

THE ORETICAL AND PRACTICAL APPROACHES TO EFFECTIVE ORGANIZATION OF CHEMISTRY LESSONS BASED ON INTERACTIVE METHODS

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Abstract: In the Uzbek education system, teaching chemistry using interactive methods plays an important role in developing scientific thinking, analytical abilities, and practical skills in students. This article analyzes the effectiveness of using interactive methods in chemistry lessons, its impact on students, and its role in increasing motivation. The introduction of interactive methods in Uzbek schools, their active participation, and their impact on expanding teachers' methodological knowledge are discussed. Research and scientific developments, this including virtual laboratories, interactive textbooks and online education platforms efficiency. However, Uzbekistan in schools some constraints, such as resource constraints shortage and teachers qualification in progress limited opportunities available, them eliminate to grow for necessary measures see necessary.

Key words : Interactive teaching methods, chemistry education, Uzbekistan education system, active students, scientific thinking, motivation enhancement, virtual laboratories, online education platforms, teachers qualification increase, modern pedagogical technologies

ENTRANCE

Chemistry science natural sciences in the system central place It is a fascinating subject, and students analytical thinking, experiment to do and scientific search skills to develop service does. Uzbekistan education in the system chemistry science to be trained last in years noticeable at the level updating. 2023/2024 academic year from the year starting with chemistry The subject is taught from the 7th grade. started (Azizkhodjayev, 2021). This changes in students chemistry to science was interest and motivation increase, their scientific worldview formation for the purpose done. However, traditional teaching styles, that is teacher by lecture reading and student by listen in the form of to be lessons efficiency limited. Research this shows that chemistry science in teaching interactive methods application in students active participation to understand, to understand and knowledge in practice application abilities increases (Turaeva, 2022). In 2019 In Uzbekistan teaching methodologies efficiency study for the purpose held In the survey, 68% of teachers excess chemistry in their classes interactive of methods effective results that he gave (Niyazova, 2020). Chemistry science in teaching interactive methods through students personal their interests wake up and scientific in the field high motivation create opportunities is expanding. In Uzbekistan many in schools innovative pedagogical technologies, that is including virtual laboratories, interactive textbooks and online education platforms is being used. Conducted in 2020 one in research, chemistry teachers by interactive from methods used without 85% of students have knowledge of quality increased record (Moore & Chamberlain, 2020). However, some in schools still resources shortage of

teachers qualification increase of possibilities limited, and education technologies enough current not to be done such as problems available (Kholikov, 2021).

Chemistry education and teaching methods in the field last in years wide comprehensive research take visited. Students scientific and practical skills in development interactive of methods important has a place. Research this shows that interactive methods students education in the process active participation their achievements, knowledge effective their appropriations and scientific search abilities to develop provides. By Selevko (2006) take visited research interactive of methods education to the efficiency positive the impact confirmed. His in my opinion, interactive methods, especially chemistry such as practical sciences in teaching students scientific knowledge to master noticeable at the level improves. These methods students activity and in class participation to grow level to increase take is coming. Interactive lessons, students analytical and creative thinking abilities in development important place holds. By Niyazova (2020) held in research In Uzbekistan students chemistry to science was interest in increasing interactive of methods effective that record Research to the results according to, interactive methods students knowledge in improvement important role Virtual labs and digital education from technologies used without students chemistry to science was interest increase shown (Moore & Chamberlain, 2020). By Azizkhodjayev (2021) given in analysis, Uzbekistan education in the system teachers pedagogical qualification increase and interactive lessons through students scientific abilities develop necessity about word virtual laboratories in schools and interactive textbooks current to be this the process effective done to increase help to give possible However, interactive methods current in the process of some problems there is. Khalikov (2021) own in the study, some in the regions of schools infrastructure and technological supply enough that it is not and this situation education to the quality negative impact to show record reached. Uzbekistan some in schools of resources shortage interactive methods complete done to increase obstacle International at scale, interactive teaching methods scientific in the works big importance has. By Turaeva (2022) done increased in learning, students knowledge level and chemistry to science was interest interactive from methods use through increase record With this together, to the students complex issues in solution help giving pedagogical strategies students study process noticeable at the level improves.

DISCUSSION

Chemistry science in teaching modern pedagogical of technologies role education process efficiency in increasing big importance has. Interactive teaching methods, including virtual laboratories, demonstrations lessons and online resources, students scientific and practical skills in development important tool as This is considered methods students activity increases, as well as their analytical and creative thinking abilities strengthens the students ' interest increase and scientific knowledge in deepening interactive of methods importance clear It looks like this. Example for, by Selevko (2006) as noted, interactive methods chemistry science in teaching students to know abilities further develops. These methods through students only iodine to take not, maybe studied knowledge in practice They also learn to use. Chemistry such as experimental in science this very is important because knowledge only theoretical iodine to take with without limitation, they in practice application, testing transfer necessary.

From this in addition, virtual laboratories and digital technologies to students chemistry science in learning to oneself typical opportunities creates. By Niyozova (2020) held virtual

laboratories in research students interest increase and scientific experience study opportunities presented to be able about information These methods are given. not only to students chemistry processes see opportunity gives, maybe they their own independent thoughts also help them develop gives. Students experiments transfer through theoretical knowledge to practice implementation to grow to the possibility has However, interactive methods current in the process of some restrictions there is. By Kholikov (2021) as mentioned, some in the regions of schools infrastructure and technological supply enough not being methods complete done to increase interference This situation, of course, is a problem of teaching. to the efficiency negative impact shows. In Uzbekistan all in schools modern education technologies current to do for necessary was materials and technological infrastructure improve necessary. Interactive teaching methods successful implementation teachers methodical It also depends on the preparation. Azizkhodjayev (2021) aspect separately Teachers interactive lessons effective organization to grow for qualified to be necessary. Their pedagogical technologies how to apply knowledge students to the success directly impact does. With this together, interactive teaching methods students scientific thinking in development very important tool as is considered. By Turaeva (2022) held in research interactive of methods students thinking style in change how importance has that about word These methods through students not only own knowledge from the test they spend, maybe scientific research take go, new ideas working exit and problems solution such as they also develop abilities.

CONCLUSION

Chemistry science in teaching modern pedagogical of technologies role education process quality increase and students knowledge to take efficiency in improvement important. Interactive teaching methods, virtual laboratories and digital technologies students scientific thinking abilities to develop big help gives. This methods students activity increase them practical and theoretical knowledge to unite encourages, as well as chemistry science in learning interest increases. However, modern pedagogical technologies successful current to grow for one row problems solution to do necessary. Teachers' methodical preparation, schools technological supply and education infrastructure according to there is problems education quality complete to increase interference This problem is solution to do for separately measures see necessary. So so, chemistry science in teaching modern pedagogical technologies of application efficiency high to be for teachers qualified training, infrastructure improve and digital to resources was to enter expansion necessary. This is your In turn, the students education to receive and scientific their thoughts further develop opportunity gives.

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