

Exploration of Immersive Geography Teaching Mode from the Perspective of Local Attachment Cultivation

Yihan Tu, Shiying Yan, Keying Wang

Zhejiang Normal University, Jinhua, 321004, Zhejiang, China

Abstract: Rooted in innate geographical and ancestral ties, local attachment encompasses an individual's pride and affection for their hometown's history, customs, products, and landmarks, alongside their concern for its progress. In an era of rapid development and diverse cultural influences, there's a growing need to rekindle the local attachment. The value and practical benefits of urban regional and historical culture require exploration. The absence of local identity among students and the insufficient development of core geographical competencies pose significant challenges to high school geography education. Using Hangzhou as a case study, this paper explores the immersive geography teaching model from the perspective of local attachment cultivation. By integrating regional cultural resources and sorting out the context of urban development, we develop school-based courses with regional characteristics and innovate teaching methods and evaluation systems to build student-centered, immersive classrooms. The research reveals that this model can effectively improve students' local cognition, emotional identity, and practical ability, thereby promoting the development of core geographical competencies and realizing students' diversified and all-round development.

Keywords: Local attachment, Immersive Teaching, Geography teaching, School-based curriculum

1. Introduction

Local attachment is deeply ingrained in the bonds of geography and kinship. It encompasses not only the recognition of local customs and traditions but also a sense of responsibility towards the development and progress of one's hometown. In the contemporary era of intense cultural diversity, the resurgence of local attachment has become increasingly pressing. However, within the education domain, notable deficiencies persist in integrating local culture and regional characteristics [1]. Contemporary students generally exhibit a deficiency in local attachment, demonstrating limited knowledge of indigenous cultures. As a subject of both natural science and human science, geography in high school is expected to foster students' capacity to recognize and comprehend diverse geographical environments. Therefore, it has become increasingly crucial to explore the effective integration of local resources within geography teaching in senior high school.

With a long history, vast territory, and numerous ethnic groups, China has formed a rich and colorful regional culture with its characteristics, which is an inexhaustible treasure and wealth for high school geography education. This paper focuses on Hangzhou, a city in China boasting unique regional cultures and a long development history, as the research object. It examines and analyzes ways to integrate local regional and historical culture into geography teaching, exploring an immersive geography teaching model from the perspective of local attachment cultivation. Through this research, we seek to expand teaching paradigms and elevate teaching quality, thereby facilitating the cultivation of students' core competencies and achieving students' diversified and all-round development.

2. The Relationship between Local Attachment and Geography Teaching

Attachment to one's hometown is a deep-seated emotion encompassing love, a sense of belonging, and responsibility. It also includes a range of attitudes and behaviors stemming from these feelings. This sentiment drives individuals to connect with their hometown, willingly dedicating themselves to its development, service, and contribution. It is the driving force behind their desire and motivation to actively promote their hometown's progress. Local attachment, centered around the most profound sense of local consciousness, can be categorized into three dimensions: cognition, emotion, and behavior. The essence of the local curriculum ought to be to guide students in cultivating healthy life skills and rich emotional experience and emphasize the teaching designs founded on adolescents'

cognitive development levels and the unique local culture.

Since the emergence of modern regional geography, local geography has held a significant position within the discipline of geography. In the 17th century, Comenius was the first to propose the concept of local geography and believed that the study of local geography serves as the foundation for geographical research. At the dawn of the 20th century, Alfred Huttner suggested that geography courses should commence with local history as a starting point for instruction ^[2]. The 2015 *International Declaration for Geographical Education* stimulates students to explore geographical topics across diverse scales, including national contexts and globally. It underscores that geography education should empower students to comprehend their actions and assume corresponding responsibilities at scales spanning from the local to the global level ^[3]. Thus, local geography is a crucial component of high school geography teaching.

3. Overview of Immersive Teaching

Flow theory posits that individuals will enter a state of immersion when fully engaged in an activity, characterized by focused attention and the filtering out of irrelevant perceptions. Csikszentmihalyi pointed out that immersion is the optimal experience in learning and working, and the internal satisfaction it brings can make people engage in tasks with interest, forget fatigue, keep exploring, and constantly reach new goals ^[4]. Achieving this experience necessitates learners' deep engagement within a challenge-skill balance. Key elements include clear goals, immediate feedback, and the merging of situation and awareness.

Immersion Teaching, which originated in Canada in the 1960s, was originally a teaching mode based on subject content and with the target language as the medium of instruction ^[5]. This approach has since been used for reference across numerous countries and regions, significantly influencing classroom practices globally. Prioritizing student-centered learning is a practical application of Constructivist learning theory.

4. Analysis of the Current Situation of Geography Teaching in Senior High Schools

4.1. The Cultivation of Competencies as a New Orientation of Curriculum Objectives

With the continuous development and evolution of education, geography teaching in senior high schools is undergoing a profound transformation. Notably, the cultivation of students' geographical literacy has emerged as a new focal point in curriculum objectives. Teachers should not limit their activities to the transformation of knowledge and information. Instead, they are expected to enhance students' spatial literacy across local, national, and even global scales ^[6]. *Geography for life: National geography standards* underscore that the content of the geography curriculum should be closely tied to real life. It emphasizes the need to consider how different regional environments shape diverse life experiences and cognitive perspectives among people while also highlighting the importance of cultivating students' ability to address practical problems ^[7]. This requires teachers to pay attention to the combination of knowledge and real life during the teaching process by creating authentic situations, thus improving students' comprehensive quality.

