International Journal of Early Childhood Special Education (INT-JECS)
DOI: 10.48047/INTJECSE/V14I7.271 ISSN: 1308-5581 Vol 14, Issue 07 2022

THE PLACE AND ROLE OF QUALITY ISSUES IN THE HUMANIZATION OF ASTRONOMICAL EDUCATION

Dadaboeva Feruzakhan Olimjonovna
Associate Professor of Kokand State Pedagogical Institute, Ph.D.
Ibragimova Ranokhan Khamdamovna
Senior teacher of Kokand State Pedagogical Institute
Meliboev Mukhtarjon
Senior teacher of Kokand State Pedagogical Institute, ph.-m.f.n.

Annotation; This article is dedicated to quality tasks astronomy which ary integral part of the organization of practical training. It is shown that they are on important tool in the humanization of astronomical education and aims to achieve the avaitability of educational material.

Keywords: Sferical astronomy, quality tasks, practical skills, humanitarial potential, humanitarization.

It is known that a number of achievements made by astronomy in recent years are causing its practical importance to increase. Therefore, clearly defining the structure, content and ensuring the coherence of this subject in the system of continuous education imposes a number of tasks on the field of education. The demands placed on the mentioned problems in the continuing education system show the need for the teacher to effectively organize the strengthening of students' knowledge, learning and skills on the basics of this subject, especially the formation of their scientific outlook on the environment. The idea of humanitarianization of education is being promoted to ensure that the solution to these problems is effective.

The idea of humanism in education plays an important role in the implementation of such factors as the idea of its individual orientation, respect for the personality of the student, and not being indifferent to his interests. Humanization in education promotes teaching on the basis of humanization of the content of all subjects in the plan of the educational institution, including natural and scientific subjects .

Here, the idea of "humanization of educational content" can be interpreted in two ways: First, humanization of educational content means the application of methods developed in natural sciences to social sciences. This condition is associated with figurative thinking [1].

Second, the content of optional natural-scientific subjects (including physics, astronomy, chemistry, biology, etc.) has a strong humanitarian content, as well as social-humanitarian subjects, and is not obvious at first glance. In the teaching of natural sciences, any approach related to the manifestation of the "hidden" content of humanization in them, that is, the organization, humanization of natural sciences (including astronomy) through the use of all the tools, methods and forms necessary for this . it is said that it plays an important role in the full implementation of the most necessary educational and developmental functions of teaching today .

"The goal of humanizing the school astronomy course is to turn this educational subject from an abstract view into a course that arouses interest for every student and makes him feel his participation in satisfying human needs [2]," says Methodist scientist M. Mamadazimov.

The well-known methodologists V. G. Razumovsky [3], L. V. Tarasov [3], E. P. Levitan [4], M. Mamadazimov[5] have been conducting research for many years.

According to Methodist scientists, the content of theoretical and practical training in astronomy, organized by the teacher enriched with humanitarian ideas, is one of the important didactic requirements.

In realizing the humanitarian potential of astronomy in teaching, the teacher is required to adhere to the following principles :

- in the description of the course, special emphasis should be placed on its humanitarian and worldview aspects;
- in-class and out-of-class activities should be limited to all examples and problems recommended for the purpose of strengthening students' knowledge - relatively light exercises and quality problems;
- the description of the educational material should be free from lengthy reasoning, complex mathematical calculations and formulas ;
- extensive use of the teacher, instructional materials, and historical documents during the lesson ;
- in learning the basics of astronomy, frequent reference to the astronomical content of works of art and science fiction ;

class and extracurricular activities .

of practical training in astronomy, as in all natural sciences, is of particular importance in the deep learning of educational materials . The fact that the students have mastered the subject material well is evident in their ability to perform practical exercises , especially in the process of solving problems .

Astronomical problems are divided into qualitative and computational problems , as in physics . The use of complex calculation processes in quality problems greatly helps the growth of students ' thinking ability in the process of solving them, systematizes the application of the acquired theoretical knowledge , and plays a major role in the formation of problem-solving skills in students . Therefore, it is appropriate to start solving problems from qualitative problems and move to more complex - computational problems .

At this point, we considered it permissible to dwell on the place and role of quality issues in education, which are gaining importance in teaching.

200 years ago, new types of physics problem solving appeared in Russian schools. In the past period, their names have been differentiated many times: "logical issues", "ironic issues", verbal issues, quality issues. "practical problems", "explanatory questions", "complex questions", "examination questions", "problem-questions" and others. According to M.E. Tulchinsky, the well-known author of the collection of quality issues, "The variety of names of these types of tasks reflects their methodological qualities. And the name reflects some aspect of each task" [8].

