



Issues and challenges in teaching geography at school level

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Abstract

Geography, as an integrative discipline combining physical and human dimensions, plays a vital role in fostering spatial thinking, environmental awareness, and informed citizenship among school students. Despite its significance, the teaching of Geography in schools continues to face numerous issues and challenges that hinder effective learning outcomes. This paper examines the nature and scope of Geography teaching and critically analyzes the major issues related to curriculum design, pedagogy, resource availability, teacher preparedness, and assessment practices. It further explores key challenges, including students' perception of Geography as a memorization-based subject, technological disparities, institutional constraints, limitations in fieldwork, and gaps between policy and classroom implementation. The analysis reveals that traditional teaching methods, inadequate infrastructure, and lack of experiential learning opportunities significantly affect student engagement and conceptual understanding. Additionally, insufficient integration of contemporary issues such as sustainability and climate change reduces the relevance of Geography education in addressing real-world problems. In response to these challenges, the paper proposes a set of strategic measures, including curriculum reform, adoption of innovative pedagogical approaches, effective integration of technology, continuous professional development for teachers, and improvement in assessment practices. The study emphasizes the need for collaborative efforts among educators, policymakers, and institutions to bridge existing gaps and enhance the quality of Geography teaching. Strengthening Geography education is essential for preparing students to become environmentally responsible and spatially aware citizens capable of addressing contemporary global challenges.

Keywords: Geography education, spatial thinking, environmental awareness, pedagogical challenges, curriculum reform

Introduction

Geography is a dynamic and integrative discipline that examines the spatial relationships between physical environments and human societies. It encompasses both physical geography, which deals with natural processes such as climate, landforms, and ecosystems, and human geography, which focuses on population, culture, and economic activities (de Miguel González, 2024; Minz & Tiwari, 2025)^[5, 16]. By linking these dimensions, Geography provides a comprehensive understanding of human-environment interactions and their implications for sustainable development (Zimmerer, 2017)^[27].

In school education, Geography plays a crucial role in developing spatial thinking and environmental awareness among learners. It equips students with the ability to interpret maps, analyze spatial patterns, and understand global interconnections (Lee, 2024)^[12]. Furthermore, Geography contributes to disaster preparedness and sustainability education by helping learners understand natural hazards, resource management, and environmental conservation (Pereira & Zhao, 2025; Rakuasa & Latue, 2023)^[19, 22]. Such competencies are essential in addressing contemporary global challenges.

Despite its importance, the status of Geography teaching in schools—particularly in India—remains a matter of concern. Studies indicate that Geography is often taught using traditional methods, with limited emphasis on practical and experiential learning (Alam, 2021)^[14]. Additionally, issues such as inadequate resources, insufficient teacher training, and a content-heavy curriculum hinder effective teaching-learning processes (Gantait, 2022)^[6].

Given these concerns, there is a pressing need to examine the barriers affecting Geography teaching in schools. Understanding these challenges is essential for improving instructional practices and learning outcomes. Therefore, the present paper aims to identify the key issues and challenges in Geography teaching and to suggest possible strategies for enhancing its effectiveness in school education.

Nature and Scope of Geography Teaching

Geography is inherently interdisciplinary, drawing upon both natural and social sciences to explain complex relationships between humans and the environment. It integrates concepts from environmental science, geology, economics, and sociology, enabling learners to understand real-world issues in a holistic manner (Geidel & Winner, 2016; Zimmerer, 2017)^[7, 27]. This interdisciplinary nature makes Geography a vital subject for addressing contemporary challenges such as climate change, urbanization, and resource management.

At the school level, Geography comprises three major components: physical, human, and practical geography. Physical geography focuses on natural features and processes such as landforms, weather, and climate systems, while human geography deals with population distribution, settlements, and socio-economic activities (Minz & Tiwari, 2025)^[16]. Practical geography includes essential skills such as map reading, interpretation, fieldwork, and the use of geospatial technologies like Geographic Information Systems (GIS), which enhance spatial understanding (Lee, 2024)^[12].

