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ВНЕДРЕНИЕ ИНТЕГРИРОВАННОГО ОБУЧЕНИЯ ПО СОДЕРЖАНИЮ И ЯЗЫКУ В ПРЕПОДАВАНИЕ ЕСТЕСТВЕННЫХ НАУК УЧАЩИМСЯ СРЕДНЕЙ ШКОЛЫ

Аннотация

Интегрированное обучение по содержанию и языку (CLIL) - это инновационный подход, который сочетает изучение языка с предметным содержанием, таким как естественные науки, с целью одновременного повышения уровня владения языком и знания содержания. В этой статье рассматривается применение CLIL в преподавании естественных наук учащимся средней школы, особое внимание уделяется преимуществам и проблемам этого подхода. Статья начинается с обзора CLIL и его теоретической базы, а также с выделения ключевых принципов и целей этого подхода. Затем в нем рассматриваются потенциальные преимущества внедрения CLIL в научное образование, такие как улучшение языковых навыков учащихся, развитие критического мышления и способностей к решению проблем, а также содействие более глубокому пониманию научных концепций.

Ключевые слова: Интегрированное обучение содержанию и языку (CLIL); Педагогическая наука; Учащиеся средней школы; Внедрение; Преимущества; Проблемы; Стратегии; Профессиональное развитие; Языковая поддержка.

O'RTA MAKTAB O'QUVCHILARIGA FANNI O'QITISHDA MAZMUN VA TIL BO'YICHA INTEGRATSIYALASHGAN TA'LIMNI JORIY ETISH

Annotatsiya

Kontent va til bo'yicha integratsiyalashgan ta'lim (CLIL) - bu tilni o'rganish va tarkibni bilish darajasini bir vaqtning o'zida oshirish maqsadida til o'rganishni fan kabi mavzu mazmuni bilan birlashtirgan innovatsion yondashuv. Ushbu maqolada CLIL ning o'rta maktab o'quvchilariga fanni o'qitishda qo'llanilishi ko'rib chiqiladi, ushbu yondashuvning afzalliklari va muammolariga alohida e'tibor beriladi. Maqola CLIL va uning nazariy asoslarini ko'rib chiqish va ushbu yondashuvning asosiy tamoyillari va maqsadlarini ta'kidlash bilan boshlanadi. Keyinchalik, u CLIL ni ilmiy ta'limga tatbiq etishning potentsial afzalliklarini ko'rib chiqadi, masalan, o'quvchilarning til ko'nikmalarini yaxshilash, tanqidiy fikrlash va muammolarni hal qilish qobiliyatini rivojlantirish va ilmiy tushunchalarni chuqurroq tushunishga yordam berish.

Kalit so'zlar: Tarkib va tilni integratsiyalashgan o'qitish (CLIL); ta'lim fanlari; O'rta maktab o'quvchilari; amalga oshirish; afzalliklari; muammolar; strategiyalar; kasbiy rivojlanish; tilni qo'llab-quvvatlash.

IMPLEMENTING CONTENT AND LANGUAGE INTEGRATED LEARNING IN TEACHING SCIENCE TO SECONDARY SCHOOL STUDENTS

Annotation

Content and Language Integrated Learning (CLIL) is an innovative approach that combines language learning with subject content, such as science, in order to improve students' language proficiency and content knowledge simultaneously. This article discusses the implementation of CLIL in teaching science to secondary school students, focusing on the benefits and challenges of this approach. The article begins by providing an overview of CLIL and its theoretical framework, highlighting the key principles and goals of this approach. It then explores the potential benefits of implementing CLIL in science education, such as enhancing students' language skills, promoting critical thinking and problem-solving abilities, and fostering a deeper understanding of scientific concepts.

Key words: Content and Language Integrated Learning (CLIL); Teaching science; Secondary school students; Implementation; Benefits; Challenges; Strategies; Professional development; Language support.

