Formation of Intellectual Abilities in Students on the Basis of a Metacognitive Approach

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ABSTRACT

The place of intellectual abilities in the professional structure, the qualifications of students. The results of intellectual research and the abilities of students and ways of their formation.

Keywords: professional competence, intellectual competence, intellectual abilities, metacognitive, cognitive.

Introduction. The development of the professional competence of the student is becoming one of the main tasks of any educational institution, at the same time, until now there are no specific approaches to the problem of its formation. It turns out that a graduate of a higher educational institution cannot be considered a specialist who has achieved a high level of skill in his profession. But nevertheless, it is considered the main requirement and task of today's education to have qualities that allow it to improve professionally. In other words, it is considered very important for institutions to form the intellectual elements of this system.

Thus, a specialist teacher involves achieving a certain level of professional education, in which the new quality of education can be defined as professional education. Solving problems in the quality of competence and the ability and desire to professionally apply the knowledge and experience gained by a graduate is the main problem before us and we find a solution in studies step by Step [1].

If we consider the formation of competence within the framework of the higher education system, then it is possible to talk about knowledge, the qualifications and skills of a specialist V. N. Dictated by Druzhinin as follows, intelect (as a general ability) lies based on other abilities and determines the success of any activity [2].

M. The problem of intellectual competence in terms of a structural-integrative approach.A.Kholodnaya considers in his research. [1,3] he cites this term based on his scientific results. It proposes to be understood as" a special type of Organization of Science-specific knowledge that provides the possibility of making effective decisions in a particular area " [3].

We consider intellectual abilities as one of the components of individual personality traits of students, which, in turn, is considered one of the most important.

R. for the assessment of intellectual development and professional inclinations. It is permissible to insist on the conclusions of the experimental test results through amthauer's test. The ideas about intelect were one of the substructures in the integral structure of the individual, and 124 students of the Faculty of oil and gas technology took part. Student test scores showed that 13.7% of students had a higher overall intelligence level, 18.2% had a

higher average, 36.8% had an average, 12.8% had an average, and 18.5% had a low.

The highest results are obtained in the subtest "spatial thinking", from which we can conclude that most students have the ability to distinguish the spatial structure of objects and work systematically, and not with integral images or" external", visible features. Internal dependencies and relationships, the visual process changes perception in such a way that these visual parameters are analytically separated and strengthened. An object that is directly related to its interior; structural features, its internal spatial structure are among them. Based on this type of thinking, the concept of objective laws forms the spatial organization of objects and phenomena that can visualize the surrounding world and the being that surrounds it [4].

In the interpretation of the results, empirical data was transferred from the factorization procedure. Subtests are combined into three factors: engineering abilities, conceptual thinking, practical intelect.

1 analysis. "Engineering abilities" (37.5%)-general intelligence level 0.815; number row (formal-logical thinking) 0.808; calculation (engineering intuition) 0.696; cubes (spatial thinking) 0.636; selection numbers (figurative synthesis) 0.710.

17.7% of students are characterized by high levels of intelligence, engineering project work, mastery, and “fast” skills. The process of insulating the spatial structure of objects occurs through structural internal projects and relationships, and not with integral images or “external”, visible properties. They develop the abilities to form holistic ideas based on scattered, fragmented ideas that are constantly collected, but not systematized.

2 Analysis. "Conceptual thinking" (13.5%) - definition of common features (intuitive conceptual thinking) 0.861; analogies (conceptual logical thinking) 0.683; classification (conceptual categorization) 0.475. 12.9% of students are able to see, emphasize, understand the inner meaning of statements, messages, an important, fundamental thing in descriptive, unstructured material. Separation of important, permanent properties, signs of objects and phenomena from "external", small ones. Identification of objective laws, connections between phenomena of the surrounding world, the ability to see internal logic in the sequence of events, ongoing changes, protection of activity algorithms. In 77.4%, these abilities are moderately developed, while in 10.5% they are low developed.

3 Analysis. "Practical intellect" (11.5%) - general awareness (inductive reasoning, vocabulary) 0.932. 8.9% of students are able to create their own individual methods to systematize information that cannot be objectively classified. In 75%, these abilities are moderately developed, in 16.1%, at a low level. This factor is unique because it has a lower weight load [5, 6, 8].

When mastering scientific concepts, individual internal experience is restructured and regulated in accordance with the objective system. The general relations of the laws of generalization, subordination, addition, uniformity, as well as variability and development, characteristic of the oil and gas sphere of knowledge, and its multifaceted structure of technologies are "vertical and horizontal connections”, where each element is naturally connected with others. Therefore, it is considered very important to "transfer" knowledge, skills and methods of activity through the implementation of an intelect structure in the conceptual [9, 10].

Ontological theory rules can be proposed to formulate students ' intellectual abilities. E. As a special form of Organization of the mental experience of the individual.G.Gelfman, M. A. Kholodnoy [1]. Accordingly, the psychological foundations of the formation of students ' intellectual abilities enrich the basic forms of mental experience, including cognitive components, metacognitive and intentional (emotional-evaluative) experience. Cognitive experience – mental structures responsible for the effective processing of information-methods of encoding information, cognitive schemes, semantic structures and conceptual structures as a result of the integration of these components of cognitive experience.

Formation of conceptual structures.

Metcognitive experience - mental structures that provide control over one's own intellectual activity-intellectual control, metacognitive consciousness, open cognitive position.

Enrichment of metacognitive experience.

Table 1.