The modern names of the problems emphasize their main features, when solving the tasks, first of all, attention is paid to the qualitative aspects of the studied problems. The solution of qualitative problems is not given in most textbooks. Its solution is based on knowledge of physical and astronomical laws, based on logical thinking, based on facts, theory, graphs or experiments, and if necessary, actions are also used. Quality issues are distinguished by the following characteristics:

- to activate students' knowledge before presenting new material or posing a problem;
- for homework, repeating and summarizing materials in one lesson or topics studied;
- competition, quiz, non-standard lessons (competition lesson, didactic game lesson, etc.);
- to receive information from various sources - textual, graphic, table, picture, etc.;
- in the formation of the ability to apply students' knowledge to practice;
- For independent and supervised work, you can use the optional form for graduates in the above-mentioned points.

Qualitative questions are different from questions that test students' knowledge of physics and astronomy. As you know, solving a problem means achieving a set goal. Assignment, a question that needs to be solved on the basis of certain knowledge and thinking, is one of the methods of teaching and testing. From a psychological point of view, a problem is a problem, which is understood as an activity that invites creative thinking by the subject.

In methodology, a physical and astronomical problem is understood as a problem solved by physical and astronomical methods with the help of basic laws and logical thinking, mathematical operations and experiments.

Quality issues have the following educational, educational and developmental purpose:

1. The problem deepens and strengthens theoretical knowledge. It ensures students' activity during the lesson.
2. Problem solving teaches students to work independently, introduces the methods of modulating the physical and astronomical situation (situation), forms the skills to apply the acquired theoretical knowledge to practical life, and is of great importance due to its features such as career guidance.
3. Problem solving develops students' intelligence. Problem solving and analysis can be done in several ways, and it is important to find the right answer.
4. In the course of the lesson, quality is important as it solves problems, creates practical skills in students and is goal-oriented. Quality issues require the necessary knowledge and strong observation.

Achieving the effectiveness of teaching astronomy is done through a number of didactic principles. One of them is that all examples and problems initially recommended for strengthening students' knowledge should be limited to mostly qualitative problems, aiming at relatively light exercises.

Taking this into account, we recommend to solve the following qualitative problems with interesting elements as examples in the lessons, using the map of star movements, astronomical models and direct observations, in order to form the necessary knowledge, training and skills in astronomy.

Problem: (M.M. *) If the southern point of the mathematical horizon and the geographic latitude of the observation point ? are known, how to find the north pole of the world in the sky?[7]

Given:

S is the horizon southern point

?- of the observer geographical

extension

Solution:

It is known that the observer's meridian passes through the S south and N north of the horizon plane, the Z zenith, the P north and P / -south poles of the universe (Fig. 1).

h p -?

The algorithm for solving the problem is recommended as follows:

1. Draw a diagram showing the condition of the problem (Fig. 1).
2. Select the coordinate system.
3. Determine the points h p , ? ,z,P,S.
4 . Write the connections between them.
5. Perform calculation operations.

6. Write the result.

1 : It is known that in this case, the north point of the horizon lying diametrically opposite to the south point of the mathematical horizon given in the problem condition is found. Along the meridian of the sky, the north pole of the world lies at an arc distance equal to the magnitude of the given geographical extension from the north point to the zenith . Because the height of the north pole of the universe is equal to h p = ? .

2 : The height of the North Pole of the Universe is h p = ? (Fig. 1). The arc distance from the north pole of the universe to the zenith represents the zenith distance of the universe pole z p . Then, since the height of the lamp and the arc distance from the zenith are connected in the form z r + h r = 90 0

....

Materials are taken from the collections of M. Mamadazimov (M.M.) and B.A. Vorontsov-Velyaminov (V.V*.).

p + h p =90 0 for the pole of the universe . Accordingly, z p = 90 0 - h p = 90 0 - ?. From the distance of the southern point of the horizon S from the zenith equal to 90 0 , the distance from the southern point of the mathematical horizon plane to the northern pole of the universe is found using the diagram as follows:

= 90 0 + z is equal to p = 90 0 + 90 0 - ? = 180 0 - ? .

Problem : Which of the main points, lines and circles of the celestial sphere change depending on the position of the observer on the Earth? Change the reason explain _

The algorithm for solving this problem is as follows:

1. Draw a sky using the sphere model .
2. Determine the main points and circles from the model and drawing (Fig. 2) .
3 . Write the connection between the Pole, Equator, Ecliptic, Equinox, East, West, North, South points.
4. Write the conclusion and result .

This problem is easily solved by showing the model of the celestial sphere. Because by adjusting the model for the desired geographic extent, the student will clearly see and imagine the change of the main points, lines and circles represented in it, he will find the correct answer (Fig. 1). The latitude of the north polar point of the universe, the celestial equator and the ecliptic plane to the horizon - changes depending on the geographic latitude of the observer's observation point on the Earth's surface. According to the theorem about the height of the pole of the universe h p = ? .

