ГЕОГРАФИЯ – GEOGRAPHY

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INTEGRATED LEARNING IN TEACHING MODERN GEOGRAPHY

Annotation. This article deals with the role of integrated education in the context of teaching modern geography. The integration of geographical knowledge with elements of other scientific disciplines serves as a key mechanism for developing students' in-depth knowledge of complex phenomena of the modern world. The advantages of this approach include the formation of critical thinking, the development of analytical skills and the application of knowledge in real-world scenarios. Examples of successful integrated lessons covering topics such as cartography, natural area, and biosphere are given. The article also examines the problems and prospects of the introduction of integrated education in geographical education, and also emphasizes its importance for preparing students for the difficult tasks of the present time.

Keywords: integrated lesson; natural area; modern geography.

Introduction

Modern education is facing constant challenges that require new approaches to teaching. In a rapidly changing world where the boundaries between sciences are blurring, it is important to ensure that students not only know the facts, but also the ability to apply and integrate them in various contexts. This is especially true in geography teaching, where an interdisciplinary approach can significantly enrich the learning process. Integrated learning is a methodology that combines various fields of knowledge within a single curriculum. As for geography, it can include a combination of geographical data with elements of geology, ecology, economics and sociology. This approach allows students to gain an understanding of the broad context and interrelationships between various aspects of our world.

The advantages of integrated geography education.

Deep understanding: Integrated learning helps to form a deep understanding of geographical phenomena, which allows students to view them from different perspectives.

Developing Critical Thinking: Students involved in the comprehensive study of geography develop critical thinking by analyzing information from various disciplines.

Preparing for real challenges: An integrated approach allows students to apply knowledge in real situations, which facilitates the transition from learning to professional activity.

Having studied the work experience of researcher Stephanie Decker (Mathematics and Geography: Teaching basic Communication), one can note the positive aspects of using an integrated form of education. In his work, Decker gave several examples of successful integrated lessons. The easiest way to integrate these two subjects is to use Blattner's worksheets as teaching aids. Blattner's company has prepared more than 70 worksheets for teaching geography and mathematics. The worksheets first introduce a mathematical concept, and then practical geographical applications are allowed. A new concept is described, examples are provided, and students can develop their newly acquired abilities. Examples were conducted on the topics “Cartogram of the Great Compromise”, “Assessment of the ratio of water to land".

In the first lesson, students used the data to create an accurate cartogram. A cartogram is a type of map in which the actual size and shape are distorted to symbolize some other data. In this exercise, students drew cartograms of the population of the thirteen original states. Using online data provided by Polve's online lesson plan, students have created a way to represent the population in their cartogram. The students then decided what form the states should take, given that it should roughly resemble the actual shape of the state.

By studying the data and completing the cartogram, the students determined which states were "big" and "small" during the Great Compromise.

An example of the integration of mathematics and geography into the curriculum is also given with the work of David Hicks and Jesse Wilkins in the journal "Teacher of Mathematics" of the National Council of Teachers of Mathematics. They propose a methodology that involves collecting data based on an arbitrary sample, interpreting this data and drawing conclusions about the Earth's surface. The question is how much of the earth's surface is covered with water and how it is deformed as a result of using several common cartographic projections.

This article discusses the effectiveness of the introduction of integrated learning in the teaching of modern geography. To conduct a full-fledged study and obtain an objective result, we used a qualitative method in the form of focus groups.

Methods

In this direction, as an focus group, classes on the discipline "Physical Geography of Kazakhstan" were held in one of the schools in Aktobe, in grades 8 "A" and 8 "B". Topics such as the Natural Area, ecosystem and biodiversity were considered.

Purpose of lesson:

To study the flora and fauna of natural areas of Kazakhstan through the prism of ecology and biogeography.

Lesson stages:

The theoretical part. The teacher talks about the characteristic species of plants and animals that live in each natural zone: steppe, desert, forest-steppe, mountainous areas.

Ecosystem analysis. Students analyze the impact of climatic conditions on the flora and fauna of each zone. For example, drought-resistant plants and species adapted to extreme conditions are represented in the deserts of Kazakhstan.

Group work. Each group of students is assigned to explore a certain natural area using textbook materials and additional sources (Internet, scientific articles). Students should identify the unique features of the flora and fauna of their area and prepare a presentation.

Presentation of the results. The groups present their research and discuss how natural conditions affect biodiversity and ecosystem connections.

