IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

FACTORS AFFECTING STUDENTS' GEOGRAPHY LEARNING IN HIGH SCHOOLS

Shivani

Junior Research Fellow
Faculty of Education,
Banaras Hindu University, Varanasi, Uttar Pradesh, India

Abstract: Geography education plays a crucial role in developing students' spatial thinking, environmental awareness, and understanding of human–environment interactions. However, learning outcomes in high school geography are influenced by multiple interrelated factors. This paper presents a thematic analysis of the key factors affecting students' geography learning, drawing on existing literature. The study identifies seven major dimensions: student-related factors, teacher competency, curriculum and content, teaching-learning resources, school environment, assessment practices, and socio-economic background. Findings indicate that student interest, teacher effectiveness, availability of resources, and relevance of curriculum significantly shape learning outcomes. Additionally, traditional assessment methods and inadequate infrastructural support hinder conceptual understanding. The paper highlights the interconnected nature of these factors and emphasizes the need for a holistic and learner-centered approach. It suggests strengthening teacher training, integrating technology, promoting experiential learning, and reforming assessment practices to enhance the quality of geography education at the secondary level.

Kewwords – Georgraphy Learning, Secondary Education, Students' Achievement, Teaching Learning Factors.

1. Introduction

Geography plays a vital role in fostering spatial thinking, environmental awareness, and global citizenship among students. It enables learners to understand the complex relationships between humans and the environment, contributing significantly to sustainable development and informed decision-making (Gupta, 2025; Pereira & Zhao, 2025). Despite its importance, geography learning at the high school level often faces challenges such as low student interest, reliance on rote memorization, and inadequate conceptual understanding (Alam, 2021; Gantait, 2022).

In the Indian context, curriculum frameworks such as the National Curriculum Framework (NCERT, 2005; 2023) emphasize experiential and inquiry-based learning; however, classroom practices frequently remain traditional and exam-oriented. This gap necessitates a deeper understanding of the factors influencing geography learning outcomes. Affecting students' geography learning in high schools indicates that several interconnected variables influence students' academic outcomes.

A major finding is that teaching methods significantly determine learning effectiveness; student-centred approaches such as inquiry-based learning, project work, and field activities enhance conceptual understanding compared to traditional lecture methods (Bruner, 1961; Piaget, 1970). Additionally, the integration of geospatial technologies and visual tools improves spatial thinking and retention (Bednarz, 2004). Another key factor is teacher competence, where subject expertise and pedagogical skills strongly influence student achievement (Shulman, 1986). Teachers who effectively relate geographic concepts to real-life contexts foster deeper understanding. The review also finds that students' attitudes and interest toward geography play a crucial role; low perceived relevance of the subject often leads to disengagement (Eccles, 2000).

Availability of resources such as maps, globes, and GIS tools significantly impacts learning outcomes, especially in resource-constrained schools (Bednarz, 2004). Socio-economic background and parental support also influence students' access to learning opportunities and motivation levels (Eccles, 2000). In addition, curriculum structure affects comprehension, as overly theoretical and content-heavy syllabi hinder meaningful learning (Shulman, 1986). Schools should adopt interactive and experiential teaching methods, including fieldwork and technology integration, to enhance engagement (Bruner, 1961). There is a need for continuous teacher training to strengthen both content knowledge and innovative pedagogy (Shulman, 1986). Improving educational resources and infrastructure, particularly in underdeveloped areas, is essential.

This paper adopts a thematic approach to analyze the major factors affecting students' geography learning in high schools. It seeks to provide a comprehensive understanding of these factors and their interrelationships, offering insights for improving teaching-learning processes.

2. Conceptual Background

Geography learning refers to the systematic acquisition of knowledge, skills, values, and attitudes related to spatial relationships, environmental processes, and human–environment interactions (de Miguel González, 2024). As a dynamic and interdisciplinary field, geography bridges the natural and social sciences, enabling learners to develop a comprehensive understanding of physical landscapes, cultural patterns, and global interdependencies (Holt-Jensen, 2022; Zimmerer, 2017). This integrative nature makes geography particularly significant in fostering critical thinking, problem-solving abilities, and global citizenship among high school students. From a theoretical perspective, constructivism plays a central role in geography education. It posits that learners actively construct knowledge through experience, inquiry, and interaction with their surroundings rather than passively receiving information (Lanh et al., 2022).