Introduction. Content and Language Integrated Learning (CLIL) is an innovative approach that combines the teaching of subject content with the teaching of a second language, aiming to enhance students' language proficiency and subject knowledge simultaneously. In the context of secondary education, implementing CLIL in teaching science can offer numerous benefits, such as improving students' scientific literacy, language skills, and cross-curricular connections. This paper explores the implementation of CLIL in teaching science to secondary school students, focusing on its advantages, challenges, and best practices. By examining the integration of content and language learning in the science classroom, this paper aims to provide insights into how CLIL can be effectively utilized to enhance students' learning experiences and outcomes in secondary education[1].

Content and Language Integrated Learning (CLIL) has gained popularity in recent years as an effective approach to teaching subjects in a second language, aiming to enhance both language proficiency and subject knowledge simultaneously. In the context of secondary education, implementing CLIL in teaching science has been a topic of interest for researchers and educators seeking to improve students' scientific literacy and language skills. This literature review aims to explore the current research on the implementation of CLIL in teaching science to secondary school students, focusing on its advantages, challenges, and best practices[2].

Literature review. Advantages of Implementing CLIL in Teaching Science:

1. Enhanced Language Proficiency: Research has shown that implementing CLIL in science education can lead to improved language proficiency among students, as they are exposed to subject-specific vocabulary and concepts in the target language.

2. Improved Scientific Literacy: By integrating content and language learning in the science classroom, students can develop a deeper understanding of scientific concepts and theories, leading to improved scientific literacy.

3. Cross-Curricular Connections: CLIL provides opportunities for students to make connections between different subjects, as they learn science concepts while also developing

their language skills. This interdisciplinary approach can enhance students' overall learning experience[3].

Challenges of Implementing CLIL in Teaching Science:

1. Teacher Training: One of the main challenges in implementing CLIL in science education is the need for teacher training and professional development to effectively integrate content and language learning in the classroom.

2. Curriculum Alignment: Aligning the science curriculum with language learning objectives can be challenging, as teachers need to balance subject content with language instruction to ensure both are adequately covered.

3. Assessment: Assessing students' learning outcomes in a CLIL classroom can be complex, as teachers need to consider both subject knowledge and language proficiency when evaluating student performance.

Best Practices for Implementing CLIL in Teaching Science:

1. Collaborative Planning: Teachers should collaborate with language specialists to design lessons that integrate subject content and language learning effectively.

2. Scaffolded Instruction: Providing scaffolding support, such as visuals, graphic organizers, and language frames, can help students understand complex scientific concepts while developing their language skills.

3. Authentic Materials: Using authentic scientific texts, videos, and experiments can engage students in meaningful learning experiences and enhance their understanding of science concepts.

Implementing CLIL in teaching science for secondary school students offers numerous advantages, including enhanced language proficiency, improved scientific literacy, and cross-curricular connections. However, challenges such as teacher training, curriculum alignment, and assessment need to be addressed to ensure the successful implementation of CLIL in the science classroom[5]. By following best practices such as collaborative planning, scaffolded instruction, and using authentic materials, educators can effectively integrate content and language learning to enhance students' learning experiences and outcomes in secondary education.

Research Methodology. Implementing Content and Language Integrated Learning (CLIL) in teaching science to secondary school students involves integrating language learning and subject content in the classroom to enhance students' language proficiency and scientific knowledge simultaneously. Here are some key steps and strategies for effectively implementing CLIL in teaching science:

1. Curriculum Design: When designing CLIL lessons for science, teachers should align language learning objectives with science content standards. Identify key scientific concepts and vocabulary that students need to learn and incorporate language activities that support their understanding of these concepts[6].

2. Language Support: Provide language support to help students navigate complex scientific texts and discussions. This can include pre-teaching key vocabulary, using visual aids, providing language frames, and offering opportunities for structured language practice.