The expected learning outcomes of Geography teaching include the development of map skills, analytical thinking,

and environmental sensitivity. Students are expected to interpret spatial data, analyze patterns, and understand human-environment interactions critically (Lee & Kriewaldt, 2025) ^[13]. Additionally, Geography education aims to foster responsible citizenship by promoting awareness of environmental issues and sustainability. Pedagogically, Geography teaching is expected to be activity-based and learner-centred. Approaches such as inquiry-based learning, project work, and collaborative activities are recommended to enhance engagement and understanding (Roberts, 2023) ^[23]. Fieldwork and experiential learning are considered essential components, as they provide opportunities for students to connect theoretical knowledge with real-life experiences (Sprengr *et al.*, 2024) ^[25]. However, the effective implementation of these approaches remains a challenge in many school contexts.

Major Issues in Geography Teaching **Curriculum-Related Issues**

One of the most persistent issues in Geography teaching is the nature of the curriculum. The syllabus at the school level is often overloaded with factual information, leaving limited scope for conceptual clarity and critical understanding (Gantait, 2022) ^[6]. This content-heavy approach encourages memorization rather than meaningful learning, thereby reducing students' interest in the subject. Additionally, Geography textbooks frequently lack adequate local and regional context, which makes it difficult for learners to relate abstract concepts to their immediate surroundings (Alam, 2015) ^[1]. As a result, students fail to see the relevance of Geography in their daily lives.

Another major concern is the insufficient integration of contemporary global issues such as climate change, sustainability, disaster management, and urbanization. Although these topics are occasionally included, they are not addressed in a comprehensive and application-oriented manner (Amin & Jamaludin, 2024) ^[2]. Given the increasing importance of sustainability education, the curriculum needs to be more dynamic and responsive to current global challenges.

Pedagogical Issues

Pedagogical practices in Geography classrooms often remain traditional and teacher-centred. The dominance of the lecture method limits student participation and promotes passive learning (Singh, 2024) ^[24]. Such approaches focus primarily on the transmission of information rather than the development of geographical thinking and analytical skills.

Moreover, there is limited use of essential teaching-learning materials such as maps, globes, models, and diagrams, which are crucial for understanding spatial concepts (Bar, 2023) ^[4]. Practical activities, including map work and field-based exercises, are often neglected due to time constraints or lack of resources. This reduces opportunities for students to engage actively with the subject matter.

Another significant issue is the lack of inquiry-based and experiential learning approaches. Effective Geography teaching requires students to explore, investigate, and interpret real-world phenomena (Roberts, 2023) ^[23]. However, such approaches are rarely implemented in classrooms, resulting in superficial understanding. The absence of innovative pedagogical strategies contributes to

the perception of Geography as a dull and memorization-oriented subject.

Resource and Infrastructure Constraints

Resource limitations are a major barrier to effective Geography teaching, particularly in developing countries. Many schools lack basic teaching aids such as maps, atlases, and globes, which are essential for visualizing geographical information (Bar, 2023) ^[4]. Without these tools, it becomes difficult for teachers to explain spatial relationships and patterns effectively.

In addition, the integration of Information and Communication Technology (ICT) in Geography teaching remains limited. Advanced tools such as Geographic Information Systems (GIS), remote sensing software, and digital mapping platforms are rarely available in schools (Messina, 2021) ^[14]. Even when such technologies are available, they are often underutilized due to lack of training or technical support.

The absence of well-equipped geography laboratories further exacerbates the problem. Geography labs can facilitate hands-on learning through models, experiments, and data analysis activities. However, most schools do not have dedicated spaces or resources for such practical work, thereby restricting the scope of experiential learning.

Teacher-Related Issues

Teacher-related factors significantly influence the quality of Geography education. One of the key issues is the insufficient training of teachers in modern pedagogical methods. Many teachers continue to rely on traditional teaching approaches due to lack of exposure to innovative strategies (Alam, 2021) ^[14]. This limits their ability to engage students effectively.

Another concern is the limited competence of teachers in using geospatial technologies such as GIS and digital mapping tools. In the context of 21st-century education, these technologies are essential for developing spatial thinking and analytical skills (Nepsha, 2024) ^[12]. However, many teachers lack the necessary skills and confidence to integrate these tools into their teaching.

