International Educational Research; Vol. 8, No. 2; 2025
ISSN 2576-3059 E-ISSN 2576-3067
https://doi.org/10.30560/ier.v8n2p151

From Rote to Real: To What Extend can Learner-Centred Pedagogy Enhance Knowledge-Based Geography Learning in Chinese Secondary Schools?

Zhuo Chen[1]

[1] School of Education, University College London, UK

Correspondence: Zhuo Chen, Institute of Education, University College London, London, WC1E 6BT, UK. Tel: 86-187-2463-9251. E-mail: czhuo197@gmail.com

Received: April 10, 2025; Accepted: April 18, 2025; Published: April 19, 2025

Abstract

This study investigates how learner-centred pedagogy can enhance knowledge-based geography education in Chinese secondary schools. Drawing on Watkins' (2017) framework of learning-centred classrooms, the research analyzes the potential integration of active, collaborative, learner-driven, and learning-focused approaches into China's traditional geography curriculum. While implementation faces cultural and systemic challenges within China's examination-oriented education system, findings suggest that learner-centred pedagogy can effectively complement the existing knowledge-based framework while developing critical thinking and collaborative skills. The study concludes that despite practical obstacles, this integrated approach offers a viable path to modernizing geography education in Chinese secondary schools while maintaining academic rigor.

Keywords: Chinese secondary schools, learner-centred pedagogy, pedagogical innovation

1. Introduction

Geography education in Chinese secondary schools is a domain that encompasses extensive research and study. Haohe and Bradbury (1993) pointed out that the National Teaching Programme in China precisely prescribes the course content for each grade. Geography teaching and learning are characterized by a strong emphasis on standardized teaching materials and knowledge. As a result, teachers tend to follow a tight structure in their teaching and assessment methods, leading to a dominant teacher-centred approach and a curriculum design that focuses on knowledge acquisition. This prevailing emphasis on rote memorization and rigidly defined subject knowledge has raised pertinent questions about the efficacy of traditional teaching methods in adequately preparing students for the multifaceted challenges of the contemporary world (Fu, 2020; Deng, 2015; Kirkpatrick and Zang, 2014; Qian, 2023). In this essay, I intend to provide a fresh perspective on geography education in secondary institutions in China, specifically by embracing the learner-centred pedagogy advocated by Watkins and Mortimore (1999), wherein the students assume the role of controllers of their own learning. Furthermore, I will elucidate the justification of this teaching method by employing Piaget's constructivist learning theory, and finally, analyze how the four critical aspects of composing a learning-centred classroom from Watkins (2017): Active, collaborative, learner-driven and learning-focused can be integrated into the study of geography in secondary schools.The significance of studying geography is unquestionable. Commencing from the fundamental level, Winter (2012) explained that the term 'geo-graphy' refers to 'descripting the earth'. By engaging in the study of geography, students can cultivate a fundamental understanding of the global landscape. Geography explains the knowledge that influences, constructs and organises the world, or more accurately, it teaches people to understand the nature of the world. However, the meaning and value of geography education go beyond the inculcation of knowledge. Geographical studies foster an understanding of multiculturalism, the environment, and sustainable development techniques (Meadows, 2020). As Chang and Kidman (2019) describe, geography courses have adapted to the swiftly evolving concerns that impact humanity. These encompass a heightened emphasis on subjects about environmental change and globalization. Further, geography education is essential for enhancing students' thinking ability, especially critical reasoning abilities (Williams, 2006).

Chinese secondary school students (aged 13-18) are in a critical period of the formation of critical thinking (Zaden et al., 2020). As per the objectives of geographical education delineated in the 2016 International Charter on Geographical Education (International Geographic Union–Commission on Geographical Education, 2016), it is crucial that in addition to imparting knowledge, schools should facilitate the development of practical skills and

attitudes in geography students that will be advantageous in the challenges and complexities of the twenty-first century. Moreover, it is not just China where the pedagogy of geography education needs constant improvement and enhancement. Given the challenges of globalization, climate change, and other dynamic issues that citizens worldwide will encounter, it is imperative for schools to enhance geography pedagogy to equip students with the necessary skills to be competent global citizens in the 21st century (Chang and Kidman, 2019).

