

THE IMPORTANCE OF USING INNOVATIVE METHODS AND TECHNOLOGY IN TEACHING CHEMISTRY

Kazakov Rafiqjon Nabijon o'g'li

Department of chemistry, PhD

Raxmonberdiyeva Barnoxon

Student of Andijan State University

Abstract: The field of chemistry education is constantly evolving as new technologies and innovative teaching methods emerge. In today's digital world, it is crucial for chemistry teachers to adopt modern approaches that engage students and enhance learning. Traditional lecture-based instruction alone is often not sufficient to inspire students and maximize comprehension of challenging concepts in chemistry. This article will discuss the importance of incorporating innovative methods and technology into chemistry teaching in order to improve student outcomes and prepare them for success in an increasingly technological world.

Keywords: Chemistry, innovative methods, learning methods, teaching ways, education, environment.

Introduction: Science is a fundamental reason for some parts of our day to day routines and it is an extraordinary wellspring of chances for the future life overall. Nonetheless, progresses in science have entered into all circles of human existence and ones have turned into a fundamental piece of life. For instance, there are numerous headings, for example, food items, medication having a place with clinical medications, numerous cutting edge chemistry related items and innovations, etc.

Science is firmly connected with science, physical science, medication and environmental sciences. Simultaneously, the natural environmental issues other than of creating sans waste and biological unadulterated creations, strategies and advancements, the issues of clean drinking water, additionally worldwide issues before science and their answers are the essential trademark ascribes.

The job of the science in our lives and the significance of taking care of genuine issues before the humankind means to note primary objectives of advanced education to teach qualified, taught and high level units preparing to tackling the issues of science. That is the reason, the most recent advances in science reflecting superior substance and effectiveness of explores which pointed toward working on the understudies' learning in advanced education are genuine overall. Without a doubt, the utilization of creative advancements in science educating makes a positive difference.

The principal accentuation ought to be made for procurement of major information, improvement capacity of examine and to address different compound undertakings as well as hypothetical and exploratory. It ought to be noticed, that inconsistency between nearly speeding up dramatically measure of new genuine materials and severe guideline of schooling principles is the serious issue in subjective learning of natural science.

Clearly, to defeat of this issue, requires massive changes at strategy of training, association types of instructive interaction, which is conceivable exclusively by utilizing current data and educational advances. As far as view of data, especially alluring that is representation, which is genuine in schooling cycle of natural science and related disciplines, as so this science utilizes more than others explicit realistic language of underlying equation, portrayal of spatial design of goliath polymeric atoms.

Sight and sound going with permits to exhibit different realities and peculiarities to understudies, that is totally difficult to delineate during the standard talk: photographs have gotten with electronic magnifying instrument, dynamic models of natural atoms and so forth. Specialized method for show empowers to strengthening of speaker, to move a piece of data weight to the visual region.

Utilization of PC advances on instructing expects to change arrangement of view of talk materials by understudies. Understudies don't have to record all instruction material precisely, the appreciation of discourses of the teacher and combination of this perception by additional investigation of training materials after address gets the significant job.

Expanding job of free work requests from understudy's capacity to find important data, the job of division comprises of aiding them, to supply with proper training materials. In this present circumstance fundamental job worries to electronic instructive complex, made by educators in division. That is principal objective is cautiously choice and advancement of data, which creates course satisfied, as well as subsections interconnectedness: the fundamental sorts of natural responses, spatial designs of natural mixtures, specificities of construction and substance properties of normal biomolecules.

Compelling checking by the instruction quality by the entire cycle - fundamental characteristic of rating framework. Nonetheless, be noticed that execution that is with conventional strategies, would be essentially over-burdening for educators. In such manner, in division have been created set of test for each course module, which permits to execute testing in rush - test design, in controlling, yet and in guidance system with breaking down of results. Furthermore, customary control and testing, by creators group were introduced inventive kind of test undertakings about amalgamation of natural mixtures, which takes into consideration inconstancy choice. The errand of proposed test is set of exemplary, engineered task (to get compound X from compound A).