Additionally, teachers often face heavy workloads, including administrative responsibilities, which reduce the time and energy available for lesson planning and innovation. This can lead to reduced motivation and reluctance to adopt new teaching practices (Golightly, 2025) ^[8]. The lack of continuous professional development opportunities further compounds these challenges.

Assessment Issues

Assessment practices in Geography education are often misaligned with the objectives of the subject. The current evaluation system tends to focus predominantly on theoretical knowledge, with an emphasis on written examinations (Rakgoale & Malahlela, 2025) ^[21]. This approach neglects the assessment of practical skills such as map reading, data interpretation, and fieldwork analysis.

Map work, which is a fundamental component of Geography, is frequently given limited importance in examinations. Similarly, field-based assessments are rarely conducted due to logistical constraints. As a result, students are not adequately evaluated on their ability to apply geographical knowledge in real-life contexts.

Furthermore, there is a lack of competency-based evaluation that focuses on higher-order thinking skills such as analysis, synthesis, and problem-solving. This creates a gap between the intended learning outcomes and actual assessment practices. To ensure effective Geography education, it is essential to align assessment methods with the broader goals of developing spatial thinking and environmental awareness.

Key Challenges in Geography Teaching

Student-Related Challenges

One of the most significant challenges in Geography teaching arises from students' perceptions and learning difficulties. Geography is often viewed by learners as a subject dominated by memorization of facts, such as place names, climatic data, and definitions, rather than one that requires understanding and analysis (Piotrowska *et al.*, 2019) ^[20]. This perception discourages active engagement and reduces intrinsic motivation to learn. When students fail to see the relevance of Geography to real-life situations, their interest declines further.

Low levels of engagement are also linked to traditional teaching practices that do not actively involve learners in the learning process. Without interactive methods, students remain passive recipients of information, which limits their curiosity and participation (Angadi *et al.*, 2023) ^[3]. Moreover, Geography requires the development of spatial thinking, which involves interpreting maps, diagrams, and spatial relationships. Many students find these abstract concepts difficult to grasp, particularly in the absence of visual aids and hands-on experiences (Lee, 2024) ^[12]. This cognitive challenge often leads to misconceptions and superficial learning, thereby affecting overall achievement.

Technological Challenges

In the 21st century, the integration of technology into Geography teaching is essential for enhancing spatial understanding and engagement. However, significant technological challenges persist. One of the primary issues is the digital divide between urban and rural schools. While some urban institutions have access to advanced digital tools, many rural schools lack even basic ICT infrastructure, creating inequalities in learning opportunities (Amin & Jamaludin, 2024) ^[2].

The lack of access to geospatial technologies such as Geographic Information Systems (GIS), remote sensing tools, and digital mapping platforms further limits effective teaching. These tools are crucial for visualizing spatial data and analyzing geographical patterns, yet they are rarely available in most school settings (Messina, 2021) ^[14]. Even when such technologies are introduced, their use remains limited.

Another challenge is the lack of readiness among teachers to adopt technological tools. Studies indicate that many teachers are either not adequately trained or are hesitant to integrate ICT into their teaching practices (Mhishi *et al.*, 2023) ^[15]. This resistance may stem from a lack of confidence, insufficient training, or perceived complexity of digital tools. Consequently, the potential of technology to transform Geography education remains underutilized.

Institutional Challenges

Institutional factors also play a critical role in shaping Geography teaching. One major challenge is the limited time allocated to Geography within the school timetable.

Due to the emphasis on other subjects, Geography often receives less instructional time, which restricts the implementation of innovative and activity-based teaching methods (Kaya, 2018) ^[9]. Teachers are compelled to complete the syllabus within tight schedules, leaving little room for discussion, projects, or fieldwork.

Administrative support is another crucial factor. Organizing field trips and excursions requires planning, permissions, and financial resources. However, many schools do not provide adequate support for such activities, discouraging teachers from incorporating them into their teaching (Kerawalla *et al.*, 2012) ^[10]. This limits opportunities for experiential learning, which is central to Geography education.