2. Context

The geography education in China is convoluted, underrated and examination-oriented (Yang, 2013; Lee and Tang, 1982). According to Haohe and Bradbury (1993), the organisation of the University Entrance Examination (UEE), a compulsory test for Chinese students applying to higher education institutions, is a significant factor that makes geography education a debatable subject. Currently, geography is not obligatory for the Science UEE. However, it is mandatory for the Art UEE (This makes geography education more contradictory, as many Chinese universities categorise geography as a major that only science students can continue to study). It is evident that due to the significance of securing a spot at university, schools prioritise subjects required by the UEE, hence causing harm to other disciplines (Shun, 1991). Therefore, compared to Chinese and Mathematics, which are compulsory subjects for all students in the UEE, geography is not given the same importance to teach at a secondary school level. Gao (2003) concludes that this condition may result in a problematic scenario: the perception for students that geography consists solely of cramming facts and coping with examinations and that mere memorisation via repetition is sufficient.

A knowledge-based curriculum, explained by Ress and White (2014), is an educational mode that prioritises the acquisition of precise, structured, and clearly defined knowledge across different topic domains. This curriculum emphasises the transmission of a fundamental set of knowledge, facts, and ideas that students are required to acquire and become proficient in. The objective is to furnish a well-organised and all-encompassing basis of knowledge in fundamental fields of study. Typically, the assessment method involves evaluating students' comprehension and retention of factual material. Standardised testing is also employed to evaluate proficiency. This description is consistent with China's dominant curriculum model that emphasises geographical, disciplinary knowledge (He et al., 2022). As Hirsch (2016) states, the benefits of this curriculum are to prepare students for higher education and underscore the significance of knowledge.

However, as mentioned above, the geography pedagogy needs to be continually improved and adapted to equip students with more abilities. A learner-centred pedagogy analysis by Watkins (2017), in which students are motivated to learn, actively engrossed in their education, and accountable for their learning, can vastly improve geography education at the secondary level (Lekule and Langu, 2017). By creating an active and effective learning environment, this pedagogy enables students to become masters of their education by shifting the emphasis from the instructor to the learner (Bremner,2021). Teachers are facilitators in the learning process and also learn in the process. This pedagogical approach aligns with constructivist learning theory of Piaget (1954), which coined the term "constructivism" to describe how individuals develop their knowledge through ongoing, active interactions between the environment. Piaget highlighted the proactive involvement of learners in the process of developing their own knowledge. Learning is an active process involving interaction with the environment; it is not a passive process of information absorption (Pardjono, 2016). In other words, by seeing students as active agents in creating meaning, pedagogy should be structured to involve students in developing their own comprehension, allow students to become active leaders in the learning process (Morre, 2012). The key to this mode of teaching is the creation of a learning-centred classroom where the teacher, as Piaget's theory suggests, is also the co-constructor of the learning environment (Waite-Stupiansky, 2013). Morre (2012) further demonstrated that this pedagogy improves learning, boosts motivation, and develops critical thinking skills, which are crucial for secondary school students in China.

3. Literature Review

3.1 Shift in Policy

Adopting learner-centred pedagogy satisfies the criteria outlined in the new Chinese geography teaching policy for geography education. With the rapid evolution and advancement of China's social system and economy, there is a growing societal need for educational reform. The Chinese government introduced the Outlines for Basic Education Curriculum Reform in 2001. The reform shifted the focus of textbook writing from subject to student-centred (Ministry of Education China, 2001). New geography standards for secondary were also gradually reformed and defined. By 2007, the revised standards emphasised the need for geographic education to move beyond a narrow focus on acquiring academic information and instead prioritise the development of comprehensive geography literacy that is beneficial for students' lives and lifelong growth (Ministry of Education

China, 2007). Regarding teaching methods, the new geography curriculum reform requires teachers to guide students in teaching through independent, cooperative and enquiry learning. This is a breakthrough from the traditional teacher-centred didactic teaching methods. Furthermore, concerning evaluating students' performance, the previous curriculum emphasised the learning outcomes of subject knowledge as demonstrated through a paper examination. In contrast, the revised standards prioritise assessing students' learning processes through utilising multiple exams. It is on the basis of these policy changes that the emergence of a learner-centred education model in the Chinese classroom at the secondary level has become possible.

