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ENHANCING GEOGRAPHY LESSONS THROUGH DIGITAL AND MOBILE TECHNOLOGIES

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Abstract The rapid digital transformation of contemporary education has profoundly reshaped the ways geography can be taught and learned. This article examines the pedagogical significance of integrating digital and mobile technologies into secondary school geography lessons, building upon the theoretical and practical insights of Walshe and Healy (2020), de Miguel González and Rivero Gracia (2018), France et al. (2015), and the 2025 framework on digital fieldwork enhancement. Drawing on these works, the article argues that digital tools—such as geospatial technologies, mobile applications, and virtual fieldwork platforms—support deeper conceptual understanding, enhance spatial thinking, and strengthen the link between theory and practice. Practical implications for teachers in Uzbekistan, particularly in G‘uzor district, are provided to demonstrate how digital solutions can enhance curriculum delivery in resource-constrained environments.

Keywords: Geography education; digital pedagogy; mobile technologies; geospatial tools; fieldwork; spatial thinking; digital transformation.

The accelerating digitalisation of the twenty-first century has brought significant changes to school education across the globe, and geography stands out as one of the subjects most positively affected by these innovations. As Walshe and Healy (2020) emphasise in Geography Education in the Digital World, digital tools offer new possibilities for connecting theoretical geographic perspectives with practical exploration. Their research highlights that interactive digital environments encourage learners to engage with spatial data, analyse relationships, and understand complex geographical processes in more meaningful ways. For schools in Uzbekistan, particularly those in rural districts like G‘uzor, the opportunities offered by these technologies can help bridge the gap between traditional textbook-based teaching and globally recognized pedagogical standards.

A major strand in modern geography education research focuses on the integration of geospatial technologies. The comprehensive work of de Miguel González and Rivero Gracia

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(2018) demonstrates that GIS platforms, remote sensing tools, and digital mapping applications significantly enhance students' spatial reasoning. These tools enable learners to move beyond passive map-reading toward active inquiry—evaluating patterns, making interpretations, and connecting geographical concepts to real-world issues. The authors argue that geospatial technologies strengthen scientific literacy and provide a foundation for understanding contemporary global challenges such as climate change, urbanisation, and environmental degradation. In the context of Uzbekistan's secondary schools, the adoption of such technologies allows students to analyse local landscapes using internationally recognised scientific methods.

Another essential component of geography education is fieldwork, a practice that has undergone considerable transformation due to digital and mobile technologies. France et al. (2015) show that mobile devices enrich field-based learning by enabling students to collect data, record environmental observations, capture geotagged images, and access real-time information directly in the field. These technologies make fieldwork more engaging, manageable, and inclusive. The 2025 edition of Teaching Fieldwork in Geography, Earth and Environmental Sciences further demonstrates how digital tools—such as virtual field trips, drone imagery, mobile measurement apps, and cloud-based collaborative platforms—go beyond enhancement to fundamentally transform the nature of fieldwork itself. Digital fieldwork allows students to experience distant or inaccessible environments and supports differentiated learning by enabling students to engage at their own pace.

Taken together, these scholarly contributions reflect a broader global shift in the aims and methods of geography education. Digital tools enable teachers to make connections between classroom concepts and real-world geographic issues, thereby promoting higher-order thinking. For example, students using mobile apps can compare climatic datasets, interpret satellite imagery, or evaluate land-use changes in their region. Such tasks cultivate analytical, interpretative, and problem-solving skills—competencies that align with modern educational priorities.

In the context of Guzar district, these pedagogical innovations are not theoretical but increasingly practical. Geography teachers have begun incorporating digital maps, interactive online atlases, and geospatial platforms to enrich lessons. Mobile technologies are used to conduct mini-field investigations around the school environment, allowing students to collect and analyse data related to soil, vegetation, or urban patterns. These methods foster greater student engagement, autonomy, and curiosity. Moreover, digital tools help compensate for limited access to traditional fieldwork resources, making high-quality geography education more accessible even in remote or resource-limited schools.

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Ultimately, integrating digital and mobile technologies into geography lessons strengthens the relationship between theoretical knowledge and practical experience. It brings geographical processes to life, supports diverse learning needs, and prepares students to think critically about local and global challenges. For Uzbekistan's education system, adopting these tools represents an important step toward modernising curricula and ensuring that students gain competencies relevant to the digital age.

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