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Stagnation or Progress? The Development of Students' Map Skills in the Context of the Digital Age (2013–2023)

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Abstract:

Over the last decade, there has been a massive development of digital technologies, which has also impacted the field of cartography. It was expected that this technological advancement would lead to an improvement in mapping skills among the younger generation. Research conducted in a Czech school in 2013 and 2023 shows that despite significant progress in digital maps and satellite imagery, the development of students' mapping skills has remained essentially stagnant. This paper presents the methodology, results, and analysis of this research, which focused on three age groups of students (11, 15, and 19 years old) and their ability to work with maps and images. The results demonstrate that the level of mapping skills has remained virtually unchanged, reflecting a stagnant state in geographical and cartographic education.

The research included 331 respondents aged 11, 15, and 19 years. Testing took place at the same school, with the same teachers, ensuring methodological consistency. Identical tests focused on map reading, satellite image interpretation, and evaluating the difficulty of various cartographic materials were used. The results showed only minimal changes in map reading and image interpretation success between 2013 and 2023. For instance, the success rate in map reading among 11-year-olds increased from 64% to 72%, while the success rate with images remained nearly unchanged (74% in 2023 compared to 75% in 2013). Preference for maps over images slightly increased across all age categories, with the most notable rise observed among the 15-year-old group. This paper emphasizes that the mere availability of technology is insufficient for a significant improvement in the cartographic skills of the younger generation. It is necessary to combine traditional methods with digital tools and create a comprehensive educational approach that fosters a deeper understanding and practical use of cartographic materials. Despite technological progress, students' mapping skills remain similar to ten years ago. The main barrier to developing these skills appears to be the conservative approach in the educational process. Most teachers emphasize basic skill levels, which limits students' potential for deeper geographical thinking. The lack of innovation in teaching methods, including integrating satellite imagery and digital maps, further contributes to this stagnation.

Conclusion
Our findings show that although technological progress has made a wide range of cartographic tools available, its impact on students' mapping skills has been limited. The results show that the mere availability of modern technologies does not guarantee higher-quality education in cartography. The teacher and their pedagogical work are the key factors for developing cartographic skills.

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