Approaches such as fieldwork, project-based learning, and geospatial exploration align with this perspective, allowing students to contextualize abstract concepts in real-world settings. In addition, experiential learning theories emphasize learning through direct engagement with geographical phenomena, which enhances retention and conceptual clarity. Cognitive theories further underscore the importance of spatial thinking and geographical reasoning as foundational competencies in geography learning (Lee, 2024; Bendl et al., 2025).

Spatial thinking involves the ability to visualize, interpret, and analyse spatial relationships, patterns, and distributions, while geographical reasoning enables students to explain processes such as climate change, urbanization, and resource distribution. The development of these cognitive skills is crucial for enabling learners to understand complex global issues and make informed decisions. socio-cultural theory highlights the role of social interaction, language, and cultural context in shaping learning experiences. Collaborative learning, peer discussion, and teacher guidance contribute significantly to the construction of geographical knowledge. The integration of digital tools such as Geographic Information Systems (GIS), remote sensing, and interactive maps further supports cognitive development and enhances students' engagement with spatial data.

Factors influencing geography learning can be broadly categorized into internal and external dimensions (Solem & Vaughan, 2023). Internal factors include students' interest, motivation, prior knowledge, and cognitive abilities, which directly affect their engagement and achievement. External factors encompass teacher expertise, pedagogical approaches, curriculum design, availability of resources, and the broader learning environment. Additionally, emerging factors such as digital literacy, access to technology, and environmental awareness are increasingly shaping geography education in the 21st century. Understanding these conceptual dimensions is essential for designing effective instructional strategies and improving learning outcomes. A balanced approach that integrates theoretical insights with practical applications can promote meaningful geography education, equipping students with the skills and knowledge necessary to navigate an increasingly interconnected and environmentally challenged world.

3. Thematic Classification of Factors

3.1 Student-related Factors

Student-related characteristics play a central role in shaping geography learning outcomes at the high school level. Among these, interest and attitude toward geography are key determinants of student engagement and academic success (Banerjee & Samanta, 2025; Das & Nag, 2024). When students perceive geography as relevant to real-life issues such as climate change, disasters, or urban development—they tend to show higher motivation. However, several studies reveal that geography is often viewed as a theoretical or memorization-based subject, leading to reduced interest and passive learning behaviors (Pokhrel & Chhetri, 2024).

Another critical factor is cognitive ability, particularly spatial thinking and geographical reasoning skills. These competencies enable students to interpret maps, analyze spatial patterns, and understand complex environmental processes (Lee, 2024). Despite their importance, many learners struggle with map reading, scale interpretation, and spatial visualization, which limits their conceptual understanding (Karmakar & Ghosh, 2019). This indicates a need for targeted instructional support to strengthen these foundational skills. Motivation and study habits further influence learning outcomes.

Students who adopt active learning strategies such as note-making, self-assessment, and inquiry-based exploration perform better than those relying solely on rote memorization. Additionally, prior knowledge significantly affects new learning; students with weak foundational concepts often develop misconceptions, which hinder their ability to grasp advanced geographical ideas (Nadila et al., 2025). Language proficiency

is another important determinant, especially in contexts where geography is taught in a second language. Difficulty in understanding technical terms, concepts, and instructions can create barriers to effective learning (Sarif et al., 2020). Furthermore, factors such as self-efficacy, learning styles, and digital literacy also shape students' engagement with geography, particularly in technology-enhanced classrooms.

3.2 Teacher-related Factors

Teachers play a pivotal role in determining the quality and effectiveness of geography education. Their subject knowledge, pedagogical competence, and professional attitudes significantly influence students' understanding and achievement (Knecht et al., 2026). A strong foundation in both content and pedagogy enables teachers to present geographical concepts in meaningful and engaging ways. However, in many educational contexts, teachers lack specialized training in geography, which can result in superficial teaching and limited conceptual clarity among students (Alam, 2015).

