Original Article

INNOVATIVE TECHNOLOGIES IN TEACHING STUDENTS OF TECHNICAL HIGHER EDUCATION

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Abstract

The article analyzes the development of students' direct imaginative thinking, the formation of their initial knowledge and creative skills, as well as the possibility that students can theoretically analyze what they are studying and create a new theory using the Keys-stadi method in teaching general sciences.

Keywords: abilities, case, knowledge, skills, analysis, transmission, mechanism, method, technology.

INTRODUCTION

Today in the world, increasing the competitiveness of graduates on the basis of a competent approach to education, creating modern methodological support for designing creative educational processes through the development of creative competence of pedagogues, developing creative abilities of students directed to the fields of professional activity, as well as increasing the social role of higher education in the process of ensuring the quality of education are one of the urgent directions. is being researched. From this point of view, it is important to internationalize and modernize the content of modern professional education on the basis of advanced foreign experiences, to create an innovative educational environment based on competences, and to further improve the pedagogical mechanisms of developing students' creativity based on the wide application of interactive teaching methods and technologies.

It is important to train students to think and observe in an innovative educational environment. Having the ability to think critically, creatively, and creatively about the topic being studied, the problem being solved, is especially important in the conditions where there is a strong competitive environment in all fields. For this reason, today in educational institutions it is required to accustom students to comprehensive analytical study of the problem. The "Case-study" method has a special place in meeting this demand. "Case-study" ("case" - method, "study" - problematic situation) when translated from English means situational analysis or analysis of problem situations. This method serves to form students' skills to find the most optimal options by analyzing a specific, real or artificially created problem situation. It teaches students to directly study and analyze any meaningful situation. In the education of foreign countries, cases have been used effectively for almost 150 years [1].

A classification (typology) of cases was created during the past period. In this typology, cases are divided into certain types according to the following signs: according to the source, according to the presence of the plot, according to the periodic consistency of the situation statement, according to the object of the case, according to the method of presenting the material, according to the size, according to the structural specificity, according to the method of presenting the educational task, according to the didactic purpose according to the method of registration. During the research period, the type of cases was selected based on the nature of the educational materials. In the classification of cases, it is indicated that the method of presentation of the educational task is questionable and task-based. Accordingly, the cases brought to the students' attention can be questions or assignments. If the case is a question-case, then several questions are presented regarding the analysis and solution of the problem or problematic situation. If the case is a task-case, then the tasks that need to be performed in the process of solving the case are given [1].

In order to determine the students' professional knowledge and their ability to apply it in practice, questions and task cases were used. Case assignments: description of the case; case questions (or assignments); given based on the structural structure of the teacher's answer. Here it is necessary to clarify: when working with case assignments, the teacher's answer is necessary, because based on it, students can identify their mistakes and shortcomings. The teacher's response to the case assignments is provided after the students complete the assignment and the discussion ends [2].

Recently, the "Case-study" method is becoming more and more popular in education. A case study teaches students to study and analyze any meaningful situation. The following types of educational cases are used in modern teaching practice:

- cases focused on problem solving and decision analysis;

- cases representing a decision or a complete problem;

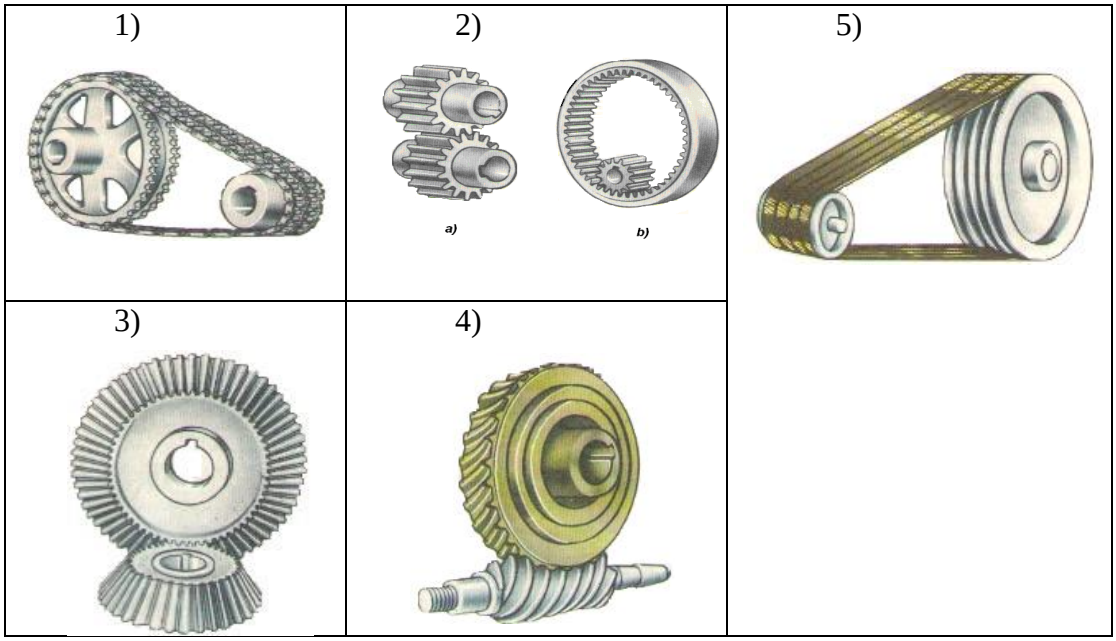
- cases that provide an opportunity to analyze and evaluate the activities of learners.

