DEVELOPMENT OF BASIC KNOWLEDGE IN EDUCATIONAL ACTIVITY USING BASIC KNOWLEDGE IN TEACHING ORGANIC CHEMISTRY

A. T. Jurayev
Bukhara State University, II degree master's degree in chemistry

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ABSTRACT

The article discusses the issues of adjusting the basic knowledge of students as a necessary condition for obtaining a quality education.

Keywords: organic chemistry, electronic, nucleophilic, quality of education, organization of the educational process, correction of knowledge, information technology, books, articles, lectures, personal communication, advice from a mentor.

The tasks of in-depth teaching of special sciences, history of our country and world civilization, foreign languages and modern computer programs to children and youth have not been solved in a quality and complete way. The solution to another problem is very important: it is the professionalism of teachers and professors, their special knowledge. In this regard, it is necessary to create an environment that actively promotes the process of education, spiritual and enlightenment maturity and the formation of true values.

One of the main indicators of the country's level of development was the competitiveness of its education system, science and technology transfer. This is a factor that ensures the innovative nature of the economy, so in developed countries, great importance is attached to the continuous development of this industry.

Solving this problem requires not only constant investment in science and education, but also the correct organization of their structure, which must be flexible to new tasks and modern requirements. The education and science system must be able to adapt to new trends in the economy and society.

Over the years, the content of education and teaching methods have improved. In particular, the process of teaching organic chemistry and the application of basic knowledge in it is no exception. It is no secret that science, especially encyclopedic sciences, has been widely developed in Central Asia since ancient times in the land of Turan. The natural sciences, medicine, science, astrology, mathematics, philosophy, logic, and ethics flourished. Our countless scholars, such as Ahmad Fergani, Abu Nasr Farobi, Abu Rayhan Beruni, Abu Ali Ibn Sino, Muhammad Taragay, Ulugbek, al-Termizi, Imam Ismail Bukhari, Bahovuddin Naqshband, contributed to the development of world science and spirituality. who have made invaluable contributions. In Ihsa al-Ulum, Farobi emphasizes the role of education in changing human knowledge and general worldview: Such things seem nourishing to him. Once he has the knowledge and experience, he will change his mind, and what seems inappropriate will become necessary.

Students' knowledge of the classification of organic reactions according to the mechanism (type of bond breakage or nature of reagents) was pedagogically studied and analyzed, which showed that students could not apply their knowledge in practice. This can be the result of a didactic lack of attention and teacher neglect to bring students' attention to the most important or basic knowledge in the process of acquiring knowledge. For example, an analysis of students' knowledge showed, "In what order does the mechanism of organic reactions work?" It is known that most students have a low level of understanding of the mechanism of organic reactions.

The mechanism of a reaction is to know exactly how it goes at all stages. The study of mechanisms determines the order in which the breakdown of old covalent bonds and the formation of new covalent bonds, and the formation of active particles. During the reaction, the valence electrons are redistributed between the substrate

and the reagent. Depending on the type of covalent bond break in the substrate molecule, organic reactions are divided into homolytic (radical) and heterolytic (ionic) reactions.

Radical reactions (R) proceed with the hemolytic rupture of covalent bonds. In these reactions, free radicals (electroneutral atoms with a single electron or a group of atoms) are considered reagents. One electron from both the reagent and the substrate is involved in the formation of a new covalent bond:

$$Cl:Cl \xrightarrow{h\nu} 2\,Cl^{\bullet}$$

$$\underset{\text{substrat}}{R:H} + \underset{\text{reagent}}{Cl^{\bullet}} \longrightarrow R^{\bullet} + HCl$$

$$R^{\bullet} + Cl:Cl \longrightarrow RCl + Cl^{\bullet}$$

Organic compounds composed of electromagnetically close atoms (with non-polar or weakly polar C-C, N-H, C-H bonds) undergo radical reactions under the influence of high temperatures, high-energy light (UV light, radioactive radiation), as well as peroxides that readily decompose into free radicals:

$$R-O-O-R \longrightarrow 2RO^{\bullet}$$

These reactions take place in non-polar solvents and are slowed down or stopped completely by inhibitors (oxygen, iodine, hydroquinone, etc.) that react easily with free radicals. Ionic or polar reactions occur with heterolytic disruption of covalent bonds. Strongly polar and easily polarized bonds are prone to heterolytic rupture. Depending on the nature of the reagents, ionic reactions are divided into nucleophilic (N) and electrophilic (E) reactions.

Positive conclusions could be drawn when such answers were given. But the students struggled and partially responded. This means that students need to be taught how to apply basic knowledge.

"It is important to ensure that students consciously and thoroughly master the leading ideas and basic concepts of organic chemistry," he said. It is true that, as in all sciences, the science of organic chemistry has a great deal to offer, and it has a vast and sufficient body of reliable data. It is difficult or impossible to teach all of them in a textbook due to lack of time and other reasons. In addition, so far no intellectual ideas have been developed based on the scientific basis of the methodology of teaching organic chemistry for the application of basic knowledge in practice.