3.2 Creating a Learning-Centred Classroom

According to Watkins (2017), a learning-centred classroom is where the focus is on the learning process and the needs of the students. Any themes or forces that create an impediment to this process can be considered as 'Space Invaders'. For example, the three common 'space invaders' for establishing a learning-centred classroom are Teaching, Performance and Work. An excessive emphasis on teaching detracts from the significance of the learning, the prioritisation of quantifiable results and achievements, which may eclipse the actual process of acquiring knowledge and skills, and the use of the term "work" in the classroom may foster the belief that learning is contingent upon the successful completion of allotted duties. Thus, to maximise the benefits of learner-centred pedagogy, it is important to steer clear of these three 'Space Invaders'.

Additionally, Watkins (2017) proposes four critical components for establishing a classroom centred on learning, which are active, collaborative, learner-driven, and learning-focused. These four areas will be critically analysed on to what extent they can enhance geography learning in Chinese secondary schools:

3.2.1 Active Learning

According to Sheyvens (2008), active learning encompasses a vast array of instructional approaches that seek to motivate students to engage actively in the learning process (also known as "learning by doing"). Active learning necessitates more than mere task engagement; it should also foster critical thinking and introspection regarding the activities being learned (Bonwell & Eison, 1991). Furthermore, to know what approaches are included in active learning can be seen in reverse by what it is not: for instance, students who are merely apathetically attending the lecture. In this conventional educational setting, it is entirely feasible for students to pretending to be listening to lectures without actively thinking about what is being taught. In contrast, Hanson and Moser (2003) identify that active learning can increase student’s interest and motivation to engage in the learning process by utilising learning tactics such as role play and simulations, as well as conducting data gathering and analysis.

Implementing active learning techniques in geography education can significantly enhance students' comprehension and assimilation of geographic knowledge. Sheyvens (2008) discusses four cases of adopting active learning methods in geography class, which are: 'Techniques in Geography' with problem-based learning, 'World Regional Geography' with online conversations, 'Development and Inequality' with journal reading, and 'Environmental Hazards' with e-portfolios. In all four cases, most students responded that the use of active learning improved their ability to receive new knowledge compared to the traditional rote memorisation and passive acceptance of content taught by the lecturer, and some even indicated that they were beginning to understand the objectives of the course and the significance of geography learning. This informs the implementation of active learning methodologies in Chinese secondary schools' geography curricula, such as hands-on activities, experiments, and fieldwork that facilitate a more profound comprehension of geographical topics by enabling students to employ academic knowledge in practical scenarios.

It is crucial to acknowledge that including an active learning approach does not imply the exclusion of lecturing inside the active learning paradigm. The key to active learning is encouraging students to take an active role in their learning. Given the effectiveness of lectures in conveying knowledge (Bligh, Citation2000), there is no justification for not using them to achieve this purpose or combining them with active learning approaches to achieve other objectives. Jenkins (1992) suggests that active learning can be blended with traditional lecture-based teaching approaches. For example, an instructional session may encompass the utilisation of lecturing in conjunction with buzz groups, analysis of a film, and enactment of role play.

3.2.2 Collaborative Learning

Collaborative learning is a learning model that responds to the current trends. Laal and Laal (2012) describe Collaborative learning (CL) as an instructional method where students collaborate in groups to collectively address an issue, accomplish a task, or produce an outcome. Within the CL setting, learners face social and emotional challenges as they actively engage with diverse perspectives and are expected to express and support their own opinions effectively. By doing this, the learners initiate the development of their own distinct conceptual

frameworks rather than depending entirely on the frameworks provided by experts or texts. This method has further proved to be particularly suitable for secondary school students from the Generation-Z (Gen-Z) group (Children born between 1997 and 2012) for the reason that Gen-Z learners prefer observation and practice over merely reading and listening to explanations and, therefore, have a higher motivation when engaged in collaborative learning (Iftode, 2020; Schlee, Eveland, and Harich, 2020).