Here are examples of cases that provide an opportunity to analyze and evaluate the activities of learners:

Case 1. Case report. We will introduce the subject of "Gear transmissions" from the discipline "Machine details" which is included in the pursuit of general professional subjects.

The teacher explains the general information about gears to the students. Introduces types of gears. It explains the types, advantages and disadvantages of gears according to the location of the axes, according to the engagement of the teeth and according to the shape of the teeth. Before introducing the concept of gears, we will give its definition: a gear is a mechanism that serves to transfer movement from one shaft to another through rotational movements and changes the frequency of rotation with the help of a gear wheel. The gear wheel located on the transmission part of the rotating shaft is called the leader, and the receiver of rotation is called the driven.

Case assignment. Determine which of the following gears corresponds to the picture:



Worksheet for the case assignment:

Cylindrical transmission	Bevel gear	Worm gear	Chain drive	Belt drive
2	3	4	1	5

Through case report-1, students will differentiate between types of transmissions and get an idea about transmissions.

Through the next Case Statement, the student will study and analyze the transmission process, advantages and disadvantages, as well as performance.

Case 2. Case report. Belt drive. In the carpentry workshop, a disc saw is used for sawing boards and slicing wood. The belt drive transmits the rotations of the electric motor to the disc. The device works in this order. The performance of the device has decreased significantly in recent days. The carpenter changed the circular saw, but the productivity did not increase. The master was confused, not knowing what was the reason for this. So, how do you think the performance of the device can be restored to its previous state?

Case resolution process:

Students understand the essence of the case by familiarizing with it two or three times, discussing it with their partner and group mates.

Discussing with a partner and group mates, the student determines the factors that serve to find a solution to the problem.

The student selects the factor most likely to contribute to the problem among the identified factors.

The student explains the solution based on the extracted factor.

The solution is discussed individually, with the participation of small groups.

Case solution. One of the factors that cause a decrease in the performance of a circular saw is the decrease in the number of revolutions of the disk. The reason for this should be found in the belt drive. In belt transmissions, the number of transmissions is not constant, especially when the load increases or when the friction force between the belt and the pulley decreases, the belt slips. A pulley belt is usually used to rotate the saw blade. It is known that the side surface of these belts is corroded as a result of a lot of work. As a result, the inner surface of the belt becomes the working surface and rotates the disc. In this case, the force of friction is significantly reduced, therefore, the number of revolutions of the saw decreases and, in turn, the productivity decreases.

So we need to use a tensioner to increase the friction force between the belt and the pulley. In this case, the efficiency of the saw increases, in which case it is necessary to replace the belt with a new one. In this way, the efficiency of the saw is restored.

With the help of "case-study" students will acquire the following skills and qualifications:

1. Analytical skills (distinguishing information from information, categorizing them, dividing information into necessary and necessary, analyzing, presenting; for this, a person must be able to think clearly and logically).

2. Practical skills (based on the complexity of the problem, being able to analyze the real situation, being able to apply the most important theory, methods and principles).

3. Creative skills (it is not important to solve the situation (problem) based on logic, but to find several solutions to the problem based on a creative approach and analyze them).