At the removal of testing understudy, will be set with 20 - 25 standard plans of change, by joining of them, could be accomplished wanted results, which indicated by task, even response can have a few right forms (Manufactured plans). Such a design of tests permits to envelop all segments of natural science, likewise permits to make complex undertakings, which is vital for understudies, for instance in the readiness of the coursework's and State Assessments.

Subsequently, by utilizing current instructive and academic advancements, conventional arrangement of training will get "the subsequent breath", obtaining more alluring as well concerning understudies (furnishes them with additional more prominent open doors for compelling free work) and for instructors (frees them from routine work and permits to carry out powerful control by schooling quality).

The mix of present day innovation in showing science has changed the homeroom, furnishing understudies with admittance to a really captivating, intuitive, and cooperative learning climate. While there are potential worries related with the utilization of innovation, obviously innovation mix in the science homeroom is fundamental in planning understudies for the advanced labor force. Subsequently, educators ought to endeavor to coordinate innovation into their instructing while at the same time keeping a harmony among customary and present day instructing strategies.

Advantages of Innovation Joining in Educating Science:

The combination of present day innovation in showing science has brought huge advantages to the homeroom. One of the essential advantages is the capacity to furnish understudies with a seriously captivating and intuitive growth opportunity. Advanced recreations and perceptions give a stage to understudies to investigate complex substance cycles and investigation with various factors, upgrading their comprehension of synthetic ideas. Furthermore, innovation has empowered teachers to give customized opportunities for growth to understudies through versatile learning programming, permitting understudies to learn at their own speed and get prompt criticism. Innovation has likewise given admittance to many advanced assets, for example, virtual research centers, digital books, and online data sets, furnishing understudies with admittance to immense measures of data that sounds inaccessible, really. Besides, innovation has given a stage to understudies to team up and speak with companions and educators, cultivating a cooperative learning climate.

Potential Worries Related with Innovation Mix:

Notwithstanding the advantages, there are potential worries related with the utilization of innovation in educating science. One of the essential worries is the chance of innovation supplanting conventional showing strategies, prompting an absence of involved experience for understudies. Also, the dependence on innovation might bring about understudies turning out to be excessively subject to computerized assets, thwarting their capacity to foster critical thinking and decisive reasoning abilities. Another potential concern is the absence of admittance to innovation in certain areas, prompting inconsistent admittance to computerized assets and open doors for understudies.

Conclusion: In summary, chemistry education research has demonstrated the benefits of incorporating innovative methods and technology into teaching. Active learning strategies promote deeper understanding compared to passive lecturing alone. Digital tools like simulations and visualizations allow students to directly interact with chemical concepts in new ways. Exposure to modern resources and collaborative problem-solving prepares learners for STEM careers and higher education. To continue engaging students and maximize learning outcomes in today's digital age, chemistry instructors should seek to judiciously adopt evidence-based active and technology-enhanced teaching approaches. With innovative methods that motivate and inspire, chemistry education can help students acquire both knowledge and skills for lifelong success.

References

1. Avliyoqulov N.X. "Practical bases of teaching module and pedagogical technology". B.: "Buxoro" 2000. 199 pages
2. Tashev I.A. Ro'ziev R.R. Ismoilov I.I. Textbook for academic lyceums and professional colleges "Inorganic Chemistry" T.: "Teacher" .2010. 287 bet
3. Muftaqov A.G. "General Chemistry." Textbook for students of academic lyceums and vocational colleges. T.: "Teacher", 2004. 235 p
4. Ishmuhammedov R.J. "Ways to increase the effectiveness of education through innovative technologies" TDPU. T.: "Science". 2004. 152 b.
5. Ulugbek Zokirov. Individual Features of Development of Information and Communicative Competence in Masters of Higher Pedagogical Education. The American Journal of Social Science and Education Innovations. № 3 (3), 486-491. (2021). <https://usajournalshub.com/index.php/taissei/article/view/2423/2314>
6. Zokirov U.M. "Improvement of the training process of students of the Faculty of Physical Education, specializing in wrestling" mag. Dissertation - FerSU 2020 25, 26, 27, 28.