Incorporating collaborative learning into the geography curriculum at the secondary level can facilitate the learning experience for students and develop other skills such as communication and cooperation. Purwantara (2023) proves geography is an ideal subject for a collaborative learning paradigm due to the numerous practical exercises that students can engage in through group project work. He further designed a geography classroom model encouraging students to learn through group discussion and work to obtain information. Within the Chinese secondary school geography curriculum, educators can foster collaboration among students by allocating group assignments, facilitating peer-to-peer talks, and promoting teamwork.

Collaborative learning is, nevertheless, rendered ineffectual in the absence of support from both instructors and learners. Teachers must moderate diverse students in order to prevent obstacles in the process of intra and inter-student interactions (Shea, 1995). According to Purwantara (2023), although many teachers have included collaborative learning in their teaching practices, they often fail to grasp the fundamental principles of this learning model. Instead, they continue to rely on traditional teaching approaches such as lectures or question-and-answer sessions. Hence, implementing this strategy in real-world scenarios necessitates more preparation from both the teacher and pupils.

3.2.3 Learner-Driven Approach

A learner-driven approach is one in which students feel a sense of control and proprietorship over their education. In other words, Students ought to be regarded as agents of transformation in the realms of education and instruction. They are encouraged to assume accountability for their learning journey, establish objectives, and make decisions (Bremner,2022; Fielding, 2001). Tilbury and Wortman (2008) argued that students can become more involved in the community when they are empowered to direct their own learning and are encouraged to take initiative. Therefore, by identifying issues and formulating solutions and courses of action, students can develop into "transformative thinkers" who are also capable of negotiation, self-initiated action, and foresight. In this particular context, distinguishing learner-driven learning from learner-centred learning is necessaty. According to Herranen, Vesterinen and Aksela (2018), the term "centre" refers to "the most significant or pivotal point, area, individual, or object in relation to a specified activity, interest, or condition" (Oxford Dictionary). Therefore, the learner is the primary consideration in learner-centered pedagogy when determining instructional and learning activities. The definition of 'driven', on the other hand, is "propelled or motivated by something" (Oxford Dictionary). Thus, a learner-driven approach is that learners actively participate in pedagogy, propelling their own learning.

In education practice, the learner-driven approach is perceived as a more unconventional, ambiguous pedagogical approach that is innovative and novel. In the investigation demonstrated by Herranen, Vesterinen and Aksela (2018), the course designer incorporated a learner-driven project assignment. The inquiry-based methodology was utilised to complete the project; participants developed the project following their thoughts, desires, and concerns. Students express a sense of enhanced freedom and creativity during this learning process. A learner-driven approach in secondary school geography education could allow students to explore specific areas of interest within geography and personalised learning experiences. This technique can enhance students' assimilation of geographic knowledge due to its ability to cultivate curiosity and a fervour for geography. Students can explore subjects that align with their interests, fostering a deeper engagement with the subject matter.

However, as mentioned above, this is a very challenging approach. When transitioning to the learner-driven method, it is vital for learners to understand that they are responsible for taking ownership of their knowledge and learning (Herranen, Vesterinen and Aksela (2018). This is a challenge for both the teacher's pedagogical skills and the student's capacity to learn.

3.2.4 Learning-focused Design

A learning-focused teaching prioritises the practical use of knowledge and skills rather than mere memorisation. It fosters students' cultivation of a profound comprehension of the subject matter and their ability to establish correlations among various concepts. The primary emphasis is cultivating enduring learning abilities and nurturing a passion for acquiring knowledge (Watkins, 2017; Sagendorf, Noyd and Morris,2009). Ambrose et al. (2010) contends the significance of designing an environment conducive to learning that considers students' cognitive processes and metacognitive skills. When learning is the primary focus in the classroom, it is more critical that students develop thinking and learning methods. At this time, students will frequently require the teacher's

assistance in acquiring, honing, and implementing fundamental metacognitive abilities. In order to meet these demands, instructors must contemplate the long-term benefits these abilities can provide students. Subsequently, when applicable, incorporate the cultivation of metacognitive skills into the objectives of the courses (Sagendorf, Noyd and Morris,2009).