4. Communication skills (according to it, the student should be able to master the skills of arguing, defending his point of view, convincing others of his decision, preparing a very short and convincing report).

5. Social skills (in the process of discussing the decision, students should be able to analyze the behavior of others, be able to listen to others, support other people's opinions in a debate, be able to express an opposite opinion to the proposed opinion, and be able to control oneself).

6. Self-analysis (it is important to be able to control oneself during the debate process, to be an example to others).

Every teacher should be able to achieve a thorough justification of the teaching tasks based on the case-study [3].

With the help of "case-study" students achieve a clear expression of tasks related to the topic, students develop their analytical thinking, can organize a debate and make a decision regarding the solution of the topic.

The important characteristic features of educational cases are the presentation of a list of literature to the attention of the students in order to solve the problem situation, providing them with methodical instructions, guidelines and, of course, the teacher's presentation of his own option for the solution of the problem.

REFERENCES

1. Usmonboyeva M., Aripova M., Mo'minova D. Ta'lim jarayonida interfaol metodlardan foydalanish. – T.: "Lesson Pres" nashriyoti, 2019. – 73-b. 2 Ўша манба. – 78-б.
2. Kiramidinovna, I. D. (2021). IMPROVING THE MECHANISM OF FORMATION OF STUDENTS'CREATIVE ABILITIES.
3. Тўраев Б.З., Case-study технологиясини кўллаш асосида бўлажак мутахассис кадрлар касбий компетентлигини баҳолашнинг интерфаол усули. – Т.Замонавий таълим.2015 й.
4. Rukhiddinovna, N. Y., Dadamirzaevich, I. D., Usubjanova, D. M., & Kiramidinovna, I. D. (2020). METHODOLOGY OF THE FORMATION OF GENERAL VOCATIONAL TRAINING IN STUDENTS OF HIGHER EDUCATIONAL INSTITUTIONS ON THE BASIS OF COMPETENCY APPROACH. PalArch's Journal of Archaeology of Egypt/Egyptology, 17(6), 3663-367
5. Kiramidinovna, I. D. (2021). IMPROVING THE MECHANISM OF FORMATION OF STUDENTS'CREATIVE ABILITIES.
6. Odiljanovich, S. A. ENHANCING THE SPATIAL IMAGINATION OF HIGHER EDUCATION STUDENTS THROUGH COMPUTER SIMULATIONS IN PERFORMING GEOMETRIC PROBLEMS.
7. Абдувахобов, Д. А., Имомов, М. Х., Исматуллаев, К. К., & Акбаралиев, Х. Х. (2021). ОПРЕДЕЛЕНИЕ ПОЛНОТЫ РЫХЛЕНИЯ ПОЧВЫ ЗУБЬЯМИ ЗУБОВОЙ БОРОНЫ, КОПИРУЮЩЕЙ РЕЛЬЕФ ПОЛЯ. ИННОВАЦИОННЫЕ МЕХАНИЗМЫ И СТРАТЕГИЧЕСКИЕ ПРИОРИТЕТЫ НАУЧНО-ТЕХНИЧЕСКОГО РАЗВИТИЯ, 117-120
8. Акбаралиев, Х., Мухамедов, Д., & Абдувахобов, Д. (2020). ШАРНИРНАЯ ЗУБЧАТАЯ БОРОНА ДЛЯ ПОВЕРХНОСТНОЙ ОБРАБОТКИ ПОЧВЫ ПЕРЕД ПОСЕВОМ ХЛОПЧАТНИКА. In Научно-практические аспекты инновационного развития транспортных систем и инженерных сооружений (pp. 11-14).
9. Madaminov, M. F., & Akbaraliyev, X. X. (2018). ISSUES OF DEVELOPMENT TECHNICAL SPECIALTIES STUDENTS IN HIGHER EDUCATION. Теория и практика современной науки, (4), 63-65.
10. Imomqulov, U. B., Imomov, M. H., Akbaraliyev, X. X., Nabijonov, U. A., & Mirzaabdullayev, M. M. Substantiation Angle of Incidence of the Device with a Changing Curvilinear Surface to the Drum. International Journal on Integrated Education, 3(12), 481-483.