Effective instructional strategies are essential for enhancing geography learning. Approaches such as inquiry-based learning, fieldwork, project-based activities, and collaborative learning have been shown to improve student engagement and critical thinking (Angadi et al., 2023; Roberts, 2023). These methods allow students to actively explore geographical phenomena and relate them to real-world contexts. Despite this, traditional lecture-based teaching continues to dominate many classrooms, restricting opportunities for interaction, exploration, and skill development (Singh, 2024).

In addition, teacher enthusiasm and attitude toward the subject play a crucial role in motivating students. Enthusiastic teachers who demonstrate passion for geography can inspire curiosity and foster a positive learning environment. Continuous professional development and training programs are also vital, as they help teachers update their knowledge, adopt innovative teaching practices, and respond to evolving educational demands (Golightly, 2025).

The integration of Information and Communication Technology (ICT) has emerged as a significant factor in modern geography education. Tools such as Geographic Information Systems (GIS), digital maps, virtual simulations, and multimedia resources enhance visualization and support deeper conceptual understanding (Wang et al., 2022). However, the effectiveness of these tools depends on teachers' digital competence and their ability to integrate technology meaningfully into instruction. Furthermore, classroom management, assessment practices, and feedback mechanisms adopted by teachers also influence student learning outcomes. Constructive feedback and formative assessment help identify learning gaps and support continuous improvement.

3.3 Curriculum and Content Factors

The design, structure, and organization of the geography curriculum significantly influence students' learning experiences and outcomes. A well-structured curriculum not only determines what is taught but also how effectively students can understand and apply geographical concepts. However, research indicates that overloaded syllabi and an excessive focus on factual and descriptive content often hinder deep conceptual understanding and critical thinking (Gantait, 2022). When students are required to memorize large amounts of information without meaningful context, learning becomes superficial and less engaging.

Contemporary curriculum frameworks emphasize the importance of relevance, interdisciplinary integration, and real-life application of knowledge (NCERT, 2023; Minz & Tiwari, 2025). Geography, being inherently interdisciplinary, has the potential to connect with subjects such as science, economics, and environmental studies. Integrating these domains helps students develop a holistic understanding of global and local issues. Despite these advancements, a persistent gap between curriculum objectives and actual classroom practices remains a major challenge (Krause et al., 2025). Often, innovative curriculum goals are not fully implemented due to limited teacher preparedness or rigid assessment systems.

Another important aspect is the inclusion of local context and place-based learning. Incorporating local geographical features, community issues, and regional case studies makes learning more relatable and meaningful for students (Rakuasa & Latue, 2023). Additionally, the integration of environmental education and sustainability themes has become increasingly important in modern geography curricula, as it prepares students to understand and respond to global challenges such as climate change and resource management (Day, 2017).

A balanced curriculum should also ensure an appropriate blend of theoretical knowledge and practical skills. Skills such as map reading, data interpretation, fieldwork, and the use of geospatial technologies are essential for developing geographical competence. However, these practical components are often underemphasized in traditional curricula. Furthermore, assessment patterns and evaluation methods linked to the curriculum play a crucial role. Examinations that prioritize rote learning discourage analytical thinking and application-based learning. Therefore, adopting competency-based and skill-oriented assessment strategies is necessary.

3.4 Teaching-Learning Resources

The availability and effective utilization of teaching–learning resources play a crucial role in enhancing geography learning at the high school level. These resources support the development of spatial understanding, conceptual clarity, and student engagement. Traditional tools such as maps, globes, atlases, and charts continue to be fundamental in geography education, as they help students visualize spatial relationships and interpret geographical data (Bar, 2023). Mastery of these basic tools is essential for building core geographic skills such as map reading and location analysis. In recent years, the integration of Information and Communication Technology (ICT) has transformed geography teaching. Tools such as Geographic Information Systems (GIS), Google Earth, remote sensing, and multimedia presentations provide dynamic and interactive learning experiences (Nepsha, 2024; Messina, 2021). These technologies enhance students' ability to analyze spatial patterns, explore virtual landscapes, and understand complex environmental processes. They also support inquiry-based and student-centered learning approaches. However, the effective use of ICT is often limited by inadequate infrastructure, lack of access to digital devices, and insufficient digital literacy among teachers and students (Amin & Jamaludin, 2024).

