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INNOVATIONS AND BEST INTERNATIONAL PRACTICES IN TEACHING THE USE OF BIM TECHNOLOGIES IN URBAN PLANNING

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ABSTRACT

At present, several modern teaching methods are widely used in the educational process. The use of modern teaching methods ensures high efficiency in the teaching process. When choosing teaching methods, it is advisable to choose based on the didactic function of each lesson. The use of computer technology in teaching higher education students the topic "The use of BIM technologies in urban planning" remains one of the modern requirements.

KEYWORDS

Modern methods, BIM -Building Information Modeling, Architecture and building materials, AutoCAD, ArcGIS, Trimble Office, Credo.

INTRODUCTION

Modern multimedia computer programs and telecommunication technologies allow students to access information sources, electronic hypertext textbooks, educational sites, distance learning systems and other resources, and this allows students to think creatively [1-3]. While retaining the traditional course form, elements of computer analysis and modelling have been used in modern design methods and tools in the field of construction.

THE MAIN PART

With the help of automated graphics and mathematical representations, it is possible to identify a specific object with high accuracy, taking into account its performance characteristics and external conditions for future use. A new stage in the development of this line is to process the individual settings of the building and consider it comprehensive and comprehensively consider the addition of corrections to certain indicators and automatically change the properties of other components [4-9].

To do this, the lesson process should be organized rationally, the teacher should increase the interest of students, constantly encourage their activity in the learning process, divide the teaching material into small pieces and open their content. attack, working in small groups, discussion, problem situations, reference text, projects, role-playing games, etc., and encouraging learners to perform practical exercises independently.

These methods are also called interactive or interactive methods. Interactive methods are methods that activate learners and encourage independent thinking, learning at the centre of the learning process. When these methods are used, the educator encourages the

learner to actively participate [10-15]. The learner is involved throughout the entire process. The benefits of a learner-centred approach include:

- Reading and learning with higher educational effectiveness;
- High level of student motivation;
- Taking into account previously acquired knowledge;
- Adapting the intensity of reading to the needs of the learner;
- Support the initiative and responsibility of the learner;
- Learning by doing in practice;
- Creating conditions for bilateral feedback.

In addition, as distance learning is now introduced, every educator is required to know computer technology. Each lesson requires the preparation of content, taking into account the type of lesson. Teaching the topic of topographic symbols using computer technology gives positive results compared to traditional methods, the quality of teaching, the acceptance of the information provided by students and pupils, and the stability of the acquired knowledge prevail [16-21]. The creation of models in three-dimensional (3D) space using computer technology shapes students' spatial perceptions and prolongs the duration of storage of the acquired knowledge in memory. Modelling and digitization of events and processes are one of the current issues in the field.

- To teach using computer technology in the classroom;
- To prepare lesson plans, electronic methodical instructions and visual aids, which are necessary for the course;

- To make the course process aesthetically superior;
- Helps to increase students' interest in the lesson and keep attendance high.

Conducting lessons using visual and multimedia textbooks or an online database, such as 'online libraries', ensures that lesson content reaches students and learners faster and is more engaging [20-22].

In this dissertation, the existing programs were analyzed and the place of each of them was determined. In addition, this software-pedagogical tool includes video and photos of various materials on the subject and other solutions to other problems created in AutoCAD, ArcGIS, Trimble Office, Credo, using IceCreamScreenRecorder programs, and for students to study at the university. <https://webdars.nuu.uz/> and <http://ettt.nuu.uz/platforms>.

CONCLUSION

Work The purpose of the lectures and practical exercises on "The use of BIM technologies in urban planning" in the speciality 340000 - "Architecture and building materials", 5340100 - "Architecture" in higher education institutions of the republic Improving the teaching of students based on modern scientific and methodological support.

The main task is to explain to students the new scientific and practical achievements in the field of Architecture and "Interior and Equipment" and the coordinate systems used in "Design" in the educational process based on advanced pedagogical technologies, to strengthen students' knowledge acquired during the theoretical course. and generalization, as well as the formation of the necessary production skills in the application of this knowledge in practice. This topic is explained to students in lectures and practical classes

with specific examples. Given that this subject is the main general subject for students studying in this area, it is very important to apply the above-mentioned interactive methods in the teaching process.

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