Budgetary constraints further exacerbate these challenges. Schools with limited financial resources struggle to procure teaching aids, technological tools, and infrastructure required for effective Geography teaching. As a result, the quality of instruction is often compromised, particularly in under-resourced institutions.

Environmental and Fieldwork Challenges

Fieldwork is widely recognized as a core component of Geography education, as it provides students with opportunities to observe and analyze real-world phenomena. However, its implementation is often hindered by several challenges. Safety concerns are a major issue, particularly when organizing field visits to unfamiliar or potentially hazardous locations. Schools must ensure the safety of students, which sometimes leads to the avoidance of field-based activities altogether (Sprenger *et al.*, 2024) ^[25].

Logistical difficulties also pose significant barriers. Arranging transportation, obtaining permissions, and coordinating schedules require considerable effort and resources. In many cases, these challenges discourage teachers from conducting fieldwork (Kerawalla *et al.*, 2012) ^[10]. Additionally, some schools are located in regions with limited geographical diversity, making it difficult to provide varied field experiences to students.

The absence of structured support for fieldwork further limits its integration into the curriculum. Without proper guidelines, resources, and institutional backing, fieldwork remains an underutilized pedagogical tool despite its proven effectiveness in enhancing learning outcomes.

Policy-Level Challenges

Policy-level challenges significantly influence the effectiveness of Geography teaching. Although curriculum frameworks emphasize the importance of Geography and advocate innovative teaching approaches, the subject often receives inadequate emphasis compared to other disciplines (Alam, 2015) ^[1]. This affects resource allocation, teacher training, and overall prioritization within the education system.

Frequent curriculum changes present another challenge. While reforms aim to improve the quality of education, they are often implemented without sufficient preparation or training for teachers. This creates confusion and uncertainty, making it difficult for teachers to adapt to new requirements (Krause *et al.*, 2025) ^[11].

Moreover, there is often a misalignment between policy goals and classroom practices. Policies may advocate learner-centred and experiential approaches, but the ground realities—such as lack of resources, time constraints, and

inadequate training—prevent their effective implementation (NCERT, 2023). This gap between theory and practice undermines the overall effectiveness of Geography education.

The challenges in Geography teaching are multifaceted, encompassing student-related, technological, institutional, environmental, and policy-level dimensions. Addressing these challenges requires coordinated efforts at multiple levels to ensure meaningful and effective learning experiences.

Strategies to Address the Issues and Challenges

Addressing the multifaceted issues and challenges in Geography teaching requires a comprehensive and systemic approach involving curriculum reform, pedagogical innovation, technological integration, teacher capacity building, and assessment restructuring. These strategies must align with contemporary educational goals and the evolving nature of Geography as a discipline.

Curriculum Reforms

Curriculum reform is fundamental to improving the quality of Geography education. One of the key priorities should be the simplification of the existing content-heavy syllabus to promote conceptual clarity rather than rote memorization (Gantait, 2022) ^[6]. Reducing excessive factual information and focusing on core concepts can help students develop a deeper understanding of geographical phenomena.

Contextualization of content is equally important. Integrating local and regional examples into the curriculum can make learning more relevant and meaningful for students (Alam, 2015) ^[1]. When learners are able to relate geographical concepts to their immediate environment, their engagement and comprehension improve significantly. Additionally, the inclusion of contemporary global issues such as climate change, sustainability, urbanization, and disaster management is essential for preparing students to address real-world challenges (Amin & Jamaludin, 2024) ^[2]. Recent curriculum frameworks also emphasize the importance of aligning Geography education with sustainable development goals (NCERT, 2023) ^[22].

Pedagogical Innovations

Innovative pedagogical approaches are crucial for transforming Geography teaching from a passive to an active learning process. Activity-based and inquiry-based learning methods should be widely adopted to encourage student participation and critical thinking (Roberts, 2023) ^[23]. These approaches allow students to explore geographical concepts through questioning, investigation, and problem-solving.