Another important dimension is experiential learning through fieldwork and outdoor activities. Field visits, surveys, and community-based projects allow students to observe geographical phenomena directly and connect theoretical knowledge with real-life situations (Sprenger et al., 2024). Such experiences foster critical thinking, problem-solving skills, and environmental awareness. Despite their benefits, these

activities are frequently constrained by factors such as limited time, financial resources, safety concerns, and lack of administrative support. The availability of updated textbooks, reference materials, and digital content influences the quality of learning. Outdated or poorly designed materials can hinder understanding, while well-structured and visually rich resources can enhance comprehension and retention.

3.5 School and Environmental Factors

School-related factors significantly shape the quality of geography learning by influencing both the teaching environment and students' overall learning experiences. Key elements such as infrastructure, administrative support, and classroom environment determine how effectively geography is taught and understood. Schools that provide well-equipped classrooms, access to teaching aids, and a supportive academic climate tend to achieve better student outcomes (Mukminan, 2018). A positive and interactive classroom environment encourages participation, curiosity, and active engagement with geographical concepts.

Administrative support plays a crucial role in facilitating effective geography education. School leadership that prioritizes innovative teaching practices, resource allocation, and teacher training contributes to improved learning outcomes. Additionally, time allocation within the school timetable is an important factor. Limited instructional time often restricts the use of interactive methods such as discussions, projects, and practical activities, thereby affecting the depth of learning. Support for co-curricular activities, especially field trips, exhibitions, and geography clubs, further enhances experiential learning and helps students connect theory with real-world applications.

Peer interaction and collaborative learning are also vital components of the school environment. Group discussions, teamwork, and peer-assisted learning enable students to share ideas, clarify doubts, and develop critical thinking skills (Kerawalla et al., 2012). Such collaborative approaches foster a more engaging and inclusive learning atmosphere. Significant disparities exist between urban and rural schools, particularly in terms of access to resources, qualified teachers, and technological infrastructure (Shani et al., 2024). Urban schools often have better facilities and exposure to digital tools, while rural schools may face challenges such as inadequate materials and limited professional support for teachers. These inequalities create gaps in students' learning opportunities and outcomes. Environmental exposure and geographical context influence how students understand and relate to geographic concepts. Learners in diverse physical and cultural settings may have different levels of familiarity with certain topics, which affects their comprehension (Yar et al., 2023).

3.6 Socio-economic and Home Factors

Socio-economic background and home environment significantly influence geography learning. Parental support, access to educational resources, and exposure to geographical experiences such as travel and media enhance learning (Kaberia, 2020). Students from disadvantaged backgrounds may face limitations in accessing study materials and digital tools, affecting their performance. Cultural perceptions about geography as a less important subject also impact student motivation (Kidman, 2018). Home environment plays a supportive role in reinforcing classroom learning and shaping attitudes towards the subject.

4. Implications for Practice

The findings of this thematic analysis highlight several important implications for enhancing geography learning in high schools. First, there is a strong need to strengthen teacher education and continuous professional development. Training programs should focus on equipping teachers with modern pedagogical skills, including inquiry-based learning, experiential teaching methods, and effective integration of digital tools such as GIS and multimedia resources (Golightly, 2025). Well-trained teachers are better positioned to create engaging and conceptually rich learning environments.

Second, curriculum reforms are essential to make geography education more meaningful and relevant. The curriculum should emphasize real-life applications, interdisciplinary connections, and experiential learning, aligning with national educational frameworks (NCERT, 2023; Ministry of Education, 2020). Incorporating local geographical contexts, environmental issues, and sustainability themes can help students connect classroom learning with their everyday experiences, thereby increasing interest and engagement.

Third, there is a critical need for improving school infrastructure and access to teaching–learning resources. Schools should invest in both traditional and modern resources, including maps, globes, digital tools, and ICT-enabled platforms. Providing opportunities for fieldwork, projects, and outdoor learning is equally important, as these experiences deepen students' understanding of geographical concepts and promote critical thinking. Adopting student-centred and inquiry-based teaching approaches can significantly enhance learning outcomes. Encouraging active participation, collaboration, and problem-solving helps students develop higher-order thinking skills and a deeper understanding of spatial and environmental processes. Finally, assessment practices must be reformed to move beyond rote memorization. There is a need to focus on competency-based evaluation, assessing students' analytical abilities, application of knowledge, and critical thinking skills. The use of continuous and formative assessment strategies, such as projects, presentations, and reflective activities, can provide ongoing feedback and support meaningful learning.

