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EXPERIMENTAL WORKS BASED ON ADVANCED, PEDAGOGICAL-PSYCHOLOGICAL AND MODERN METHODS OF TEACHING CHEMISTRY AT SCHOOL

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ABSTRACT

Chemistry relies in part on the use of laboratory demonstrations and their results are considered when conducting experiments. The complex nature of this type of educational activity has shown itself difficulties may arise from the first days of teaching chemistry. Because chemistry is experimental is science, one possible way to make science teaching more effective is to use chemical reactions. The method of observation is that students should use the materials they encounter in their daily life and at the same time observe the laboratory research. This article describes us efforts to create an integrated database of general chemicals and their use in Uzbekistan consists of excellent teaching of chemistry from primary and secondary schools. The database combines two seemingly separate, but unifying. In Inextricably linked experiments that have not yet been performed: a common database Chemical substances and chemical laboratory demonstration experiments to be converted into a database. Two databases with specific characteristics are connected by a common element components present in everyday chemicals and their research in chemical experiments. The database offers different levels of search and available in both databases, allowing pre-service and in-service teachers to design their own, Demonstrations and student experiments based on common chemicals are best suited to them I believe that context, project, inquiry, discovery, and chemical research education curricula should be developed by every school teacher. Applying our database allows us to facilitate a conceptual change in how both chemistry and chemicals are viewed. These processes are very effective and increase students' interest in chemistry.

Introduction

Chemistry is distinguished from other sciences by its wide scope. Chemistry relying on experiments that usually use chemicals at the end of the experiments, a conclusion is drawn. Organization of chemistry challenges for visibility and student experiences. It is necessary to be able to use methods of teaching chemistry. for example, the problem of lack of time and laboratory space, equipment requirements, having appropriate chemicals, their handling and inventory, economic impact, safety, just to name a few. This problem has prompted many teachers to approach this problem. From a pragmatic point of view using chemicals and equipment and existing or easily replaceable devices daily, frequent use of household materials and tools depends on the teacher himself. As a chemistry teacher, I would like to inform you that it is the responsibility of the teacher to learn and explain to the student's interest. It requires experience from the teacher to prepare the methods in an interesting and understandable way. There are various sections in chemistry, analytical, electrochemical, synthetic, and isolation requiring some experience from teachers in explaining experimental work. I teach chemistry at school No. 47 of the Republic of Karakalpakstan O'telbayeva Muhayyo Alisherovna. I am currently doing scientific work based on the theory of student psychology, which will help me to formulate my chemistry methods. I am listening to students' opinions, I want the lesson to be interesting and understandable for them, I want students to learn more information from the topic, and for this I need a method of explaining them. The teacher should not make the method complicated, because it will be difficult for students to understand and it will reduce their interest in chemistry. The above supposed effect is not self-evident. The glorified role of experience as a panacea to improve the chemistry learning process, it is important to explain the information to the student and not the book is based on Chemistry requires a careful approach from the teacher. Main can be described as problems of chemistry education *difficulties with the nature of chemistry and *how students acquire knowledge. Experimental data teaching practice in the laboratory suggests that this is not the case and that change to an open teaching style offers curriculum projects. This teachers underestimate the high cognitive demand practical work on the student, because the students have to solve during the experiment, a large amount of data and their results in chemical experiments are caused, overloading the student's working memory, loading too many assignments. Another issue gradation of access to different levels of abstraction. The trichotomous, tripartite, or tripartite approach distinguishes three levels. express the concepts of chemistry: macroscopic, submicroscopic. Skillful use of chemistry concepts is important for the teacher. In the method assume continuous changes between different representations areas of chemical thinking such as experts (teachers), but new learners often have difficulty managing these three process methods simultaneously. A great way to overcome this obstacle starts at the macroscopic level, especially in students gradually add elementary school grades and other levels and look for the most interesting and memorable information on this topic and prepare your own research method. A macroscopic model is experimental work at best (albeit artificially, but this "artificiality" can be reduced, for example through experiments at home with common/daily use using chemicals as an example). Once the macroscopic level is safe, it can act as laboratory work in macroscopic situations. Muhayya also offered this curriculum, designers and textbook authors should

