



IMPROVING THE METHODOLOGY OF PREPARING STUDENTS FOR ENGINEERING ACTIVITY BASED ON THE INTEGRATION OF PEDAGOGICAL AND TECHNICAL KNOWLEDGE

(In the example of vehicle engineering)

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Abstract

The article discusses the improvement of the methodology of preparing students for engineering activities based on the integration of pedagogical and technical knowledge, the integrated teaching of subjects and the simultaneous and interdependent study of their related topics.

Keywords: pedagogical, technical, integration, reading, knowledge, stress, creativity.

Providing the economy with highly efficient workers and engineers in accordance with industrial characteristics is of great importance for the constituent entities of New Uzbekistan. The characteristics of the specialist training system existing in many regions require the introduction of modern production and education technologies in vocational education institutions and higher education and adaptation of graduates to production conditions.

Decree No. PF-5812 of the President of the Republic of Uzbekistan dated September 6, 2019 "On additional measures to further improve the professional education system" made a great contribution to the development of this field and created wide-scale opportunities [1].

Also, on the basis of the Decree, measures aimed at improving the system of secondary special and vocational education were developed. Ensuring the integration of theory and practice in professional education has a significant impact on reducing the unwillingness of personnel, improving the methodology of training for engineering activities. Integration of theoretical and practical educational programs in the training of specialists in professional education creates an opportunity to expand educational opportunities, methodical enrichment and increase the quality of education.

It is known that the new level of quality in education cannot be achieved with traditional educational methods. The introduction of the integration of subjects into the educational system allows us to fulfill the order that our society has placed before education [2], [8], [10].





On the basis of the integration of pedagogical and technical knowledge, the preparation of students for engineering activities creates opportunities according to the methodology [3], [4], [7]:

- The transition from the organic connection of pedagogical and technical subjects to continuous interdisciplinary connection facilitates the acquisition of knowledge and gives students the opportunity to apply the methods used in one object to another object;
- A large number of problem situations in the structure of the integration of pedagogical and technical sciences activates the student's ability to think;
- Integration of pedagogical and technical sciences increases the information volume of the lesson;
- The integration of pedagogical and technical sciences makes it possible to find new factors that confirm or deepen certain observations and conclusions of students in learning different subjects;
- The integration of pedagogical and technical subjects is a motivational tool for learning. It helps to activate students' learning and cognitive activities, helps them to be free from tension and fatigue;
- The integration of pedagogical and technical sciences helps to improve the creativity of students, allows them to apply the acquired knowledge in real life situations.

The integration of pedagogical and technical sciences provides an opportunity to implement all the above-mentioned tasks. Integrated teaching of subjects creates an opportunity to study related topics simultaneously and interdependently.

Integration is a new approach to teaching science. Such classes provide an opportunity to save time due to the fact that the educational materials of different subjects complement each other [9], [11].

The main methods of integration are as follows:

1. Lessons are conducted in connection with topics in other subjects.
2. Lessons are conducted in the form of creative laboratory work.
3. Lessons are supplemented with electronic informational educational resources.

One of the easiest methods of integration within traditional academic subjects is to conduct integrated lessons.

The integration of pedagogical and technical sciences is a universal connecting link that allows to connect subjects of all educational areas in a higher education institution. In order to improve the methodology of preparing students for engineering activities, based on the integration of pedagogical and technical knowledge, especially in the field of car maintenance and operation, it is possible to organize an integrated lesson and develop integrated tasks for educational directions



in accordance with the level of preparation of students and the tools of informatics and information technologies. For example, it is possible to solve mathematical and physical problems, construct graphs of functions, solve equations, make approximate calculations, and model physical processes. Or a comparative analysis of the operation of computer devices and the computer system can be used when explaining the topic of "Computer memories". In both cases, four main processes can be distinguished: receiving, storing, processing and transmitting information. It allows to compare the short and long term memory of a person with the operational and external memories of a computer.

The above-mentioned example can be a practical example for teaching the method of preparing students for engineering activities based on the integration of pedagogical and technical knowledge in the field of architecture and construction. Similarly, the issue of integration of pedagogical and technical knowledge can be considered in the example of other disciplines.

In short, the method of preparing students for engineering activities based on the integration of pedagogical and technical knowledge in education allows to approach students individually. Systematization of knowledge, comprehensive development, creative approach, increase of motivation aimed at gaining knowledge, that is, integrated teaching are useful opportunities.

REFERENCES

1. Ўзбекистон Республикаси Президентининг 2019 йил 6 сентябрдаги “Профессионал таълим тизимини янада такомиллаштиришга доир қўшимча чора-тадбирлар тўғрисида” гиПФ-5812-сон Фармони.
2. Федотова Г.А. Взаимодействие социальных партнеров в процессе профессионального обучения в ФРГ. Аналитический обзор / Г.А.Федотова. М.: ИППО, 1998. 45с.
3. Тешев В.А. Использование элементов дуальной формы образования в высшей школе при подготовке практико-ориентированных специалистов / В.А.Тешев. Режим доступа: 2018.
4. Usubovich, O. O., & Nematillaevna, Z. D. (2022). Problems Arising From the Use of the Case-Study Method and Methods of Their Prevention. CENTRAL ASIAN JOURNAL OF SOCIAL SCIENCES AND HISTORY, 3(6), 5-10.
5. Очилов, А. (2022). ТАЪЛИМДА ИННОВАЦИОН ЖАРАЁНЛАР. Theoretical aspects in the formation of pedagogical sciences, 1(4), 16-19.





6. Мухамедова, Г. Б. (2022). ПРОФЕССОР-ЎҚИТУВЧИЛАРНИНГ КРЕАТИВ КОМПЕТЕНЦИЯЛАРИНИ РИВОЖЛАНТИРИШ. Oriental renaissance: Innovative, educational, natural and social sciences, 2(6), 289-293.
7. Химматалиев, Д. О., & Мукимов, Б. Р. (2019). Интегрированный подход к формированию коммуникативной компетентности учителя профессионального образования. Сборник научных статей по итогам работы Международного научного форума, 91.
8. Usubovich, O. O., & Ne'matillaevna, Z. D. (2022). METHODOLOGY OF USING CONNECTING ELEMENTS OF SCIENCE IN THE ORGANIZATION OF INDEPENDENT WORK OF THE SCIENCE OF HYDROELECTRIC POWER STATIONS. Web of Scientist: International Scientific Research Journal, 3(3), 654-661.
9. Химматалиев, Д. О. (2016). Интеграция научных знаний при подготовке к профессиональной деятельности будущих учителей профессионального образования. ГОСУДАРСТВО И ШКОЛА, 50.
10. Najmiddinova Yo. R., Inamov D. D., Davronova M. U., Inamiddinova D. K. 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, PJAEE, 17 (6) (2020). – 3663-3679 page. <http://www.palarch.nl/index.php/jae/article/view/1482>
11. Najmiddinova Yo. R. Conditions of Forming Professional Abilities and Skills on Competence Approach among Colleges Students // Eastern European Scientific Journal. - Germany, 2018. - №4. - P.196-199.

