Presentation method in the teaching of informatics and computer science

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Abstract. In this paper, we investigate the role of the report method as an educational strategy in the teaching of informatics and computer science. We analyze its advantages and challenges, as well as its impact on the development of students' critical thinking and presentation skills. The goal is to provide insight into the effectiveness of this method and recommend ways to improve it in the educational process.
Keywords: report method, teaching, informatics, computing, education, critical thinking, presentation skills

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Introduction

In today's educational system, the teaching of informatics and computing occupies an increasingly important place, given that technology is developing rapidly and is becoming an integral part of everyday life. In this context, education includes not only the acquisition of theoretical knowledge, but also the development of practical skills that are necessary for successful navigation in the modern world (Avakumovic and Bulatovic, 2010). Teaching methods are diverse and adapted to different learning styles, and one of them that stands out is the lecture method. This method not only allows students to explore specific topics, but also encourages them to think critically, independently and creatively (Bulatovic, 2013; Bulatovic, 2015). Through research and paper preparation, students have the opportunity to deepen their understanding of certain concepts, develop research skills and improve their presentation skills. In this report, we will analyze the application of the report method in the teaching of informatics and computer science, investigating its advantages, disadvantages and impact on students. This analysis will help us better understand how this method can contribute to the quality of education and empower students for the challenges brought by the digital age (see Kloosterman et al, 1987; Waite, 2017; Sentence et al, 2023).

Analysis and Discussion

The paper method in the teaching of informatics and computer science provides students with the opportunity to delve deeper into certain topics. Students choose topics that interest them, which increases their motivation and engagement. This method encourages independent research, which is key to developing critical thinking and analytical skills. One of the advantages of this method is that students learn how to search for information sources, analyze them and synthesize them. In a world where the availability of information is overwhelming, the ability to distinguish between relevant and less relevant data is becoming increasingly important (Novak, 2021).

Also, preparing a paper can help students develop their writing and thought organization skills. However, there are also challenges in applying the report method. It is necessary to provide adequate support and resources, so that students can successfully research their topics. Also, some students may have difficulty with public speaking, which may affect their self-confidence. Teachers should provide feedback and support for students to overcome these obstacles. The paper method can significantly affect the relationship between teacher

and student, as well as the dynamics in the classroom (Smith,2022).

Figure 1. Knowledge starts here

Figure 2. We live in the digital age, which began in the 1980s.

Figure 3. In the digital age, ICT knowledge can be used to create the Internet of Things (which allows objects from everyday life to be connected to the internet).

Figure 4. Presentation of information technologies in education. "The goal ofteaching and learning informatics and computer science is to enable students tomanage information." (Rathour et al,2024).

Here are some key aspects of how this method shapes that relationship (see Johnson, 2020; Petrovic, 2023): Connecting through research: When students prepare papers, they research topics that are interesting to them or relevant to contemporary technologies. This research can encourage a conversation between teacher and student, where the teacher can provide additional information or resources to help students deepen their understanding. Increased engagement: Students who work on papers often become more engaged in the learning process. When they have the opportunity to research and present a topic that interests them, their motivation increases, which can positively affect the relationship with the teacher. Teachers who recognize and support this motivation can create a positive learning environment. Developing communication skills: Preparing and presenting papers helps students develop their communication skills. Teachers can provide guidance and feedback on how to effectively communicate their ideas, which can strengthen mutual trust and respect. Evaluation and feedback: As you mentioned, evaluation of the paper is crucial. Teachers should clearly define assessment criteria, which allows students to understand expectations. Feedback after presentations can be constructive and developmental, further strengthening the relationship between teacher and student (see Kay,2005; Dagienė,2006). Encouraging independence: The paper method encourages students to take responsibility for their own learning. When students research and prepare their work, they become active participants in the process, which can contribute to the development of self-confidence and independence. Teachers, who recognize and support this independence, can create a positive classroom. Creating a common space for learning: When

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students share their knowledge through reports, a space is created for the exchange of ideas and discussion. This can strengthen the classroom community, where students and teachers learn and grow together, further enhancing the relationship. The paper method can be a powerful tool for strengthening teacher-student relationships, encouraging engagement, developing skills, and creating a positive learning environment. Teachers who use this method carefully can significantly improve the quality of teaching and the student experience (seeShahid, 2019;Pardaboyevich et al, 2020). Here is an example that confirms this: "The influence of social networks on modern society". Social networks have become an indispensable part of everyday life. They allow people to communicate, share information and connect with others around the world. In this report, we will analyze the impact of social networks on society, including positive and negative aspects. Positive aspects of social networks: Connectivity: Social networks allow people to stay in touch with friends and family,

