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METHODS OF USING MEDIA EDUCATION AND TELECOMMUNICATION TECHNOLOGIES IN TEACHING THE TOPIC "VISUAL MOTION OF THE SUN AND STARS"

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METHODS OF USING MEDIA EDUCATION AND TELECOMMUNICATION TECHNOLOGIES IN TEACHING THE TOPIC "VISUAL MOTION OF THE SUN AND STARS"

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Annotatsiya: Ushbu maqolada bugungi kundagi astronomiya ta'limining zamonaviy dasturiy vositalari va ulardan foydalanish usulari keltirib o'tilgan. Ushbu zamonaviy dasturiy vositalarni ta'lim jarayoniga qo'llash bo'yicha tavsiyalar va afzalliklari yoritilgan. Ta'limning zamonaviy dasturiy vositalari qo'llanilgan eksperimental dars natijalari ko'rsatilgan.

Tayanch so'zlar: media, mediatexnologiya, “Katta ayiq soati” simulyatori, Quyoshning yillik ko'rinma harakati simulyatori, Yoritgichlarga bo'lgan masofalarni hisoblash simulyatori.

Аннотация: В этой статье представлены современные программные средства для астрономического образования и его методы использования. Приведено рекомендации и преимущества применения этого современного программного средства в образовательном процессе. Показано результаты экспериментального курса с использованием современных программны средств.

Ключевые слова: медиа**,** медиатехнология, симулятор “Большие медвежьи часы”, симулятор “Годовое видимое движение солнца”, Симулятор “Расчет расстояний до небесные светила”

Annotation: This article presents modern software for astronomical education and its methods of use. The recommendations and advantages of using this modern software in the educational process are given. The results of an experimental course using modern software are shown.

Key words: media, media technology, "Big Bear Clock"simulator, "Annual apparent movement of the sun" simulator, “Calculation of distances to heavenly luminaries” simulator.

Introduction: In today's age of information technology, all areas are experiencing rapid development. In order for these industries to function effectively, industry professionals are developing innovative development principles that blend information technology. Similar work is being done in the field of education.

If we look at the education system of developed countries, media education has a special place in it. In today’s modern world, media technology tools (press, television, theater, film, radio, voice recording, internet system and e-learning tools) are hard for you to imagine. Over the last half century, the media has played a special role in human life. Media has become one of the most important areas of life in the world today.[2]

Literature review: Human vision reflects more than 80% of information in memory. Therefore, a person's ability to see plays an important role in the acquisition of knowledge.[4] The formation of knowledge, skills and abilities through vision is one of the main tasks of media education. Factors for the effectiveness of media education can be explained as follows:

- Demonstration;
- save time;
- protection of students' minds from harmful information on the Internet;
- to increase students' interest in science;
- Effective use of students' free time (e-books, game programs based on the study of science, etc. ...) [3].

From the above information, it can be seen that if media education is organized properly, it will help students to have a more complete picture and knowledge of the subject.[5] In this paper, we present a number of recommendations for teaching astronomy in the 11th grade of secondary schools using media education [1].

We know that in the teaching of "Spherical and Applied Astronomy" of astronomy, students may have problems with imagination. This is because not all students have the same imaginative skills and do not fully visualize a particular process visually. If we

want to explain through evening observations, this causes a number of inconveniences.[6] These inconveniences include:

- Stars are not well visible at night due to high light in schools located in urban areas. Therefore, it is required to take students to designated areas outside the city and conduct observations. Repeated observations of this kind cause inconveniences;
- astronomical observations require more time. For example, if we want to observe the movement of stars, it will take at least 1-2 hours. Because the Earth moves slowly around its own axis, the visible movement of the stars also takes place slowly. It is difficult to imagine. This also causes peculiar inconveniences;
- In explaining the annual apparent motion of the sun through observations, it takes a very long time for the imagination to be fully formed. Since the daily displacement of the sun is so small, it is also difficult to distinguish it [4];

We are far from suggesting that observations should be less organized, enumerating these and similar inconveniences. But through the software tools of media education, it is possible to form a more complete picture of students in the short term about the movement of celestial bodies.[7] A computer, a projector, and the necessary software are required to organize this lesson. We want to talk about a few such software tools below.

Research methodology: The Big Bear Clock simulator is designed to study the diurnal movements of the stars, in which the diurnal and year-round motions of the stars can be observed at a specific time and in accelerated frames (Figure 1) [1].

Figure 1

Through the simulator of the annual apparent motion of the Sun, it is possible to form an idea of the diurnal and annual apparent motion of the Sun. With its help we can get information about the location of the Sun at any time of the year (Figure 2) [1].