5. Conclusion

Geography education plays a vital role in shaping informed, responsible, and environmentally conscious citizens who are capable of understanding and addressing complex global challenges such as climate change, resource management, urbanization, and sustainable development. As an interdisciplinary subject, geography not only develops spatial thinking and analytical skills but also fosters awareness of the dynamic relationship between humans and their environment. This paper has identified a range of factors that significantly influence students' geography learning at the high school level, including student-related characteristics, teacher competency, curriculum design, teaching–learning resources, school environment, assessment practices, and broader socio-economic conditions. The analysis highlights that these factors are deeply interconnected and cannot be addressed in isolation. For instance, even a well-designed curriculum may fail to achieve its objectives if teachers lack adequate training or if schools do not have sufficient resources. Similarly, student motivation and engagement are influenced by teaching methods, classroom environment, and the relevance of the curriculum to real-life contexts. Therefore, improving geography

learning requires a holistic and integrated approach that simultaneously addresses multiple dimensions of the educational process.

Policy-level interventions are essential to support this transformation. Educational policies should prioritize curriculum innovation, teacher professional development, and equitable resource distribution across schools. Special attention must be given to reducing disparities between urban and rural institutions by ensuring access to qualified teachers, digital tools, and infrastructure. In addition, promoting student-centred and inquiry-based pedagogies, along with the integration of technology such as GIS and interactive media, can significantly enhance engagement and conceptual understanding.

Assessment reforms are equally important, as traditional examination systems often emphasize rote memorization rather than critical thinking and application. Moving towards competency-based and formative assessment practices can provide a more accurate reflection of students' learning and support continuous improvement.

There is a need for further research to empirically validate the identified factors and explore context-specific strategies that can effectively address local challenges in geography education. Future studies may focus on intervention-based approaches, the role of emerging technologies, and the impact of innovative teaching practices on student outcomes.

References

1. Alam, S. (2015). A note on the status of geography teachers in Indian schools. *Geographical education*, 28, 59-65. https://files.eric.ed.gov/fulltext/EJ1085996.pdf
2. Amin, N. M., & Jamaludin, K. A. (2024). 21st century geography teaching and learning: Issues and challenges. *International journal of academic research in progressive education and development*, 13(1), 648-657. https://hrmars.com/papers_submitted/20641/21st-century-geography-teaching-and-learning-issues-and-challenges.pdf
3. Angadi, S., Ingalgi, D. M., Angadi, D. P., & Prakasha, A. P. (2023). Geography teachers' views on effective method of teaching geography. *International Journal of Innovative Research and Creative Technology*, 9(6), 1-12. https://www.ijirct.org/download.php?a_pid=2312008
4. Banerjee, A., & Samanta, S. R. (2025). Impact of students' geographical learning interest on academic performance at secondary schools. *The international journal of Indian Psychology*, 13(3), 3044-3055. https://ijip.in/wp-content/uploads/2025/09/18.01.275.20251303.pdf
5. Bar, K. (2023). Various innovative teaching aids for geography subjects at school level. *Polyphony: Bankura university journal of education*, 1(1), 109-116. https://www.bankurauniv.ac.in/uploads/tempimagepdflink/1714241112.pdf
6. Bendl, T., Krajňáková, L., Marada, M., & Řezníčková, D. (2025). Geographical thinking in geography education: a systematic review. *International Research in Geographical and Environmental Education*, *34*(4), 326–352. https://doi.org/10.1080/10382046.2024.2354097
7. Day, T. (2017). The Contribution of Physical Geographers to Sustainability Research. *Sustainability*, 9(10), 1851. https://doi.org/10.3390/su9101851