11. Imomov, M. X., Akbaraliyev, X. X., Tojiyev, M. V., & Abduganiyev, S. A. (2022). USE OF THE LATEST INFORMATION TECHNOLOGIES, ACHIEVEMENTS OF SCIENTIFIC AND TECHNICAL DEVELOPMENT IN THE PROCESS OF STUDYING THE SCIENCE OF DESCRIPTIVE GEOMETRY AND COMPUTER GRAPHICS. TA'LIM VA RIVOJLANISH TAHLILI ONLAYN ILMIY JURNALI, 2(6), 137-141.
12. Imomqulov, U. B., Imomov, M. H., & Akbaraliyev, X. X. (2020). Theoretical Justification of Some Parameters of the Metering Device. International Journal of Advanced Research in Science, Engineering and Technology, 7(11), 15879-15884.
13. Abduganiyev Shohruh, Akbaraliyev Xusniddin, Ogaliqov Mirzaakbar, Abduganiyeva Guzalkhon, & No'monjonov Axror (2022). INDICATORS THAT CHARACTERIZE THE DRIVER, HIS MENTAL STATE AND BIOLOGICAL CAPABILITIES. Universum: Технические науки, (6-6(99)), 45-47.
14. Rukhiddinovna, N. Y., Dadamirzaevich, I. D., Usubjanova, D. M., & Kiramidinovna, I. D. (2020). METHODOLOGY OF THE FORMATION OF GENERAL VOCATIONAL TRAINING IN STUDENTS OF HIGHER EDUCATIONAL INSTITUTIONS ON THE BASIS OF COMPETENCY APPROACH. PalArch's Journal of Archaeology of Egypt/Egyptology, 17(6), 3663-3679.
15. Солиев, Д. З. (2022). ИССЛЕДОВАНИЙ ПО БЕЗОПАСНОСТИ ДОРОЖНОГО ДВИЖЕНИЯ И АВТОТЕХНИЧЕСКОЙ ЭКСПЕРТИЗЫ. European Journal of Interdisciplinary Research and Development, 3, 121-125.
16. Nabihon, G., Doniyor, S., & Mavjuda, T. (2022). Increasing the Effectiveness of Students' Independent Work in Developing the Subject" Drawing Geometry". International Journal of Innovative Analyses and Emerging Technology, 2(1), 17-19.
17. Турдалиев, В., Мансуров, М., & Махкамов, Г. ИЗУЧЕНИЯ ДВИЖЕНИЕ СЕМЯН ЛУКА ПРИ ВЫБРОСЕ ИЗ ВЫСЕВАЮЩЕГО АППАРАТА. ИЛМИЙ МАҚОЛАЛАР ТЎПЛАМИ, 156.
18. Тубаев, Г. М., Каххаров, А. А., & Махкамов, Г. У. (2015). Занимательные задачи на уроках черчения в 8 классе. Nauka-rastudent. ru, (6), 17-17.
19. Тубаев, Г. М., Каххаров, А. А., & Махкамов, Г. У. (2015). Занимательные задачи на уроках черчения в 8 классе. Nauka-rastudent. ru, (6), 17-17.
20. Мадумаров, К. Х., & Махкамов, Г. У. (2015). Графические способы изображения зам-кнутых винтовых поверхностей (ЗВП). Высшая школа, (8), 32-35.
21. Турсунов, Ш. Ш., & Махкамов, Г. У. (2016). использование современных педагогических технологий в процессе обучения в целях развития знаний молодежи об изобразительном искусстве. Science Time, (5 (29)), 661-664.
22. Мадумаров, К. Х., & Махкамов, Г. У. (2016). КОНСТРУИРОВАНИЕ ВИНТОВОЙ ПОВЕРХНОСТИ НА ПРИМЕРЕ ПРУЖИНЫ ШПИНДЕЛЯ ХЛОПКОУБОРОЧНОГО АППАРАТА. Science Time, (5), 400-402.
23. Турдалиев, В. М., Аскаров, Н. Н., Косимов, А. А., & Махкамов, Г. У. (2018). КИНЕМАТИЧЕСКИЙ АНАЛИЗ РЕМЕННЫХ ПЕРЕДАЧ С ЭКСЦЕНТРИЧНЫМ НАТЯЖНЫМ РОЛИКОМ. Научное знание современности, (6), 85-90.
24. Мухамедов, Д., Турдалиев, В. М., Косимов, А. А., & Махкамов, Г. У. (2019). Комбинированный агрегат для предпосевной обработки почвы и посева мелкосеменных овощных культур. In КАЧЕСТВО ПРОДУКЦИИ: КОНТРОЛЬ, УПРАВЛЕНИЕ, ПОВЫШЕНИЕ, ПЛАНИРОВАНИЕ (pp. 226-230).
25. Турдалиев, В. М., & Махкамов, Г. У. (2020). МЕХАНИЧЕСКИЙ ВЫСЕВАЮЩИЙ АППАРАТ ДЛЯ СЕМЯН ЛУКА. In СОВРЕМЕННЫЕ ИНСТРУМЕНТАЛЬНЫЕ СИСТЕМЫ, ИНФОРМАЦИОННЫЕ ТЕХНОЛОГИИ И ИННОВАЦИИ (pp. 303-306).
26. Турсунов, Ш. Ш., & Бегматов, Д. К. (2017). Возможности в процессе создания произведения при использовании приёмов и средств композиции. Научное знание современности, (3), 288-291.
27. Турсунов, Ш. Ш. (2017). Условность и выразительность в произведениях искусства графики. Научное знание современности, (3), 284-287.

