METHODOLOGY FOR USING PISA TESTS IN TEACHING PHYSICS IN A SECONDARY SCHOOL IN PHYSICS.

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Abstract: The Program for International Student Assessment (PISA) is a globally recognized assessment that assesses the achievement of middle-aged students in reading, mathematics, and the natural sciences, including physics. The PISA system emphasizes the application of knowledge, critical thinking, and problem-solving skills to real-world situations. In this article, we explore the methodology for using PISA tests to improve physics teaching in secondary schools and focus on strategies for aligning teaching practice with the PISA assessment objectives.

Key words: physics, education, PISA, critical thinking, scientific schools, assessment.

Assessment in education plays an important role in shaping teaching practices, curriculum development, and student learning outcomes. One important assessment that has a significant impact on education systems around the world is the Program for International Student Assessment (PISA). Developed by the Organization for Economic Co-operation and Development (OECD), PISA assesses the proficiency of 15-year-old students in reading, mathematics and science, with an emphasis on physics as part of the science domain. The PISA system goes beyond testing students' content knowledge and instead, it aims to assess their ability to apply what they have learned in real-world settings. This shift toward assessing students' critical thinking, problem solving, and scientific thinking skills has prompted educators to rethink traditional teaching methodologies and explore innovative approaches to improving student learning.

Physics is a fundamental branch of science presents unique challenges and opportunities for educators seeking to align their teaching practices with the PISA goals. By integrating PISA methodologies into high school physics instruction, educators can create more engaging, interactive, and relevant learning experiences for students. This article examines the methodology of using PISA tests to improve physics teaching in secondary schools, identifying strategies that allow teachers to effectively prepare students for the requirements of PISA assessment by developing a deeper understanding and understanding of the basic principles of physics.As we navigate the complex landscape of 21st century education, educators need to adapt their instructional practices to meet the changing needs of students in a rapidly changing world. By using insights from PISA assessments and integrating them into physics teaching methodology, teachers equip students with the essential skills, competencies, and knowledge they need to succeed not only in standardized tests, but in their academic pursuits, future careers, and everyday life possible

To use PISA effectively in teaching physics, teachers need to have a good understanding of the basics of PISA, including the cognitive domains assessed, the types of questions used, and the assessment criteria. By aligning curriculum goals with PISA goals, teachers can develop instructional practices that prepare students for the challenges identified in the assessment and are required to apply scientific principles to conduct research. Teachers can incorporate inquiry-based approaches in physics classes that encourage students to learn concepts through hands-on experiences, research projects, and data analysis. This pedagogical method not only expands students' understanding of physics, but also develops critical thinking and problem-solving skills. PISA tests assess students' ability to analyze complex problems, evaluate evidence, and create solutions. To prepare students for these challenges, teachers can focus on developing critical thinking and problem-solving skills in physics classes. By presenting students with real-world problems that require the application of physics principles, teachers can help students develop analytical skills and logical thinking. Physics

concepts are interconnected with other subjects, and PISA assessments often require students to integrate knowledge from multiple subjects. Teachers can facilitate cross-curricular connections by showing how the principles of physics relate to mathematics, chemistry, biology, and other fields. By highlighting these connections, students can develop a holistic understanding of how different subjects intersect and apply their knowledge in an interdisciplinary context. PISA tests emphasize the practical application of physics concepts in real-world scenarios. Teachers can engage students by including examples and case studies that show the importance of physics in everyday life. By encouraging students to apply what they have learned to solving practical problems, teachers can increase students' interest and engagement in learning physics and are required to work in teams to effectively deliver their results. Teachers can promote cooperative learning in physics classes by assigning group projects, facilitating discussions, and encouraging peer interaction. By working together, students can develop teamwork skills, improve communication skills, and use different perspectives. Formative assessment is essential to monitor student progress, identify learning gaps, and provide individualized support. Teachers can use formative assessment practices that align with PISA goals to monitor student performance and adjust instruction accordingly. By regularly assessing student understanding and establishing areas for improvement, teachers can optimize learning outcomes and prepare students for success in PISA tests.

Conclusion.

Using the PISA test methodology in teaching physics provides a valuable opportunity to enhance students' learning experience, develop critical skills, and improve assessment effectiveness. Middle school physics teachers can integrate inquiry-based learning, develop critical thinking skills, encourage connections between academic disciplines, promote application-oriented learning, and collaborate by introducing learning-stimulating and formative assessment practices, high school physics teachers can effectively prepare students for the challenges of PISA assessment

and evaluation equipping them with the skills they need to succeed in physics and beyond.

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