Results:

Students acquire knowledge about the biodiversity of natural areas of Kazakhstan, develop skills in research and analysis of biogeographic data.

At the beginning of the lesson, we discussed the concept of "natural zones" and their significance for biology. They emphasized how natural areas affect the diversity of living organisms.

Geographically, the main natural zones of Kazakhstan and plants and animals living in these zones were discussed (Fig.1).

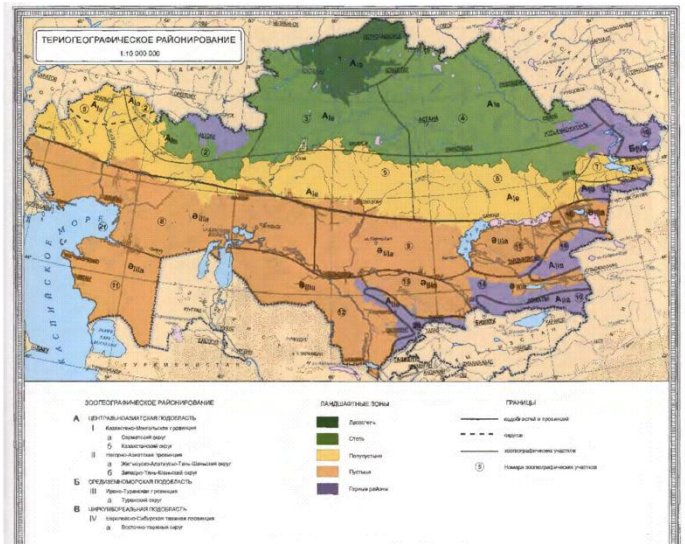

Figure 1. Natural area of Kazakhstan.

On the ecological side, ecosystems existing in various natural zones and the effects of climate and geography on biodiversity and adaptation of living organisms were discussed. In the biological part, we investigated the adaptation of plants and animals to the conditions of specific natural zones and biological survival strategies in various climatic conditions.

The practical part of the lesson.

The students were divided into several groups, and described the natural areas in all aspects. They drew a map of the Natural Zones of Kazakhstan and indicated the plants and animals living in these zones on the map.

In the final part of the lesson, the importance of preserving natural areas for biodiversity and ecosystems was noted. The issue of how students can contribute to the preservation of the environment and the preservation of natural areas was discussed.

Discussion

The findings from this study reinforce the value of integrated learning as a pedagogical strategy in the field of geography. By combining elements from ecology, biogeography, mathematics, and cartography, integrated lessons enable students to build a well-rounded understanding of geographic concepts and their real-world applications. As demonstrated in the practical examples with focus groups, students not only gained factual knowledge about Kazakhstan's natural zones but also developed skills in research, collaboration, and analysis that are essential for modern education.

One of the most compelling observations is that integrated learning, particularly when supported by hands-on activities, enhances students' engagement and motivation. Students in this study displayed enthusiasm in group projects, and their ability to retain information improved through collaborative learning activities. This aligns with studies like those of Hicks and Wilkins, who showed that interdisciplinary approaches involving data interpretation and practical applications can increase comprehension and retention. Furthermore, such approaches encourage students to draw connections across different disciplines, thus promoting the development of higher-order thinking skills such as synthesis and evaluation.

Despite these advantages, integrating various subjects in geography education presents notable challenges. Many teachers lack the resources, training, or support to successfully implement integrated learning strategies. As noted in our research, teachers require ongoing professional development in both geography and interdisciplinary teaching methods to effectively adopt these approaches. Another challenge is curriculum rigidity, which can restrict opportunities for cross-disciplinary instruction. Implementing flexible curricula that allow educators to customize their teaching methods could help overcome this barrier and foster more integrated learning experiences.

Additionally, differences in students' learning styles and levels of prior knowledge can impact the effectiveness of integrated lessons. Some students may struggle with complex, multifaceted tasks that require understanding across multiple subjects. Tailoring lessons to accommodate different learning paces and providing scaffolding resources can help address these difficulties, ensuring that all students benefit from integrated instruction.

Conclusion

This study underscores the significance of integrated education in geography, highlighting its potential to cultivate a comprehensive understanding of the complex and interconnected world. By bridging disciplines within a single curriculum, integrated learning enables students to approach geographic phenomena with a holistic perspective, fostering critical thinking, analytical skills, and practical knowledge application.