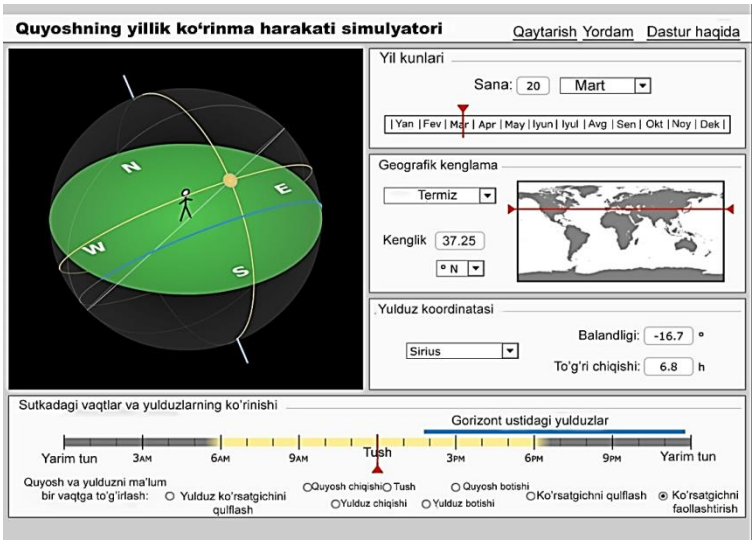

Figure 2

A small angle calculation simulator is quite handy when explaining the calculation of distances to lights. To use this, the "distance" and "diameter" parts are changed.[8] This changes the diameter of the sphere and the distance between the observers. The angle is calculated in arcsec (arksekans). The sequence is the ratio of the hypotenuse to the catheter opposite the angle (Figure 3) [1].

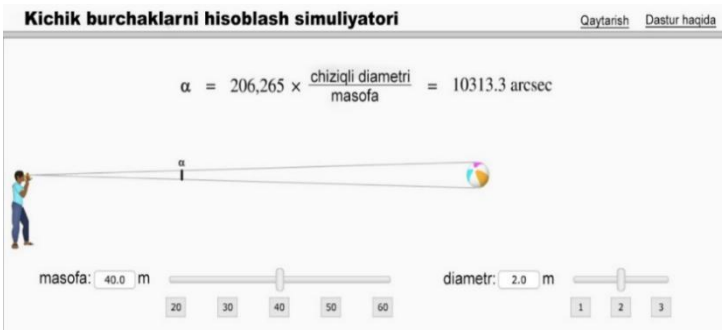

Figure 3

Using the above methods, we show the results of teaching the subject "Astronomy and Astrophysics" to students of the 3rd stage of Physics 5140200 of Termez State University on the topic "Visual motions of stars, Sun, Moon and planets."[9]

Analysis and results: In conducting this experiment, we used it in the teaching process of schools in Jarkurgan district of Surkhandarya region. This experience coincided with October 2019. Because the above topic corresponds to this time according to the calendar plan. In this experiment, Group 100 provided interactive lessons to 100 students using media, while Group B provided 100 students with classical lessons. Students 'knowledge of the topic was assessed by completing 20 test items on the topic.

When the results were analyzed, the following indicators were given: 21 out of 100 students in group A mastered 86-100%, 34 71-85%, 41 55-70%, 4 0-54%, on average 75.59%. Of the total 100 students in group B, 8 mastered 86-100%, 39 mastered 71-85%, 39 mastered 55-70%, and 14 0-54% mastered an average of 61.96%. A graphical representation of the results is shown in Figure 4.[10]

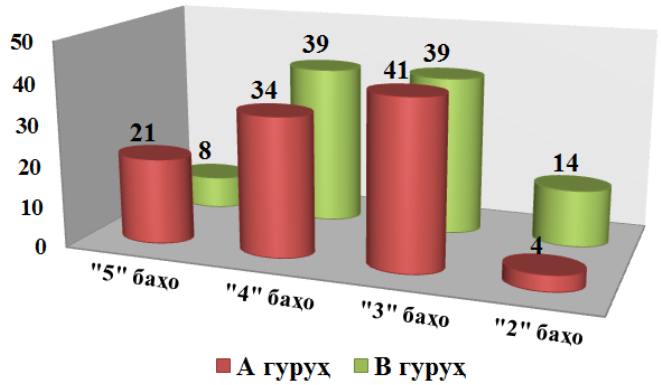

Figure 4: Graph of the dependence of the number of students on the mastery index

Conclusion

In summary, the above software tools help to broaden students' understanding of astronomy.

These programs not only increase students' knowledge in the field of media, but also shape their skills in working with software pedagogical tools.

By working with the above software pedagogical tools, the student will gain relevant fundamental comprehensive knowledge.

Based on the results of experiments, we can say that such software pedagogical tools not only gain strength and time, but also have a positive impact on the quality of students' knowledge. Media education technologies also play a special role in educating today's young generation.

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