In geography education, learning-focused design involves teachers providing opportunities for self-assessment and simple heuristics for self-correction. For example, teachers could administer mock examinations (or similar tasks) to students that simulate the types of problems they will encounter in actual tests and thereafter furnish them with answer keys to enable self-assessment. It is crucial to emphasise to students that the genuine advantages stem from engaging in the activity—specifically, resolving problems or composing responses to illustrative essay prompts—and reflecting on the experience instead of merely perusing the provided answers. As for simple heuristic for self-correction, motivate students to consider whether their response is rational in light of the problem. When the response is illogical—for instance, A high latitude region in the northern hemisphere sunrises earlier than a low latitude region in winter—the pupil recognises his error and has the option to reevaluate his reasoning or perform another calculation ((Sagendorf, Noyd and Morris,2009).

It is worth noting that there is another learning-focused design mentioned by Watkins (2017), which is appreciative inquiry. According to Watkins (2017), appreciative inquiry is a change management approach that entails encouraging participants to reflect on their most memorable experiences, envision what could be achieved if these experiences were more prevalent, devise innovative strategies to acquire more of them, and subsequently execute modifications grounded in this iterative process. The process centres on the identification and development of the positive attributes and strengths of both organisations and individuals. While implementing this approach may place a burden on the teacher to instruct, it serves as a valuable tool for enhancing students' efficiency in geography learning and fostering a positive feedback loop (Wynn Roberts, 2010).

4. Discussion

The four core elements of building a learning-centred classroom mentioned by Watkins (2017) are vital to practising learner-centred pedagogy. On the other hand, practice is never as straightforward as theory and is susceptible to various complex influences, including the culture and environment in which it occurs. From a cultural perspective, traditional Chinese Confucianism and culture deeply influence pedagogy. Li (2015) argues that Confucian philosophy emphasises knowledge mastery through rote learning, memorising and repetition. The teacher's pivotal role in facilitating the teaching and learning process was also underscored. Therefore, culture is prone to create resistance to learner-centred pedagogy. Furthermore, according to Watkins and Mortimore (1999), the environment in which a school operates can significantly influence the academic progress of students and the pedagogy employed by teachers. More precisely, the pedagogy of instructors can be influenced by policies and school expectations related to evaluation, discipline, and classroom management. Teachers must ensure that their instructional tactics align with school policies and expectations, which might impact their methods of planning, assessment, and classroom interactions. When considering this matter, it is essential to examine whether learner-centred pedagogy can effectively align with the policies and circumstances of Chinese secondary schools, which prioritise performance and grades. Geography education in secondary schools, whether high school or junior high school, is still very much geared towards the Gao Kao (China's national college entrance examination), and student's ability to achieve satisfactory results after teaching is the main requirement for teachers to teach. According to Huang et al. (2018), the geography of this phase of teaching is primarily Gaokao-Oriented Knowledge. Specific manifestations can be seen in the assessment methodology, primarily multiple-choice questions that compare one thing to another and need a high level of knowledge. Indeed, following the implementation of reforms, the teaching of geography has significantly enhanced the cultivation of students' competencies and skills, aligning with the learner-centred approach's emphasis on skill development. However, as NewsRx Science (2022) reported, although this teaching approach has been proven to effectively increase motivation, confidence, and improve relationships. There is scant evidence to suggest that it is more efficacious than the methods employed by teachers in the past. It is, therefore, difficult to say whether teachers will actually adopt this pedagogy in practice in the face of the pressures of teaching and learning outcomes and scrutiny of student performance.