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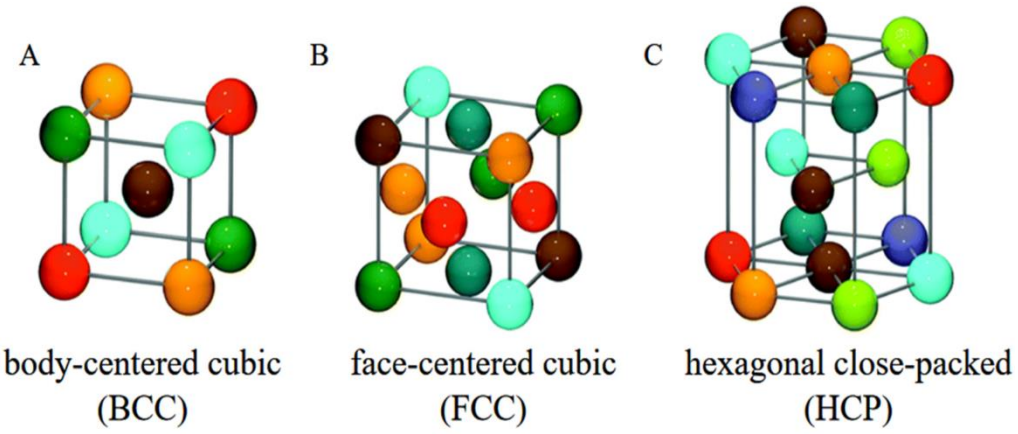
consider the need an important introductory period in which students acquire knowledge introduction to scientific thinking through the use of the teacher requires pedagogical and psychological skills. Only macroscopic and specific experiments should be done at the same time. Chemistry is a good science relies on submicroscopic considerations. Chemistry as macroscopic materials science dealing with everyday objects experience has a lot to offer. Student-centered general and inquiry-based learning learning, in particular, when conducting research in a particular discipline conditions, benefits, but difficulties may arise most students have problems in learning and understanding.

The main tasks of the method application process

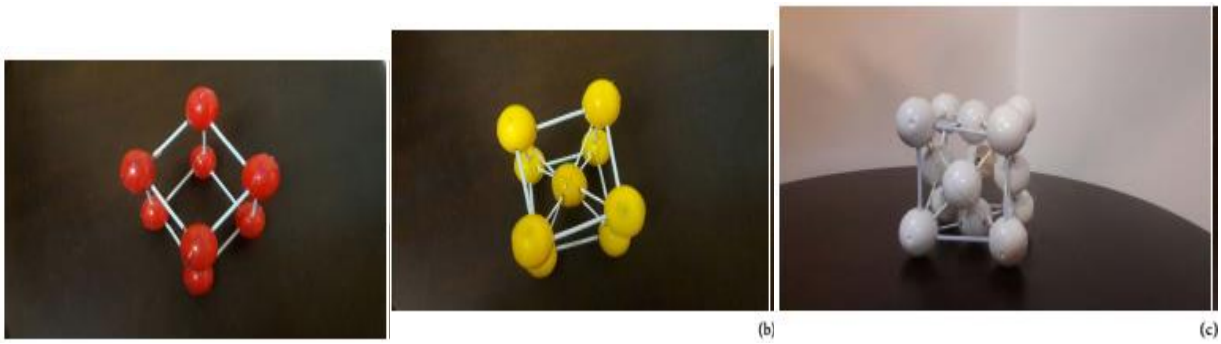
Inorganic chemistry is a science that is often considered difficult and boring because the subject deals with unobservable phenomena, e.g. students cannot see the atomic structure. understand the relationship between a two-dimensional image and its corresponding three-dimensional object is a sharp concept in chemistry. For example, structural properties of solids In general and inorganic chemistry, often taught in chemistry courses, students must be able to perceive two-dimensional representation on the page. and transforms them into three-dimensional objects in his mind. Some of the solids are crystalline solids, which have a definite shape as we know their schematic representation. There are seven crystal systems and consists of 14 types of unit cells found in nature. Unit cells originate from roads atoms are packed together. The first and simplest crystal system is the cubic system. This cubic systems are three types of cubic unit cells. In the primitive cubic unit cell, the centers of eight identical particles determine the corners of the cube (Picture 1(a)). On the other hand, the same particles lie in the cubic unit cell at the center of the body, located at each corner and in the center of the cube. Each particle is surrounded by eight nearest neighbors, four above and four below (Picture 1(b)). Centered on the face cubic unit cell (Picture 1(c)), the same particles lie at each corner and at the center of each face, but not at the center of the cube.



