

Gamifying Maps with Pokémon Go for Elementary Education

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Abstract:

Gamification, which utilizes game design elements in educational settings, offers a promising approach to teaching cartography in basic education. This study focuses on the use of Pokémon Go, an augmented reality game, to facilitate the understanding of cartographic concepts among students in the final years of elementary school. By integrating geolocation and interactivity, the game presents a unique opportunity to revitalize traditional teaching and make learning more engaging.

The main objective is to evaluate the effectiveness of Pokémon Go as a pedagogical resource in Geography education, with an emphasis on cartographic concepts, and explore how this technology can enhance students' interest and understanding of the subject. Key references such as Almeida (1994) and Oliveira (2010) highlight the importance of innovating in Geography education through active methodologies. Alves et al. (2018) and Cieslak et al. (2020) provide a robust theoretical foundation on the newsworthiness and benefits of digital games in education, emphasizing how gamification can capture students' attention and enhance motivation.

Adopting a qualitative approach, the study utilized case analyses in a school where Pokémon Go was integrated into the Geography curriculum. Observations and interviews with educators and sixth-grade students helped to understand how the game was implemented and the challenges faced during its execution. The implementation of Pokémon Go allowed students to actively engage with the content, applying theoretical concepts while exploring both real and virtual geographical locations. The results showed significant improvement in the understanding of concepts such as proportion, scale, and spatial orientation. However, challenges such as the need for constant connectivity and security concerns were identified.

The study reveals that, despite technical and logistical challenges, gamification through Pokémon Go offers a relevant and innovative methodology for Geography teaching. Gomes and Rosa (2022) and Nascimento et al. (2022) emphasize the importance of proper educator preparation and the adaptation of pedagogical strategies that incorporate playful elements to enhance engagement and learning.

The experience with gamified methodologies was positive for both students and the teacher. Students reported increased motivation, engagement, and ease in understanding the content, attributing these outcomes to the playful and interactive nature of the activities. Gamification, as noted by Nascimento et al. (2022), helps reduce students' resistance to traditional teaching methods by fostering a more participatory learning environment. Furthermore, students become protagonists in their own learning process, connecting theoretical concepts to everyday practice and thus giving meaning to what is taught (Sena & Jordão, 2021). From the teacher's perspective, gamification emerged as an innovative approach that combines playfulness with meaningful learning, transforming the teaching process into a dynamic and interactive experience.

Nonetheless, several challenges were identified during implementation. These included the requirement for all students to have access to mobile devices with a stable internet connection—a condition not always met—as well as instances where the teacher had to share their own connection to ensure continuity. Additional barriers involved school bureaucracy for off-campus activities, concerns over student safety, and the dependence on favorable weather conditions for outdoor learning. Moreover, limited teacher training in cartography remains a significant obstacle, as highlighted by Almeida and Almeida (2014), directly affecting the quality of cartographic instruction in schools.

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