

## PEDAGOGICAL PRINCIPLES OF IMPROVING THE TEACHING METHODOLOGY OF THE FUNDAMENTALS OF TOPOGRAPHY AND CARTOGRAPHY IN INNOVATIVE EDUCATIONAL CONDITIONS

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**Abstract.** This article presents ideas on the theoretical foundations, specific features and pedagogical views of improving the methodology of teaching topography and cartography basics in the conditions of innovative education.

**Key words.** Topography, cartography, innovation, method, pedagogical technology, brainstorming, Case study method, chain of terms, pedagogical principles.

The use of the program "Eclipse Crossword" in the teaching of "Fundamentals of Topography and Cartography" in higher education institutions increases students' interest in this subject, independent research in the subject, drawing conclusions, and deeper understanding of the meaning of concepts and terms. will help.

Also, the crossword puzzle program is a program that helps students increase their vocabulary, and is a very convenient and effective electronic educational resource for forming their terminological literacy. By using this program in the teaching of "Basics of Topography and Cartography", students will expand their knowledge of place names, learn geographical terms and concepts quickly and easily, and keep geographical terms in the memory of students for a long time. During the use of crosswords developed on the basis of this program, students work on crosswords with pleasure, get acquainted with new geographical concepts and terms. At the same time, they learn to think logically, correct stylistic and grammatical errors in words. It is necessary to follow certain principles when creating crosswords using this program.

Rules that must be followed in the crossword puzzle program

1. A crossword puzzle grid is not allowed to have filled cells.
2. Random combinations and intersections are not allowed.
3. Secret words must be nouns in the nominative case.
4. Two-letter words must have two intersections.
5. Three-letter words must have at least two intersections.
6. Abbreviations are not allowed.
7. It is not recommended to get a large number of two-letter words.

#### Benefits of Using Eclipse Crossword in Teaching General Science

1. It allows to explain in detail the complex topics of "Fundamentals of topography and cartography", to easily master the terms and concepts in them. For example Relief. Relief factors. Geotexture, morphostructure, macro, meso and microrelief forms. the subject of hypsographic curve contains concepts and terms that are more difficult for students to master. Using this program allows students to master the subject thoroughly.
2. The geographical terms and concepts used in the crossword must be clear. Therefore, it is ensured that students quickly memorize geographical terms and concepts and their meaning.
3. Students' abilities of thoroughness, activity, resourcefulness, attention, memory, logical thinking, speech develop.
4. Students refer directly to geographic maps while working with crosswords. This will help students to develop the skills of working with geographical maps.

#### Forms of working with a crossword puzzle:

When used during independent educational activities of students, in work outside the auditorium, in extracurricular activities: it helps to develop the ability of students to learn learning material independently and quickly. Students independently formulate questions correctly and accurately, create a crossword

puzzle in print and electronic form, contribute to the development of their creative abilities.

It is recommended to be used during the course of the lesson: repeating the topics covered, at the stage of summarization: at the five-minute test and at the stage of strengthening the topic, when working with the terms and concepts of science on a certain topic, at the stage of learning a new topic.

Also, when using this program, it is recommended to integrate geography with other subjects, especially English. Because through this, we will contribute to the formation of students' skills in learning foreign languages. In this, students will also learn how to name geographical terms, terms and toponyms in English.

In the world experience, great attention is paid to the use of interactive teaching methods, the development of didactic materials and electronic educational resources, and the improvement of the effectiveness of educational activities using the possibilities of information technologies. In particular, electronic education has developed in US schools, from which students have the opportunity to learn at a distance and self-assess using online standard and non-standard tests through the network. It is also possible for parents to monitor and analyze their children's knowledge of science online. According to the US National Center for Education Statistics, today 77% of educational institutions use information technologies on the Internet.

In the period of 2001-2005, 42 regional distance education centers of the Russian Federation were provided with information and communication devices for teaching through the Internet, and several educational portals were created in order to develop unified information education. , more than 10,000 e-learning resources are collected in these created portals.

### LIST OF REFERENCES

1. Kuychiyeva M.A. Use of Interdisciplinary Relationships In The Formation Of Competences In Biology Students // CONVERTER 2021 [www.converter-](http://www.converter-)

- [magazine.info](https://magazine.info). - P. 485-489. (№10. ISSN:0010-8189). (subscription@converter-magazine.info)
2. Kuychiyeva M.A. // Organization of Experimental Works on the Development of Professional and Methodical Competence of Future Biology Teachers // Eurasian Journal of Learning and Academic Teaching. Open Access, Peer Reviewed Journals. 2022. ISSN (E): 2795-739, - P.19-21. (№7. SJIF; IF-8.115) ([www.geniusjournals.org](http://www.geniusjournals.org))
  3. Kuychiyeva M.A., Eshmatova D. Development of Professional and Methodical Competence of Future Biology Teachers in Extracurricular Activities // Web of Scientist: International Scientific Research Journal. 2022. ISSN:2776-0979, - P. 617-621. (№12. SJIF; IF-7.565). (<https://wos.academiascience.org>)
  4. Akerson, V. L. & Flanigan, J. (2000). Preparing preservice teachers to use an interdisciplinary approach to science and language arts instruction. Journal of Science Teacher Education, 11: 287-313.