From the point of view of dialectics, one's knowledge of the material world is relative. Of course, human knowledge is not absolute about everything. The knowledge of this is constantly evolving and deepening. Each new generation acquires the knowledge of the previous generation, enriches and develops it in new conditions.

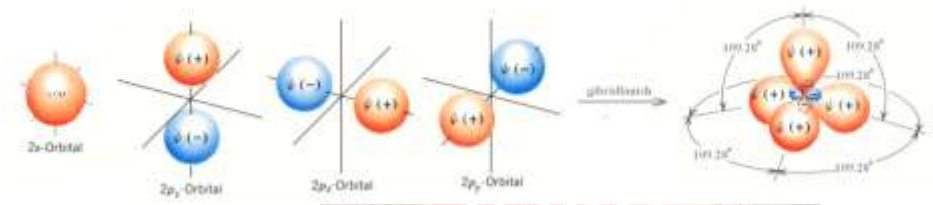
The accumulation of knowledge is a very complex process that takes place through daily experience, scientific observations, and theories. So it has a social meaning. Human knowledge is accumulated as a result of the process of knowing. And knowledge is the reflection of reality in the human mind. We know that the purpose of knowledge is to subdue and serve man the things and phenomena of nature and society.

The process of cognition is characterized by the transition from live observation (emotional knowledge) to abstract thinking (mental cognition), and from there to practice. When we say living observation, we mean intuition, perception, imagination. Abstract thinking is the rational essence of knowledge. We know from philosophy that the pinnacle of a complete and profound knowledge of the world is scientific knowledge. Scientific knowledge is realized through science and has methods such as analysis, synthesis, induction and

deduction. A skill is a person's ability to perform a specific activity or action based on past experiences. Qualification is the automation of the processes of performing and managing certain actions.

As proof of our point, let us look at the hybridization of atomic orbitals. Since the carbon atom was involved in the formation of the methane molecule with one 2s- and three 2p-orbitals, and the hydrogen atoms with a single 1s-orbital, the three s-p bonds in its molecule had to be different from the fourth s-s bond. The study of the chemical properties of methane and some parameters of the C – H bonds in it (bond length, energy, polarity) gave the opposite result, that is, all four C – H bonds had the same nature (energy, length).) and properties. In order to explain this fact, L. Pauling in 1931 put forward the hypothesis of hybridization of orbitals. According to him, in the formation of methane and similar CX4-type organic substances, one s- and three p-orbitals of a carbon atom combine to form four sp3-hybridized orbitals with the same shape and energy. This hybrid orbital has 25% s and 75% p character, in which the shape of the s- and p-orbitals is preserved to some extent. As you can see, the hybrid orbital has a lot of electron clouds on one side and less on the other. The hybrid orbital covers the other orbit in many ways in this electron cloud. As a result, the coverage is maximized, the density of the electron cloud between the nuclei increases, and the resulting bond is stable.

Four sp3-hybridized orbitals are formed from one 2s- and three 2p-orbitals of carbon:



sp^3- Formation of a hybrid orbital

The hybridization of atomic orbitals becomes meaningful only if the student is able to imagine in his mind based on scientific knowledge and skills.

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sp^2 structure of a hybridized ethylene molecule

A person needs skills in any activity. Skills are formed as a result of exercise. The process of its formation is divided into three stages: analysis, synthesis and automation. The level of knowledge, experience, and skills required to perform each specific task is the level of preparation for that task.

Thus, the level of basic knowledge acquired, the sum of the skills and abilities of the student, the level of the set of experiences have a positive impact on the quality of their implementation. The basic knowledge acquired by the student serves to develop his mental and physical abilities, to form his scientific outlook, and to prepare them for life and work by regulating their morals, manners, and behavior.

Society, goods, services, and labor markets are changing rapidly. Lifestyle at different levels - at the global, social, organizational and individual levels, individuals and organizations are prepared for constant change, have

the appropriate new knowledge, approaches and skills that enable them to master the new approaches needed at work and social life The changes that need to be made are constantly coming in.

This need for change is multifaceted. Political changes on a global scale, the removal of trade barriers, the growing importance of information and communication technologies, the obsolescence of technology and products, as well as the impact of large international capital flows create enormous opportunities, as well as high levels of uncertainty and complexity. , creates new personal and interpersonal skills.

To build a skill, you need to acquire knowledge and put it into practice. Knowledge is information that we receive and store in our memory. There are many sources of knowledge: books, articles, lectures, personal conversations, teacher advice. Take driving, for example. Knowledge of car structure, rules of the road and driving theory.

Applying knowledge in practice is the first and most undeveloped experience. You will be able to drive around the city or school. It only gives us a driver's license, and the qualification is not yet formed.