8. de Miguel González, R. (2024). The Discipline of Geography and Geography Education. In: Bednarz, S.W., Mitchell, J.T. (eds) *Handbook of Geography Education*. Springer International Handbooks of Human Geography. Springer, Cham. https://doi.org/10.1007/978-3-031-72366-7_4
9. Gantait, B. (2022). Problems of geography teaching in Indian schools: Some reflections. *Bhavaveena*, 19(9.1), 118-125. https://www.researchgate.net/publication/364365718
10. Golightly, A. (2025). The importance of meaningful quality geography education in South African learning contexts. *South African Geographical Journal*, *107*(4), 443–446. https://doi.org/10.1080/03736245.2025.2472660
11. Golightly, A. (2025). Relationships between geography teachers' SDL skills, participation in self-directed professional development and the use of learner-centred instructional strategies. *South African Geographical Journal*, *107*(4), 548–564. https://doi.org/10.1080/03736245.2025.2472663
12. Gupta, R. (2025). The importance of geography: Understanding our world and its impact. *The infinite*, 3(1), 31-37. https://theinfinite.co.in/wp-content/uploads/2025/03/mar-2025-The-Importance-of-Geography.pdf
13. Holt-Jensen, A. (2022). Synthesis of Physical and Human Geography: Necessary and Impossible?. In: Jakobsen, P., Jönsson, E., Larsen, H.G. (eds) *Socio-Spatial Theory in Nordic Geography*. Springer, Cham. https://doi.org/10.1007/978-3-031-04234-8_5
14. Kaberia, B. M. (2020). Factors influencing students' choice of geography in public secondary schools in Kieni East Sub-country Nyeri Country, Kenya. [Masters Thesis, Africa Nazarene University].
15. Karmakar, B., & Ghosh, S. (2019). Learning difficulties in geography map pointing skills among secondary students in West Bengal. *Journal of emerging technologies and innovative research*, 6(6), 90-99. https://www.jetir.org/papers/JETIR1906I43.pdf
16. Kerawalla, L., Littleton, K., Scalon, E., Collins, T., Gaved, M., Mulholland, P., Jones, A., Clough, G., & Blake, C. (2012). Doing geography: A multimodal analysis of students' situated improvisational interpretation during fieldtrips. *Learning, culture and social interaction*, 1(2), 78-89. https://doi.org/10.1016/j.lcsi.2012.05.001
17. Kidman, G. (2018). School geography: what interests students, what interests teacher? *International Research in Geographical and Environmental Education*, *27*(4), 311–325. https://doi.org/10.1080/10382046.2017.1349374
18. Knecht, P., Spurná, M., Catling, S., & Soukup, P. (2026). Conceptions of Geography Teaching in Classrooms: Validating Teacher Self-Reports Through Observations. *Journal of Geography*, *125*(2), 68–78. https://doi.org/10.1080/00221341.2026.2627989
19. Krause, U., Rawlings Smith, E., Flajšhans Nedbalova, R., He, X., He, Y., Ito, N., Milaras, M., Yang, J., Hanus, M., & Béneker, T. (2025). The barriers and enablers of curriculum thinking and teacher agency in geography education: a multinational study. *International Research in Geographical and Environmental Education*, *34*(3), 220–236. https://doi.org/10.1080/10382046.2025.2466160