regardless of physical distance. Information: Users can quickly access news and information from various sources, which contributes to a better understanding of the world around them. Community support: Many groups and organizations use social media to promote their causes and rally support. Negative aspects of social networks: Mental health: Studies show that excessive use of social networks can lead to anxiety, depression and feelings of loneliness. Misinformation: Social networks are often platforms for the spread of fake news and misinformation, which can have serious consequences for society. Privacy: Many users are unaware of how much their data is exposed and how it is used, which can lead to privacy violations. Therefore, social networks have a significant impact on modern society. While they provide many benefits, it is important to be aware of the potential risks. Using social media requires responsibility and critical thinking in order to maximize benefits and minimize harms.
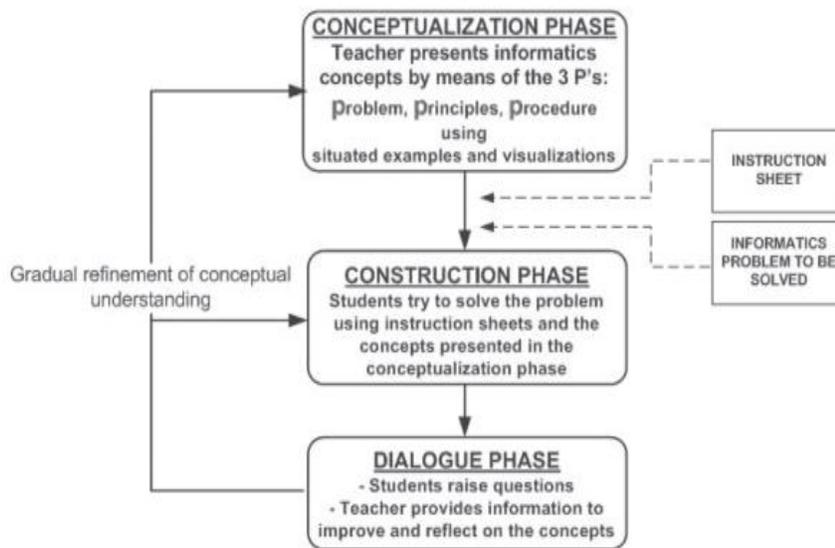

Figure 5. Concept-based pedagogical approach to school informatics (Hadjerrouit, 2009).

Within the framework of modern education, the report method is an important tool for encouraging active learning and critical thinking among students. The integration of papers into the teaching of informatics and computer science can contribute to the development of skills that are crucial for success in the digital world. In this chapter, we consider how the paper method can be effectively implemented in the curriculum, as well as its advantages and challenges. One of the ways to integrate papers is through project-based learning. Teachers can form groups of students who will jointly explore certain

topics related to modern technologies, such as artificial intelligence, cyber security or the impact of social networks on society. This approach not only encourages collaboration among students, but also enables a deeper understanding of topics through joint research and discussion (see Diethelm, 2012; Miller, 2021). For example, a group can investigate how artificial intelligence is changing industries and how this affects the labor market. At the end, each member of the group can prepare his part of the paper, which develops individual presentation and research skills. The combination of the lecture method

with practical exercises further enriches the learning process. After students present their research on a particular technology, they can work on a hands-on project that uses that technology. This not only helps students to apply theoretical knowledge, but also to develop practical skills that are necessary for working in the real world. Also, this kind of integration allows students to see the direct application of what they have learned, which can significantly increase their motivation (see Yalçın and Yalçın, 2010; Metcalf et al 2016).

Evaluation is another key aspect of the successful application of the paper method. Teachers should develop clear and transparent assessment criteria, which will allow students to understand what is expected of them. For example, criteria may include clarity of presentation, depth of research, ability to answer questions, and quality of visual materials. Providing feedback after presentations is also essential. Students should receive constructive feedback to help them improve their skills and confidence. This evaluation process not only contributes to student development, but also allows teachers to identify areas that require additional support. The report method, when properly applied, can significantly enrich the teaching of informatics and computer science. Through project-based learning, hands-on exercises and clear assessment, students can develop important skills that will benefit them in the future. This approach not only improves understanding and retention of information, but also prepares students for the challenges of modern society. Thus, the paper method is an educational strategy used to encourage active learning and develop research and presentation skills in students (see Ait Baha, 2024; Iranzad and Liu, 2025). In analyzing the relationship between teacher and student through this method, we can consider several key aspects: The role of the teacher: The teacher acts as a facilitator and mentor, providing guidance and support to students during the research process. He sets clear goals and expectations, but also motivates students to take responsibility for their learning. Through feedback, the teacher helps students improve their skills and understanding of the topic (Bulatovic, 2025). Student role: Students take an active role in learning, researching the topic, gathering information and preparing a presentation. This method encourages independence, critical thinking and creativity, as students often have to analyze and interpret data in their own way. Students also develop public speaking and communication skills when presenting their papers. Interaction and communication: The presentation method encourages interaction between teachers and students, as well as among the students themselves. Discussions that take place during and after the presentations enable the exchange of ideas and opinions, which further

enriches the learning process. Students can ask questions and provide feedback to each other, creating a dynamic learning environment (Bulatovic,2025). Evaluation and feedback: The evaluation of the report can be two-way; the teacher can evaluate the students' work, while students can get the opportunity to evaluate each other. This practice can help students develop the ability of critical thinking and self-evaluation, which is important for their further academic development. Challenges: In some cases, students may have difficulties with independent research or public speaking, which may affect their relationship with the teacher. A teacher should be aware of the different ability levels among students and adjust their approach so that everyone has an equal chance of success (Rajovic,2007). The report method can significantly enrich the relationship between teacher and student, encouraging active learning, communication and development of various skills. Through proper application of this method, teachers can create a positive and motivating educational environment.

Conclusion
The paper method in the teaching of informatics and computer science is an effective way to encourage independent research and develop students' skills. Although there are challenges in its implementation, properly conducted teaching can significantly contribute to the education of students. By integrating this method with other forms of learning, teachers can create a dynamic and stimulating environment that will prepare students for the challenges of the modern world. In the future, it is important to continue to research and improve teaching methods to ensure that students receive the best possible education.

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