In that case, the angle formed by the celestial equator plane with the mathematical horizon plane is TH=90 0 - ? , and the angle formed by the ecliptic plane with the mathematical horizon plane is, according to the drawing, ?=90 0 - ? + d .

Problem: On a given day, at what point on the Earth will the observer have the same length of shadows directed to the four mutually perpendicular sides of the horizon?

When solving this problem, we find the answer by analyzing the same as the previous problem. Answer: the observer will be at the pole of the Earth, because there on any day (from 21.03 to 23.09 the height of the Sun is equal to its declination, and its daily apparent movement is parallel to the mathematical horizon. Consequently, the length of its shadow is the same throughout the day).

Problem: At what point on the earth will the windows on all four sides of a house with a square base face south?

At the north pole of the earth.

Problem: How to determine the sides of the horizon (north, south, east and west) by observing the starry sky?

From ancient times to the present, stars are the basis of reliable orientation on the surface of the Earth. Looking at the stars, people clearly found the sides of the horizon. There are many ways to get your bearings. Let's look at some of them.

In this case, finding the position of the pole star in the sky is of particular importance, because it is always visible from the northern side of the horizon. At the same time, it helps to determine the rest of the universe. Finding the position of the pole star by looking at the stars is usually done by looking at the stars and constellations. For this, it is necessary to remember well the constellations around the pole star and their situations.

The most convenient of these is to find the pole star through the dip in the constellation Ursa Major. At midnight in spring, it is directed to the east, in summer to the south, in autumn to the west, and in winter to the north.

When these stars are always above the horizon during a free month in the territory of Uzbekistan, two stars Alpha and Beta of the Big Dipper (they are among the brightest stars of the constellation) are found on three sides of the bowl, and a line is drawn towards the mouth of the bowl. If placed five arcs apart from the distance between the alpha and beta stars along this line, the relatively bright star located near it will be the pole star . This star is the brightest star in the constellation called Ursa Minor, and is actually only 58 / from the north pole of the Universe, so named because there is no star closer to the north pole of the Universe.

Other constellations can also be used as a guide. For example, at midnight in May, the Taurus constellation is at the southern point, the Swan and Eagle constellations are observed in June, and the Quadrant and Pegasus constellations are observed at this point in September. The sides of the horizon can also be easily determined with the help of the displacement map of the stars.

Problem :(V.V. *) If the convex side of the crescent Moon is on the right side in the sky and is close to the horizon, which side of the horizon are you looking at?

In this case we will be looking west. This position of the crescent moon indicates that the Sun is to the right of the Moon and above the horizon, in the western part of the sky. B then the Moon is between its new moon and its first quarter.

Problem : (V.V * .) Today at midnight (24 h) the Moon reached its highest peak . What time will the Moon be at its zenith tomorrow ?

If the Moon was at its zenith at midnight, its next zenith will occur more than a day later, approximately 52 minutes before midnight , because the Moon moves in the celestial sphere in the opposite direction to the direction of the diurnal rotation of the sky, making about 13 0 degrees in one day. traverses the arc .

REFERENCES

1. Pedagogy encyclopedia. Volume I. - T.: "National Encyclopedia of Uzbekistan" State Scientific Publishing House. 2015 - B. 230-236.
2. Mamadazimov M. Maktabda astronomy of Ta'limi. - T .: "Okityvchi" 1994 -B. five.
3 . Razumovsky V.G., Tarasov L.V. Humanitarianization of natural education// Questions of Philosophy. 1989. No. 4.
4. Levitan E.P. Humanization of school astronomy // Earth and the Universe. - 1983. No. 5. P. 52-55.
5. Mamadazimov M.M., Dadaboeva F., Humanization of natural sciences is one of the important principles of education. - J.: Talim, fan va innovation - No. 2, 2015. pp.24-26
6. Vorontsov-Velyaminov B.A. _ , M.M. Dagaev and others. Methodology of teaching astronomy in secondary school (translated by M. Mamadazimov) - T. : "Teacher", 1991
7. M. Mamadazimov. Problems of spherical and practical astronomy - T.: "Teacher", 1977.
8. Chiganashkin V.M., The role and place of qualitative problems in physics. - Physics at school. No. 1, 2018. P.55.
9. Mamadazimov M. The principle of historicism as a means of humanitarianization of astronomical education// Pedagogical education.- 2001. No. 4. S. 21-25.
5. Dadaboyeva, F., and R. Ibragimova. "SOLVING QUALITY ISSUES IN ASTRONOMY IN HUMANITARIAN EDUCATIONAL INSTITUTIONS." TERMIZ STATE UNIVERSITY, MINISTRY OF HIGHER AND SECONDARY SPECIAL EDUCATION OF THE REPUBLIC OF UZBEKISTAN : 301.