5. Conclusion

Through the analysis above, a learner-centred pedagogy can contribute to a large extent to the knowledge-based curriculum of secondary schools' geography in China. Firstly, it complements the knowledge-based geography classroom while simultaneously supporting its objectives. In active and collaborative learning, implementing learner-centred approaches can optimise the efficacy of a knowledge-based curriculum by actively involving

students in the learning process. During this process, students not only acquire fundamental knowledge but also enhance their motivation, as well as develop other abilities such as communication, collaboration, and critical thinking. This counterbalances the conventional educational approach of rote memorisation of knowledge in a classroom setting (Watkins, 2017). Secondly, integrating learner-centred pedagogy and knowledge-based curriculum is beneficial for the student's holistic development. In an interview conducted by Fu (2020) with a teacher with 30 years of teaching experience in China, the teacher suggests that a knowledge-based curriculum holds inherent significance in preserving the nation's culture and diversity while also fostering a solid foundation of knowledge for pupils. When confronted with the demands of curriculum reform, he did not fully adopt the learner-centred pedagogy but integrated it into the knowledge-based curriculum, which yielded better results. Learner-centered pedagogy facilitates the cultivation of skills and attitudes, while a knowledge-based curriculum guarantees a comprehensive understanding of academic subjects. This model facilitates pupils' attainment of holistic development. Finally, a learner-centred pedagogy increases flexibility in application. While a knowledge-based curriculum establishes the requirements for the content, learner-centred pedagogy provides flexibility in the delivery, adaptation, and personalised experience of that subject. Through a learner-driven approach and learning-focused design, students are encouraged to participate in class discussions, collaborate with their peers, and pose pertinent questions. Implementing this interactive methodology cultivates a more profound comprehension of the subject matter and advances the development of critical thinking abilities. During this process, pupils assume control over their learning and are driven to acquire knowledge.

In summary, while implementing learner-centred pedagogies in Chinese geography classrooms may face practical challenges, the existing body of evidence indicates that this pedagogy is potentially beneficial for the teaching and learning of knowledge-based curricula. In the 21st century, an era when business executives, educational organisations, and scholars are advocating for new education policies that focus on cultivating versatile skills and knowledge such as communication, critical thinking and problem-solving, creativity and innovation, and collaboration (National Academies of Sciences, Engineering, and Medicine, 2012), learner-centred pedagogy follows the trend of the times and brings breakthroughs in secondary school geography education in China.

References

Ambrose, S. A., Bridges, M. W., DiPietro, M., Lovett, M. C., & Norman, M. K. (2010). *How learning works: Seven research-based principles for smart teaching*. San Francisco, CA: Jossey-Bass.

Bligh, D. A. (2000). *What's the use of lectures?* San Francisco, CA: Jossey-Bass.

Bonwell, C. C., & Eison, J. A. (1991). *Active learning: Creating excitement in the classroom*. ERIC Digest.

Bremner, N. (2021). The multiple meanings of 'student-centred' or 'learner-centred' education, and the case for a more flexible approach to defining it. *Comparative Education, 57*(2), 159–186. https://doi.org/10.1080/03050068.2020.1805863

Bremner, N., Peppin Vaughan, R., & Shah, R. (2022). The outcomes of learner-centred pedagogy: A systematic review. *International Journal of Educational Development, 94*, 102649. https://doi.org/10.1016/j.ijedudev.2022.102649

Chang, C. H., & Kidman, G. (2019). Curriculum, pedagogy and assessment in geographical education – for whom and for what purpose? *International Research in Geographical and Environmental Education, 28*(1), 1–4. https://doi.org/10.1080/10382046.2019.1578526

Centre. (n.d.). Centre. *Oxford English Dictionary*. Retrieved January 7, 2024, from https://www.oed.com/dictionary/centre_n1?tab=meaning_and_use#9943989

Deng, Z. (2015). Michael Young, knowledge and curriculum: An international dialogue. *Journal of Curriculum Studies, 47*(6), 723–732. https://doi.org/10.1080/00220272.2015.1101492

Driven. (n.d.). Driven. *Oxford English Dictionary*. Retrieved January 7, 2024, from https://www.oed.com/dictionary/driven_adj?tab=factsheet#6011375

Fielding, M. (2001). Students as radical agents of change. *Journal of Educational Change, 2*, 123–141.

Fu, G. P. (2020). The knowledge-based versus student-centred debate on quality education: Controversy in China's curriculum reform. *Compare: A Journal of Comparative and International Education, 50*(3), 410–427. https://doi.org/10.1080/03057925.2018.1523002

Gao, C. J. (2003). A narrative of the reform of secondary geography textbooks over past decades [in Chinese]. *Curriculum, Teaching Material and Method, 5*, 55–58.