Intellectual control is the ability to voluntarily and arbitrarily regulate one's activities.
Training sessions allow: 1. to understand and accept the goals of future activities; to put the goals and sub-goals of their activities, to think about the means of their implementation; 2. consciously building the sequence of their actions; 3. working in conditions where information is insufficient, redundant or conflicting; 4. to act according to the proposed plan, compare different plans to solve one and choose the same task, one or another solution plan, draw up your own activity plan; 5. construction of various algorithms for solving specific physical and engineering issues, mastering individual stages of the algorithm and linking the results of performing individual stages with the specified goals; 6. preliminary mental analysis and analysis of the problem before making a decision; 7. predicting and predicting the consequences of decisions made, as well as possible changes in the problem situations;
• subjective assessment of the quality of individual actions and the results of their intellectual activity; • seeing your own mistakes, identifying their causes, preventing mistakes from occurring;
choosing your own educational strategy, as well as changing it under the influence of new requirements and taking into account their intellectual capabilities.
Metacognitive consciousness is a system of beliefs about one's own mental qualities and how they fit. effective use, as well as how scientific knowledge is regulated and what are the characteristics of different methods of cognition;
introduction of methods and foundations of physical-engineering activity, rules of effective thinking in solving physical-engineering issues;
tasks that give the student the opportunity to self-assess success in the study of educational subjects, assess their strong and weak intellectual qualities.
The open cognitive position implies variability and various ways of analyzing what is happening, as well as readiness to accept an unusual, paradoxical, "impossible" situation.
Tasks contribute to its formation: • to realize that there are several approaches to the same situation and to make it possible to work within different, including alternative, approaches;
· offer several options for solving the same problem; · content conflict data; · development of the ability to receive conflicting information; · encourage willingness to accept and discuss unusual ideas; · engineering-to see the perspective in the study of manageability and to give the opportunity to refer to the material already studied from a new point of view. · the student learns to perceive and respect alternative thought, classes that can defend their point of view.

Conclusion.

Thus, a complex of engineering subtests is the leader in the structure of student intelligence, which implies abilities in the field of engineering. Alternatively, a block of conceptual thinking is allocated, the programming of which is a prerequisite for the activities of the future engineer, since the

specific features of mastering the disciplines of specialization include.

References.

1. Olimov, K. T., Sayfullaeva, D. A., Khimmataliev, D. O., Ashurova, S. Y., & Gaffarov, F. H. (2019). Teaching Special Subjects for Students with Disabilities in Preparation for the Profession by Using Innovative Educational Technologies. *International Journal of Innovative Technology and Exploring Engineering (IJITEE)*, *9*, 425-429.
2. Olimov, K. T. (2019). Introduction of dual training in the system of continuous professional education. *European Journal of Research and Reflection in Educational Sciences*, *7*(12), 509-512.
3. Olimov, K. T., Tulaev, B. R., Khimmataliev, D. O., Daminov, L. O., Bozarov, D. U., & Tufliyev, E. O. (2020). Interdisciplinary integration–the basis for diagnosis of preparation for professional activity. *Solid State Technology*, 246-257.
4. Olimov, K. T., & Sh, T. Z. (2019). Integration of Special Subjects, Opportunities and Solutions. *Eastenr European Scientific Journal*, (2), 67-70.
5. Олимов, К. Т., Гаффаров, Ф. Х., & Расулов, А. А. (2015). Регистрация качества эффективности учебников по специальным дисциплинам профессионального образования. *Молодой ученый*, (10), 1244-1246.
6. Гельфман Э. Г., Холодная М. А. Психодидактика школьного учебника. Интеллектуальное воспитание учащихся. СПб.: Питер, 2006.
7. Дружинин В. Н. Психология общих способностей. СПб.: Питер, 2002.
8. Холодная М. А. Психология интеллекта. Парадоксы исследования. СПб.: Питер, 2002.
9. Ясюкова Л. А. Закономерности развития понятийного мышления и его роль в обучении. СПб.: ГП ИМАТОН, 2005.
10. Ergashev, N. (2022). Bulutli texnologıyalarda mavjud tahdidlar, ularga qarshi kurashish mexanizmları va metodlari.
11. Ergashev, N. (2022). Raqamli ta'lim sharoitida bulutli texnologiyalar yordamida o 'qituvchilarni kasbiy faoliyatga ko 'p bosqichli tayyorlashning nazariy aspektlari.
12. Ergashev, N. (2023). Methods of teaching parallel programming methods in higher education. Electron Library Karshi EEI, 1(01). Retrieved from https://ojs.qmii.uz/index.php/el/article/view/271
13. 12.Ergashev, N. (2022). Texnika ixtisosliklari mutaxassislik masalalarini yechishda C++ visual dasturlash tilida klasslardan foydalanish tahlili.
14. ERGASHEV, N. THE ANALYSIS OF THE USE OF CLASSES IN C++ VISUAL PROGRAMMING IN SOLVING THE SPECIALTY ISSUES OF TECHNICAL SPECIALTIES. http://science. nuu. uz/uzmu. php.
15. Gayratovich, E. N., & Jovliyevich, K. B. (2023). Theory and Methodology of Software Modeling Using the Web Platform. Eurasian Scientific Herald, 16, 59-63.
16. Ergashev, N. (2021). ЎКУВ МАТЕРИАЛИНИ ВИЗУАЛ ТЕХНОЛОГИЯЛАР АСОСИДА НАМОЙИШ ЭТИШНИНГ ЎЗИГА ХОС АСПЕКТЛАРИ. Scienceweb academic papers collection.
17. G'ayratovich, E. N. (2022). The Theory of the Use of Cloud Technologies in the Implementation of Hierarchical Preparation of Engineers. Eurasian Research Bulletin, 7, 18-21.