The benefits observed, such as increased student engagement, improved retention, and enhanced interdisciplinary thinking, suggest that integrated learning should be prioritized within geography education. As global challenges become increasingly

complex, students require not only factual knowledge but also the ability to analyze, interpret, and apply information across contexts. Integrated geography lessons are therefore essential for preparing students to navigate the complexities of the modern world.

Future efforts to incorporate integrated education in geography should focus on providing teachers with adequate resources, training, and curricular flexibility. Supportive policies at the institutional and governmental levels are crucial to overcoming the challenges associated with interdisciplinary teaching. With these measures in place, integrated learning can be a powerful tool in modern education, equipping students with the skills necessary for personal and professional success in a globally interconnected society.

REFERENCES

[1] Welsh, K.E., France, D., Whalley, W.B. (2012). "Geotagging Photographs in Student Fieldwork." Journal of Geography in Higher Education.

[2] Lee, J. (2023). "Beyond Geospatial Inquiry—Integrating Latest Technological Advances into Geography Education." Education Sciences.

[3] García de la Vega, A., ed. "Didactic Strategies and Resources for Innovative Geography Teaching."

[4] "Teaching Geography and Blended Learning: Interdisciplinary and New Learning Possibilities." AIMS Press

[5] European Proceedings (2021). "Integrated Approach - Challenges in Pedagogical Design of Learning."

[6] Bednarz, S. W., & Schee, J. (2006). "Geospatial Thinking and GIS in Geography Education." Oxford Bibliographies.

[7] Patterson, T. C. (2007). "Google Earth as a Tool in Geography Education." Journal of Geography

[8] García de la Vega, A. et al. (2021). "Place-Based Education and Virtual Field Trips in Geography." Stanford University Press .

[9] "Interdisciplinary Geography: Perspectives on Integrated Education." Geobalcanica Society.

[10] "Digitalization in Geography Education." Springer.

[11] Solem, M., Gersmehl, P. (2005). "Online Global Geography Modules Enhance Undergraduate Learning." AAG Newsletter.

[12] Simm, D., Marvell, A., Mellor, A. (2021). "Teaching 'Wicked' Problems in Geography." Journal of Geography in Higher Education.

[13] Stalder, F. (2016). "Digital Transformation and Geography Education." Springer.

[14] Hazena, H., & Alberts, H. C. (2020). "Innovative Approaches to Teaching Geography." Taylor & Francis.

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ҚАЗІРГІ ГЕОГРАФИЯ ПӘНІН ОҚЫТУДА ИНТЕГРАЦИЯЛЫҚ ОҚЫТУ

Аңдатпа. Бұл мақалада қазіргі географияны оқыту контекстіндегі кіріктірілген білім берудің рөлі қарастырылады. Географиялық білімді басқа ғылыми пәндердің элементтерімен интеграциялау студенттердің қазіргі әлемнің күрделі құбылыстары туралы терең білімдерін дамытудың негізгі тетігі қызметін атқарады. Бұл тәсілдің артықшылығы сыни ойлауды қалыптастыруды, аналитикалық дағдыларды дамытуды және білімді нақты сценарийлерде қолдануды қамтиды. Картография, табиғи аймақ және биосфера сияқты тақырыптарды қамтитын сәтті кіріктірілген сабақтардың мысалдары келтірілген. Мақалада географиялық білім беруде интеграцияланған білім беруді енгізудің проблемалары мен келешегі де қарастырылып, оның студенттерді қазіргі заманның күрделі міндеттеріне дайындаудағы маңыздылығына тоқталған.

Кілт сөздер: кіріктірілген сабақ; табиғи аймақ; қазіргі география.

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ИНТЕГРИРОВАННОЕ ОБУЧЕНИЕ В ПРЕПОДАВАНИИ СОВРЕМЕННОЙ ГЕОГРАФИИ

Аннотация. В данной статье рассматривается роль интегрированного обучения в контексте преподавания современной географии. Интеграция географических знаний с элементами других научных дисциплин служит ключевым механизмом формирования у учащихся глубоких знаний о сложных явлениях современного мира. К преимуществам такого подхода можно отнести формирование критического мышления, развитие аналитических навыков и применение знаний в реальных ситуациях. Приведены примеры успешных интегрированных уроков, охватывающих такие темы, как картография, природная территория, биосфера. В статье также рассматриваются проблемы и перспективы внедрения интегрированного обучения в географическое образование, а также подчеркивается его важность для подготовки учащихся к решению сложных задач настоящего времени.

Ключевые слова: интегрированный урок; природная территория; современная география.