Picture 1. Schematic representation of the arrangement of unit cells of the cubic system.

Our original model teaching experience leads to learning and using an innovative hand-made model of crystalline solids, the quality of the lesson is interesting and meaningful (Picture 2). The resulting hand-made shapes are developed and the parts are assembled. Them the appearance of the corresponding crystal shape leaves a good impression on the readers. In fact, we observed this in our teaching practice best results were obtained when the user first drew circles for the atoms, then combined them by drawing bonds, this process is

not only makes them more cute but also adds a power factor the model looks very simple and easy to understand for students. The student then holds the pieces in place and snaps them together. For example, students get eight balls to make a primitive cube model and then joins them together and secures them in place with a plastic rod. The result beautiful, colorful 3D models of cube systems (Picture 2). These models have the potential to transform the learning problem from abstract is a real method to facilitate understanding.



Picture 2. (a) Illustration of a primitive cubic unit cell made by hand; (b) Handmade body-centered cubic unit cell representation; (c) Handmade face-centered cubic unit cell representation.

Discussion/Result

The purpose of this database is not only to convey and digitize existing information and resources, but also providing new opportunities and new look how available general chemical and chemistry demonstration experiments can be interconnected and performed at various events. Could be a database used in a versatile way to achieve different pedagogies Objectives: helps to acquire and develop knowledge thinking, and designing experiences for students and by teachers too. Similarly, it can be used in the query- and problem-based learning to expose the phenomenon or Both for problem and information are indicated in the example above. It was a database developed in connection with the latest international approaches For example, application-based curriculum development students' sense of the world around them in their context younger and wider culture and next generation sciences Uzbekistan's standards with disciplined main ideas, intersectional concepts and science/engineering practices. The real content of such an integrated database, of course It is culture and country specific, but it is universal chemistry education. Unique structure and interdependence two small databases and its concept is universal and possible can also be used in different environments. Despite using them everyday chemicals (usually compounds) have certain limitations, their use is justified on the basis of the conditions given for the description important chemical principles and explanation and connection is to study the chemistry of everyday chemicals. Innovative, comprehensive and standard chemistry learning will be material for first-year students. Using the methods developed for teaching chemistry requires pedagogical skill. It consisted of stoichiometry topics along with contextual examples and with different types of learning tools and multimedia and hyperlinks for self-study. Task instructions prepared to guide students to perform assignments are given on relevant sub-topics. Learning the collection is prepared as a printed and electronic base helping students maximize their learning opportunities chemistry. The package was implemented as a study facility to support learning activities in or out of the

classroom it is necessary to select classrooms. Innovation of the training package made studying more interesting and productive provides an opportunity to improve students' performance in chemistry. Student achievement in an experimental classroom achieve higher scores than those obtained in the control class. Learning opportunities presented in the developed training method helped students understand the concept of chemistry easily. Assignment instructions given in the study kit aimed at optimizing student learning opportunities chemistry concepts are graded. Research has shown that innovative education the material helped the students learn chemistry effectively and improved the students' skills.

Conclusions

This is the main goal of the methodology of teaching chemistry. It can be said that the teaching of chemistry has been traditional, but practical developments have influenced chemistry education. Handcrafted 3D application molecular model we have the opportunity to provide students with a new and unique way to study solid forms. It can be not only fun and interesting a learning exercise for students, but since the raw material, plastic, is cheap, students can keep their models for later. We assume that it will be so and as a result, students can share their experiences with their friends. I believe that it is necessary to encourage a positive attitude towards the study of crystal systems among students. Otelbayev Azizbek, a student of the Nukus Mining Institute, has conducted many studies on the chemical processes of beneficiation in mining enterprises. He reflected in his articles about mining technologies, mine processes, flotation and mine engineering, technological parameters of the mine. Azizbek is very interested in the mining sector. So far, most of his articles have been published in international journals. Azizbek is currently engaged in scientific work on the design of mining enterprises and the process of chemical beneficiation. Azizbek's article on methods of beneficiation processes and indicators of chemical beneficiation efficiency, flotation process in mining enterprises was published in prestigious magazines of Uzbekistan.

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