Hanso, S., & Moser, S. (2003). Reflections on a discipline-wide project: Developing active learning modules on the human dimensions of global change. *Journal of Geography in Higher Education, 27*(1), 17–38.

He, Y., Zhang, X., & Wang, Y. (2022). Exploring the gap between academic geography and school geography: Knowledge transformation of the competencies-based curriculum making in China. *Geography, 107*(3), 128–136.

Herranen, J., Vesterinen, V.-M., & Aksela, M. (2018). From learner-centered to learner-driven sustainability education. *Sustainability, 10*(7), 2190. https://doi.org/10.3390/su10072190

Hirsch, E. D. (2016). *Why knowledge matters: Rescuing our children from failed educational theories*. Cambridge, MA: Harvard Education Press.

Huang, X., Li, J., & Zhang, Y. (2018). Geography Gaokao-oriented knowledge acquisition for comparative sentences based on logic programming. In *Lecture Notes in Computer Science* (Vol. 11142, pp. 101–113). Springer International Publishing. https://doi.org/10.1007/978-3-030-01310-3_9

Iftode, D. (2020). Generation Z and learning styles. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3518722

International Geographic Union–Commission on Geographical Education. (2016). *International charter on geographical education*. Retrieved January 7, 2024, from http://www.igu-cge.org/2016-charter

Jenkins, A. (1992). Active learning in structured lectures. In G. Gibbs & A. Jenkins (Eds.), *Teaching large classes in higher education* (pp. 63–77). London: Kogan Page.

Kirkpatrick, R., & Zang, Y. (2014). Erratum to: The negative influences of exam-oriented education on Chinese high school students: Backwash from classroom to child. *Language Testing in Asia, 4*(1), 1. https://doi.org/10.1186/2229-0443-4-1

Laal, M., & Laal, M. (2012). Collaborative learning: What is it? *Procedia - Social and Behavioral Sciences, 31*, 491–495. https://doi.org/10.1016/j.sbspro.2011.12.092

Lee, C. F., & Tang, J. Z. (1982). Geography in higher education in China. *Journal of Geography in Higher Education, 6*(1), 47–55. https://doi.org/10.1080/03098268208708833

Lekule, T., & Langu, N. (2017). The effectiveness of learner-centred approach in teaching and learning geography in secondary schools: A case of Nkoaranga and Nasholi Secondary Schools in Arumeru. *Tanzania Journal of Education, 3*, 126–136.

Li, L. (2015). A Confucian perspective on teaching thinking in China. In R. Wegerif, L. Li, & J. C. Kaufman (Eds.), *The Routledge international handbook of research on teaching thinking* (pp. 69–81). Routledge.

Meadows, M. E. (2020). Geography education for sustainable development. *Geography and Sustainability, 1*(1), 88–92.

Ministry of Education. (2001). Outlines for basic education curriculum reform [in Chinese]. *People's Education, 9*, 6–8.

Ministry of Education. (2007). Geography curriculum standards for general senior secondary schools [in Chinese]. Retrieved January 7, 2024, from http://www.moe.gov.cn/srcsite/A26/s8001/202204/W020220420582354066450.pdf

Moore, A. (2012). Theories of teaching and learning. In *Teaching and learning* (2nd ed., pp. 30). Routledge.

NewsRx Science. (2022). Little objective evidence to show effectiveness of learner-centred teaching methods, study warns. Retrieved January 7, 2024, from https://link-gale-com.libproxy.ucl.ac.uk/apps/doc/A728046223/AONE?u=ucl_ttda&sid=bookmark-AONE&xid=e4d464e7

National Academies of Sciences, Engineering, and Medicine. (2012). *Education for life and work: Developing transferable knowledge and skills in the 21st century*. Washington, DC: The National Academies Press.

Piaget, J. (1954). *The construction of reality in the child* (M. Cook, Trans.). Routledge & Kegan Paul.