20. Lambert, D., Bednarz, S. W., Herman, T., & Mitchell, J. T. (2026). Geography Education Research: What for, What Works, and Where Next? *Journal of Geography*, 1–10. https://doi.org/10.1080/00221341.2026.2624455
21. Lee, J. (2024). Geographical Thinking Versus Spatial Thinking. In: Bednarz, S.W., Mitchell, J.T. (eds) Handbook of Geography Education. *Springer International Handbooks of Human Geography*. Springer, Cham. https://doi.org/10.1007/978-3-031-72366-7_6
22. Messina, N. (2021). Traditional and innovative tools in teaching of geography: A case study. *Journal of research and didactics in geography*, 1(10), 95-107. http://www.j-reading.org/index.php/geography/article/view/280/262
23. Minz, A., & Tiwari, A. (2025). Nature of geography as a discipline. *International journal of innovative research in technology*, 11(11), 6964-6969. https://ijirt.org/publishedpaper/IJIRT174822_PAPER.pdf
24. Ministry of Education. (2020). *National Education Policy 2020*. Government of India. https://www.education.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf
25. Mukminan, M. (2018). Dimensions and factors of contemporary geography learning climate at senior high school. *Indonesian journal of geography*, 50(1), 78-86. https://doi.org/10.22146/ijg.34567
26. Nadila, D. R., Sari, Y. I., & Sakdiyah, S. H. (2025). Analysis of students' learning difficulties in geography subject in grade X at Diponegoro Dampit private high school. *International conference of technopedagogy and local wisdom*, 1, 83-89. https://conference.unikama.ac.id/artikel/index.php/ICTL/article/download/1213/1042
27. NCERT (2005). National curriculum framework 2005, NCERT, New Delhi. Retrieved from https://ncert.nic.in/pdf/nc-framework/nf2005-english.pdf
28. NCERT (2023). National curriculum framework for school education, 2023, NCERT, New Delhi. Retrieved from https://www.education.gov.in/sites/upload_files/mhrd/files/ncf_2023.pdf
29. Nepsha, O. (2024). Modern pedagogical technologies in teaching geography in secondary schools. In International collective monograph World Trends in the Use of Interactive Technologies in Education (p. 599). Zenodo. https://doi.org/10.5281/zenodo.11279872
30. Pereira, P., & Zhao, W. (2025). Geography and geographical knowledge contribute decisively to all sustainable development goals and targets. *Geography and sustainability*, 6(1), 1-13. https://doi.org/10.1016/j.geosus.2025.100267
31. Piotrowska, I., Cichon, M., Abramowicz, D., & Sypniewski, J. (2019). Challenges in geography education – A review of research problems. *Quaestiones geographicae*, 38(1), 71-84. https://doi.org/10.2478/quageo-2019-0009
32. Pokhrel, L., & Chhetri, R. K. (2024). Students' Perceptions Of Geography Education In Middle And High Schools: The Importance Of Geography Education In The Education Curriculum, Dagana Dzongkhag, Bhutan. *Jambura Geo education journal*, 5(1), 1-9. https://doi.org/10.37905/jgej.v5i1.22021

33. Rakgoale, M. S., Malahlela, T. (2025). Exploring the challenges faced by teachers and heads of departments in the teaching of grade 12 map work in secondary schools in Mankweng Circuit in Limpopo Province, South Africa. *Journal of education and learning technology*, 6(11), 1059-1069. https://noyam.org/wp-content/uploads/2025/11/JELT20256111-2.pdf
34. Rakuasa, H., & Latue, P. C. (2023). Role of Geography Education in Raising Environmental Awareness: A Literature Review. *Journal of Education Method and Learning Strategy*, *2*(01), 1–7. https://doi.org/10.59653/jemls.v2i01.293
35. Roberts, M. (2023). Powerful pedagogies for the school geography curriculum. *International Research in Geographical and Environmental Education*, *32*(1), 69–84. https://doi.org/10.1080/10382046.2022.2146840
36. Sarif, Md N., Khardewsaw, M., & Vandana, V. (2020). A qualitative study of students' interest, learning difficulty and teachers' teaching methods in geography in secondary schools of Meghalaya. *Indian journal of education*, XLVI(1), 128-144. https://ncert.nic.in/pdf/publication/journalsandperiodicals/journalofindianeducation/JIE-May2020.pdf
37. Shani, I. A., Alkali, M., & Ali, S. (2024). Factors Affecting Teaching and Learning of Geography in Senior Secondary Schools in Jere and MMC Local Governments of Borno State, Nigeria. *International journal of innovative research in technology, basic and applied sciences*, 7(1), 30-40. https://internationalpolicybrief.org/wp-content/uploads/2024/02/ARTICLE-4.pdf
38. Singh, S. (2024). Study and analysis of lecture model of teacher. *International journal of creative research thoughts*, 12(11), h465-h475. https://www.ijcrt.org/papers/IJCRT2411829.pdf
39. Solem, M. (2023). Geography Achievement and Future Geographers. *The Professional Geographer*, *75*(2), 207–219. https://doi.org/10.1080/00330124.2022.2081227
40. Solem, M., & Vaughan, P. W. (2023). Factors That Affect Student Outcomes in U.S. Geography Education. *Annals of the American Association of Geographers*, *113*(6), 1383–1401. https://doi.org/10.1080/24694452.2023.2187341