education. Intellectual education technology – this is the automation of the educational process, differensiallashtirish the person that serves to improve the referral and digital tools and methods are based on analytical thinking. They include the following:

- Artificial intelligence-based o‘educational platforms (for example, ChatGPT, Khan Academy, AI);

- Flexible (adaptive) o‘educational programs;

- Distance learning systems;

- Interactive laboratories;

- Based on vr technology and 3D design tools.

Competence the composition of technical creativity. Technical creativity to competence muammoni analysis and technical solutions to offer, innovatsion thinking, texnologik meansthe use of skills from the world, jamoaviy in the project to participate in yand the aspiration to create a creative approach angi and other competencecontent can keltishimiz.

Pedagogical aspects. The intellectual and technical education technologies enable students to stimulate creativity through the following important pedagogical approach:

- Training problem (problem based learning);

- Project activities;

- Gamifikatsiya and simulation;

- Differential and individual approach;

- Automatic feedback and assessment systems.

Competence the development of technical creativityfrom the psychological factors following h

motivasiyaning be at a high level, intellektual independence, stressga endurancelilik, kognitiv active, and the attention of management the ability to o‘z-assessment and self refleksiya with is important.

Intellectual experience of students in the technical direction of a group as educational tools (for example, Arduino, Tinkercad, Labster) was conducted on the basis of the lessons. The result, while talaba new technical ideas put forward has mustaqil project has a lot of work, ithinking jo test results increased by 27%, o‘readers back to the self-assessment level is high.

CONCLUSION

Intellectual creativity of modern technologies in the education system of technical education plays an important role in the formation of competence. This technology of students independent thinking, creative approach serves to develop the ability to analyze situations and problematic. Through a combination of pedagogical and psychological approaches can be effective competence this form.

REFERENCES

Давыдов В.В. Проблемы развивающего обучения. — М.: Педагогика, 1986.

Выготский Л.С. Мышление и речь. — М.: Айрис-пресс, 2005.

Хуторской А.В. Компетентностный подход в образовании. — М.: ИНИОН, 2003.

Фатхутдинов Р.А. Инновационный менеджмент. — М.: Питер, 2019.

Ziyodov Sh.S. “Intellektual o‘quv muhiti va uning shakllantirish texnologiyalari” // O‘zbekiston pedagogika jurnali, 2022.

Xudoyberganov D. “Yangi pedagogik texnologiyalar” // Toshkent: TDPU nashriyoti, 2021.

Oblomiy O. va boshqalar. “Zamonaviy o‘quv texnologiyalari” // Oliy ta’lim, 2023.

Mayer R.E. “Multimedia Learning” – Cambridge University Press, 2009.

Jonassen D.H. “Learning to Solve Problems with Technology” – Pearson, 2015.

O‘zbekiston Respublikasi Ta’lim to‘g‘risidagi qonuni, 2020-yil.