Pardjono, P. (2016). Active learning: The Dewey, Piaget, Vygotsky, and constructivist theory perspectives. *Journal Ilmu Pendidikan (Jakarta), 9*(3).

Purwantara, S., Farisi, M. I., & Rofiuddin, A. (2023). Teaching the fundamentals of geography to Generation-Z students with collaborative learning in Indonesia. *Geography Teacher, 20*(1), 29–34. https://doi.org/10.1080/19338341.2022.2163494

Qian, C. (2023). A comparative analysis of Chinese traditional educational thought and Western educational thought—Taking Chinese high school education as an example. *Interdisciplinary Humanities and Communication Studies, 1*(2).

Reiss, M. J., & White, J. (2014). An aims-based curriculum illustrated by the teaching of science in schools. *The Curriculum Journal, 25*(1), 76–89. https://doi.org/10.1080/09585176.2013.874954

Sagendorf, K., Noyd, R. K., & Morris, D. B. (2009). The learning-focused transformation of biology and physics core courses at the U.S. Air Force Academy. *Journal of College Science Teaching, 38*(3), 45–50.

Scheyvens, R., Griffin, A. L., Jocoy, C. L., Liu, Y., & Bradford, M. (2008). Experimenting with active learning in geography: Dispelling the myths that perpetuate resistance. *Journal of Geography in Higher Education, 32*(1), 51–69. https://doi.org/10.1080/03098260701731496

Schlee, R. P., Eveland, V. B., & Harich, K. R. (2020). From Millennials to Gen Z: Changes in student attitudes about group projects. *Journal of Education for Business, 95*(3), 139–147. https://doi.org/10.1080/08832323.2019.1622501

Shea, J. H. (1995). Problems with collaborative learning. *Journal of Geological Education, 43*(4), 306–308. https://doi.org/10.5408/0022-1368-43.4.306

Shun, D. (1991). Consideration of the reform of geography course and texts. *Geography Teaching, 7*, 2–4.

Tilbury, D., & Wortman, D. (2008). How is community education contributing to sustainability in practice? *Applied Environmental Education & Communication, 7*, 83–93. https://doi.org/10.1080/15330150802185930

Waite-Stupiansky, S. (2023). Jean Piaget's constructivist theory of learning. In L. J. Santoro (Ed.), *Theories of early childhood education* (2nd ed., pp. 3–18). Routledge.

Watkins, C. (2017). Developing learning-centred classrooms and schools. In R. Maclean (Ed.), *Life in schools and classrooms* (Vol. 38, pp. 443–457). Springer. https://doi.org/10.1007/978-981-10-3654-5_25

Watkins, C., & Mortimore, P. (1999). Pedagogy: What do we know? In C. Watkins & P. Mortimore (Eds.), *Understanding pedagogy and its impact on learning* (pp. 1–19). London: SAGE Publications Ltd. https://doi.org/10.4135/9781446219454

Williams, M. (2006). *Geographical education in a changing world: Past experience, current trends and future challenges*. Dordrecht: Springer.

Winter, C. (2012). Enframing geography: Subject, curriculum, knowledge, responsibility. *Ethics and Education, 7*(3), 277–290. https://doi.org/10.1080/17449642.2012.732121

Wyn Roberts, G. (2010). Advancing new approaches to learning and teaching – Introducing appreciative inquiry to a problem-based learning curriculum. *Journal of Applied Research in Higher Education, 2*(1), 16–24. https://doi.org/10.1108/17581184201000004

Yang, D. (2013). Comparing assessments within junior geography textbooks used in mainland China. *Journal of Geography, 112*(2), 58–67. https://doi.org/10.1080/00221341.2012.701204

Zanden, V. D., Denessen, E., Cillessen, A. H. N., & Meijer, P. C. (2020). Fostering critical thinking skills in secondary education to prepare students for university: Teacher perceptions and practices. *Research in Post-Compulsory Education, 25*(4), 394–419. https://doi.org/10.1080/13596748.2020.1835379

Zhaohe, W., & Bradbury, I. K. (1993). Geography in high schools in China. *Journal of Geography, 92*(6), 244–246. https://doi.org/10.1080/00221349308979147