The integration of project work and case studies can further enhance learning by providing opportunities for in-depth analysis and application of knowledge. Such methods help students connect theoretical concepts with real-life situations, thereby improving their analytical abilities (Yli-Panula *et al.*, 2019) ^[26]. Experiential learning, particularly through fieldwork, plays a vital role in Geography education. Field-based activities enable students to observe, collect data, and interpret geographical phenomena in real-world contexts (Sprenger *et al.*, 2024) ^[25]. Promoting such practices can significantly enhance students' understanding and interest in the subject.

Technology Integration

The effective integration of technology can greatly enhance the teaching and learning of Geography. Tools such as Geographic Information Systems (GIS), Google Earth, and digital maps provide powerful means for visualizing and analyzing spatial data (Nepsha, 2024) ^[18]. These technologies enable students to engage with complex geographical information in an interactive and meaningful way.

The use of smart classrooms and multimedia tools, including videos, simulations, and animations, can further enrich the learning experience. Such resources help in simplifying abstract concepts and making lessons more engaging (Messina, 2021) ^[14]. However, successful technology integration requires adequate infrastructure and access to digital resources.

Teacher training is a critical component in this regard. Teachers must be equipped with the necessary skills and knowledge to effectively use ICT tools in their teaching practices (Mhishi *et al.*, 2023) ^[15]. Providing training in digital pedagogy and geospatial technologies can enhance teachers' confidence and competence, thereby improving instructional quality.

Capacity Building of Teachers

Teacher capacity building is essential for the successful implementation of educational reforms. Regular professional development programs should be organized to update teachers' knowledge and skills in both subject content and pedagogy (Golightly, 2025) ^[8]. These programs can help teachers adopt innovative teaching methods and stay informed about recent developments in Geography education.

Workshops and training sessions focusing on geospatial technologies, such as GIS and remote sensing, are particularly important in the current educational context. Such initiatives can enable teachers to integrate technology effectively into their classrooms (Nepsha, 2024) ^[18]. Encouraging collaborative learning among teachers and promoting self-directed professional development can further enhance teaching practices.

Improving Assessment Practices

Reforming assessment practices is crucial for aligning evaluation methods with the objectives of Geography education. There is a need to shift from traditional examination-oriented systems to more comprehensive and competency-based approaches. Including practical and skill-based evaluation methods, such as map work, data interpretation, and fieldwork reports, can ensure a more holistic assessment of students' abilities (Rakgoale & Malahlela, 2025) ^[21].

Continuous and comprehensive assessment methods should be emphasized to evaluate students' progress over time rather than relying solely on final examinations (NCERT, 2017). Such approaches encourage consistent learning and provide opportunities for feedback and improvement. By aligning assessment practices with learning outcomes, it is possible to promote deeper understanding and meaningful engagement in Geography.

The effective implementation of these strategies requires coordinated efforts from policymakers, educators, and institutions. A holistic approach that addresses curriculum,

pedagogy, technology, teacher development, and assessment can significantly enhance the quality of Geography teaching and learning in schools.

Conclusion

Geography teaching in schools continues to face a range of interconnected issues and challenges, including content-heavy curricula, traditional pedagogical practices, inadequate resources, limited teacher preparedness, and ineffective assessment methods. These issues are further compounded by student-related difficulties, technological gaps, institutional constraints, and policy-level inconsistencies, all of which hinder the achievement of meaningful learning outcomes in Geography. Improving the quality of Geography teaching is not merely an academic concern but a societal necessity. In a world increasingly shaped by environmental crises, climate change, and spatial inequalities, Geography education holds immense potential in equipping students with the knowledge and skills required to understand and respond to these challenges. Therefore, strengthening Geography teaching must be viewed as a priority within the broader educational framework. Addressing these concerns requires collaborative efforts from all stakeholders. Teachers need to adopt innovative and learner-centred approaches, policymakers must ensure supportive and relevant curricular frameworks, and institutions should provide adequate resources and infrastructure. Such collective action can bridge the gap between policy and practice. Ultimately, effective Geography education can play a transformative role in preparing students to become environmentally responsible, critically aware, and spatially informed citizens capable of contributing to a sustainable future.

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