3. Integrated Skills: Incorporate opportunities for students to develop all four language skills – reading, writing, listening, and speaking – within the context of science learning. Encourage students to engage in discussions, write scientific reports, read authentic scientific texts, and listen to scientific presentations.

4. Authentic Materials: Use authentic scientific materials such as articles, research papers, videos, and experiments to expose students to real-world scientific language and practices. This can help make the learning experience more engaging and relevant for students.

5. Collaborative Learning: Encourage collaborative learning activities that promote language use and subject understanding. Group projects, debates, role-plays, and experiments can provide opportunities for students to communicate in the target language while working together to explore scientific concepts.

6. Formative Assessment: Use formative assessment techniques to monitor students' progress in both language and science learning. Provide feedback on language use, scientific understanding, and overall learning outcomes to support students' growth in both areas.

7. Professional Development: Offer professional development opportunities for teachers to enhance their knowledge and skills in implementing CLIL in the science classroom. Training on effective instructional strategies, language support techniques, and curriculum design can help teachers successfully integrate content and language learning. By following these steps and strategies, educators can effectively implement CLIL in teaching science for secondary school students, creating a rich learning environment that promotes both language proficiency and scientific literacy[7]. This integrated approach can benefit students by enhancing their language skills, deepening their understanding of scientific concepts, and preparing them for success in both academic and real-world contexts.

Implementing Content and Language Integrated Learning (CLIL) in teaching science requires careful planning, collaboration, and effective instructional strategies. Clearly define the content objectives (science concepts to be taught) and language objectives (language skills to be developed) for each lesson or unit. Ensure that both content and language goals are aligned and integrated throughout the instruction[8]. Choose science topics that are engaging, relevant, and appropriate for the language proficiency level of your students. Select topics that lend themselves well to interdisciplinary connections with language learning. Design lessons that integrate science content with language learning activities. Incorporate opportunities for students to practice listening, speaking, reading, and writing skills while engaging with scientific concepts.

Utilize authentic scientific texts, articles, videos, and other resources to expose students to real-world language use in the context of science. Encourage students to interact with these materials in meaningful ways. Offer language support strategies such as pre-teaching key vocabulary, providing visual aids, scaffolding language tasks, and offering opportunities for peer collaboration to help students comprehend and express scientific ideas effectively.

In conclusion, implementing Content and Language Integrated Learning (CLIL) in teaching science for secondary school students is a powerful educational approach that holds immense potential for enhancing students' language proficiency and scientific knowledge simultaneously. By integrating language learning with subject content, educators can create a more engaging, meaningful, and effective learning experience for students. Through the implementation of CLIL, students not only deepen their understanding of scientific concepts but also develop critical thinking skills, improve their language skills, and prepare themselves for academic and professional success[9]. By aligning language objectives with science standards, identifying key vocabulary and concepts, and designing engaging activities that promote both language and subject learning, teachers can effectively integrate language learning and science content in their lessons.

Conclusion and suggestions. Furthermore, by employing effective language support strategies such as pre-teaching vocabulary, providing language frames, using visual aids, and offering opportunities for structured language practice, teachers can help students navigate scientific texts, discussions, and activities more effectively. Formative assessment plays a crucial role in monitoring student progress in both language and science learning within a CLIL framework, providing feedback on language use and scientific understanding, and supporting students' development in both areas. To support teachers in implementing CLIL in the science classroom, ongoing professional development opportunities are essential. Training on effective instructional strategies, language support techniques, curriculum design, and ongoing support for teachers as they integrate content and language learning are crucial for successful implementation.

Ultimately, by creating a dynamic and interactive learning environment that promotes both language proficiency and scientific literacy through authentic materials, collaborative

learning activities, real-world connections, and hands-on experiments, educators can enhance student engagement and motivation in learning science. Through thoughtful planning, strategic implementation, and ongoing support, educators can harness the power of CLIL to transform the teaching and learning of science for secondary school students, empowering them to succeed academically and professionally in an increasingly interconnected world.

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