28. Турсунов, Ш. Ш. (2016). Использование новых педагогических технологий в процессе художественного образования. Science Time, (2 (26)), 554-556.
29. Турсунов, Ш. Ш., & Махкамов, Г. У. (2016). использование современных педагогических технологий в процессе обучения в целях развития знаний молодежи об изобразительном искусстве. Science Time, (5 (29)), 661-664.
30. Турсунов, Ш. Ш. (2021). Замонавий шаҳарсозлик муҳитида арт-объектларни шаклланиши ва ривожланиши. Вестник Науки и Творчества, (6 (66)), 51-54.
31. Турсунов, Ш. Ш., & Хамракулов, А. К. (2019). ГРАФИКА САНЪАТИ ТАВСИФИ, БАДИИЙ ИФОДА ТИЛИНИНГ ЎЗИГА ХОС ХУСУСИЯТЛАРИ ВА МУАММОЛАРИ. Научное знание современности, (6), 6-10.
32. Турсунов, Ш. Ш. (2019). Интерьер деворий суратлари: ўтмиш, анъана ва замонавийлик. Научное знание современности, (12), 161-165.
33. Турсунов, Ш. Ш., & Уматалиев, М. С. (2017). ПСИХИЧЕСКО-ЭМОЦИОНАЛЬНОЕ СОСТОЯНИЕ, ВОЗМОЖНОСТИ, МЫСЛИ И ПОИСКИ ХУДОЖНИКА В ТВОРЧЕСКОМ ПРОЦЕССЕ ПРИ СОЗДАНИИ ПРОИЗВЕДЕНИЯ. Научное знание современности, (3), 292-296.
34. Турсунов, Ш. Ш., & Турғунов, О. Т. Ў. (2021). ЗАМОНАВИЙ ШАҲАР МУҲИТНИНГ ЖОЗИБАДОРЛИГИНИ ОШИРИШДА РАҚАМЛИ ТАСВИРЛАШНИНГ ЯНГИ ТЕХНОЛОГИЯЛАРИДАН ФОЙДАЛАНИШ ТАМОЙИЛЛАРИ. Вестник Науки и Творчества, (11 (71)), 29-33.
35. Турсунов, Ш. Ш., & Бегматов, Д. К. (2015). Гармония монументальной скульптуры и архитектуры в современном градостроительстве. Высшая школа, (5), 69-70.
36. Турсунов, Ш. Ш., & Камбарова, Д. Ш. (2019). КЕЛАЖАК ЁШ АВЛОДНИ ЎСТИРИШДА БАРКАМОЛ ОИЛАНИ ЎРНИ ВА АҲАМИЯТИ. Научное знание современности, (12), 33-37.
37. Турсунов, Ш. Ш. (2018). Тасаввуфда ранг фалсафаси. Научное знание современности, (5), 89-93.
38. Sh.Sh.Tursunov. EFFECTIVE USE OF DECORATIVE LIGHTING IN A MODERN URBAN ENVIRONMENT. International Journal of Advanced Research in IT and Engineering ISSN: 2278-6244.
39. Tursunov S.S. Mosaic is an Art of "Painting" about Eternity. Design Engineering ISSN: 0011-9342 | Year 2021