In the 20th century, the primary function of public education was to teach people to read, write, and count. Later, literate workers developed skills in specific occupations in technical schools, universities, and courses. At that time, the professional duties did not change much. All you need to do is develop a few skills to move up the career ladder. For example, this is enough to cover the road from the employee to the store manager. By the beginning of the 21st century, about 85% of the world's population had basic literacy but lacked narrow professional skills. The complex world required new basic and professional skills.

The main content of the pedagogical profession is to interact with people. The activities of other "person-to-person" professions also require interaction with people, but these professions are related to understanding and meeting human needs. The leading task in the pedagogical profession is to understand social goals and to direct the efforts of others to achieve them. The uniqueness of education as a social management activity is that it has a dual subject matter.

On the one hand, its main content is the relationship with people: if the leader (educator) does not develop the right relationships with the people he leads or convinces, the most important thing in his work is lost. On the other hand, these types of professions always require a person to have special knowledge, skills and abilities in any field (depending on who or what manages them). An educator, like any leader, needs to know the students' activities and understand the development process he or she is leading. Thus, the pedagogical profession requires two-dimensional anthropology and special training.

Each network has a small core of common basic knowledge and skills that employees can apply. At the heart of this core are "basic skills" such as reading, writing and arithmetic. All employees have these skills, regardless of their field of activity. Human knowledge should not be limited to "basic skills". In the 21st century, the transition from utilitarian industrial education to an integrated education paradigm is crucial. The traditional paradigm firmly separated education from other spheres of life and embraced only students to prepare them for the future. The new paradigm is continuous - lifelong learning. Such an education system focuses not only on imparting knowledge and skills, but also on supporting the formation of a person as a full-fledged author in all spheres of life.

At the community level - public spending, privatization, the creation of "market mechanisms" in the field of public services, new forms of governance, including non-governmental, the use of business methods in all spheres of life, increasing the effectiveness of "influence groups" in society adopting calculated activities,

raising concerns for the preservation of the environment, and the growing impact of women's rights create a high level of uncertainty for individuals, which requires a new kind of personal, civic, and social competence.

One of the most important ways for an individual to acquire and improve basic skills is through education, and the training system should reflect this in the pedagogical and methodological approaches used in the educational process.

The learning process is a forward-looking didactic event, which is determined by the nature, content, direction, social factors of education, and operates in the system of "reading, learning, development."

Educational activity is an independent pedagogical phenomenon, the essence of which can be studied in more depth by looking for the means of its development and formation in the activity itself.

As mentioned above, skills differ in general and technical - they should not be taught as traditional subjects, but should be systematically integrated into the whole process of education and upbringing from the very beginning. From this point of view, the main task is to organize the audience and the teaching situation around these skills, to create conditions for students to know and "feel" the concept, to prevent memorization in the traditional sense. Through this movement, learning is encouraged, experience exchange, experience, collaboration, making "positive" mistakes, creative problem solving, social collaboration, forming and presenting ideas and problems, exploring role models and, in particular, through interactions with the outside world, leading to a focus on pedagogical methods.

The role of the educator varies from the traditional teaching function to the implementation of an approach that encourages students to play an active role in the learning process. The "ideal teacher" must be able to quickly and maximally engage in social interaction, encourage "positive" mistakes, self-control, and decision-making.

About 60% of the adult population in Uzbekistan needs knowledge and skills. Not surprisingly, access to higher education for adults has been restricted for many years. The development of adult education will fill this gap by making the workforce more qualified.

Uzbekistan will be able to come to the forefront only through education, by involving all segments of the population in it. However, for a long time, the legal framework for education was flawed. On August 7, 2020, the Senate approved the Education Act, which for the first time defined various forms of education, which will serve as a basis for a significant expansion of educational services.

These include "family education and self-education", "inclusive education", and "adult education" (OOV). The latter term includes formal, informal, and informal education, as a result of which adults expand their knowledge, enrich their skills, and acquire a profession that is in high demand throughout their lives.

As President Shavkat Mirziyoyev said in his speech at the meeting dedicated to the 29th anniversary of independence, the foundation of a new Renaissance - the third Renaissance - is being laid in our country. Such a call carries a great responsibility. It is impossible to develop without mastering new, digital knowledge, modern professions and information technologies, and education should play an important role in this direction.

The future of our country depends on an innovative economy. It allows you to build an efficient and competitive economy in a relatively short period of time, based on knowledge. Therefore, it is very important to have a high quality education system, to invest in human capital, and to actively develop and support non-formal education along with formal education.

This is more relevant than ever at a time when the COVID-19 pandemic is on the rise in the world today. Countries' recovery, economic growth, and development must depend on the development of the education system. In a competitive world, it is important to employ people and improve their well-being.

Our country needs educated youth and a strong economy. Today, a new education culture is being formed in the world that meets the requirements of the future economy. The overall goal of the economy and the education system is to train competitive and responsible personnel who are able to make independent decisions, are prone to self-development and retraining.

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