4.2. Challenges in Geography Teaching Requiring Resolution

Currently, traditional classroom teaching remains the dominant mode in senior high school geography education, presenting numerous challenges. The creation of teaching scenarios predominantly relies on teachers' personal experiences, which makes it difficult to fit students' interests. The majority of teaching activities are carried out in the classroom. Given the highly practical and comprehensive nature of geography, a single teaching venue is not conducive to enhancing students' capabilities to apply geographical knowledge to solve practical problems. Furthermore, an authentically equal teacher-student relationship has yet to be established. Teachers often function as mere knowledge transmitters, while students are more inclined to receive knowledge passively, lacking the awareness of active thinking.

5. Construction Strategies of Immersive Geography Teaching Model from the Perspective of Local Attachment Cultivation

5.1. Developing School-based Curriculum by Integrating Local Elements

Geography is a subject closely related to life, with typical regional and comprehensive. With the development history of the city as the main clue and the unique regional culture of each region as the auxiliary clue, the curriculum system and teaching content of school-based courses are designed scientifically and reasonably in combination with the requirements of subject core literacy and course content in the *General high school geography curriculum standards* (2017 edition, revised in 2020). This kind of school-based curriculum enables students to take their hometowns as the context and independently explore the geographical reasons for urban development, ups and downs, so that they can apply geographic knowledge to solve real-world problems in the link of traditional geography curriculum and school-based curriculum.

The development of school-based local geography textbooks centering on the history of urban development can not only stimulate students' motivation and initiative in geography learning, but also better implement the core quality of geography and realize the transfer of knowledge and interdisciplinary integration among the four subjects of Politics, History, Geography, and Biology. In addition, it can also encourage students to deeply understand the historical context and cultural characteristics of their hometown, enhance their sense of identity and belonging to their hometown, and cultivate local feelings.

Taking Hangzhou as an example, the local geography school-based textbooks of local high schools can be designed around Hangzhou's developmental history and structured into six thematic units, covering the pattern of mountains and seas, prehistoric civilization, the early formation of heaven, the surging tide, and the blueprint of the future. The theme of each unit and its corresponding schedule requirements are shown in Table 1.

Table 1: Hangzhou school-based teaching materials organization framework

Unit	Theme	Corresponding to the curriculum standard requirements ^[8]
Unit 1: Between the mountains and the sea—the physical geography pattern of Hangzhou	Five hundred miles landscape pattern	Compulsory 1: 1.4 Through field observation or the use of video and images, identify 3 to 4 landforms and describe the main characteristics of their landscapes. Optional compulsory 1: 1.9 Use charts and examples to analyze the integrity of the natural environment and the law of regional differentiation.
Unit 2: The dawn of civilization—Hangzhou prehistoric culture and early human and local wisdom	Kuahuoqiao Culture—the representative of the Neolithic period	Compulsory 1: 1.11 Use data to explain the causes of common natural disasters and understand the measures to avoid and prevent disasters. Compulsory 2: 2.1 Use data to describe the characteristics and influencing factors of population distribution and migration, and explain the regional resource and environment carrying capacity and population rationalization in combination with examples. 2.2 Explain the inner spatial structure of towns and villages with examples, and explain the significance of rational use of urban and rural space. 2.3 Illustrate the embodiment of regional culture in urban and rural landscapes with examples.
	Liangzhu Culture—ecological wisdom from 5,000 years ago	

Continuation of Table 1: Hangzhou school-based teaching materials organization framework

Unit	Theme	Corresponding to the curriculum standard requirements[8]
Unit 3: The initial formation of paradise—the human geography of West Lake and Grand Canal	West Lake—the integration of ecology and culture	Optional compulsory 1: 1.3 Explain the influences of internal force and external force on the change of surface morphology with examples, and illustrate the relationship between human activities and surface morphology. Compulsory 2: 2.6 Illustrate the relationship between transportation mode and traffic layout and regional development by examples.
	The Grand Canal—the economic link for regional development	
Unit 4: Rising to the tide—natural mysteries and development experiences of the Qiantang River	The causes of the tidal bore of Qiantang River	Optional compulsory 1: 1.6 Observe and describe phenomena such as lunar phases, eclipses, solar eclipses, tides, etc., and use data such as diagrams to explain their causes. Compulsory 2: 2.5 Illustrate the location factors of industry, agriculture and service industry with examples.
	Digital economy and urban transformation	
Unit 5: Future blueprint—Hangzhou's territorial space planning	One core and nine stars and ecological security pattern	Compulsory 2: 2.10 Using data, summarize the main environmental problems faced by mankind, and explain the main ways and reasons for coordinating the relationship between man and land and sustainable development. Optional Compulsory 2: 2.3 Taking a metropolis as an example, explain the radiation function of the metropolis from the perspective of regional spatial organization.
	Coordinated development among regions	
	Rural revitalization and cultivated land protection	

5.2. Employing contextual scenarios for classroom environmental arrangements

The classroom environment is arranged by the content of classroom teaching. Regional cultural elements, subject knowledge, and learning scenarios are deeply integrated to construct immersive teaching spaces, which enhance students' intuitive experience and emotional resonance. Specifically, through visual displays (such as maps and models), interactive installations (like hands-on experimental tools), and cultural symbols (such as traditional crafts), we can transform the abstract and fragmented nature of conventional classrooms. This allows students to perceive, investigate, and reflect within authentic or simulated situations, thereby aiding in their comprehension and retention of relevant knowledge. Furthermore, the majority of items used in the classroom environment should be mobile, allowing for adjustments based on course themes and instructional content.

Taking Hangzhou as an example, the classroom environment can be designed and arranged around water town cultural elements, such as the Grand Canal and West Lake. Dynamic projection maps of the West Lake's topographical evolution can be hung on the walls, showcasing the geological processes from ancient bays to lagoons. The Qiantang River tidal simulation device can be set up in the corner, where students can observe the changes in tidal forms by adjusting the width of the trumpet mouth model and the tidal range slider. They can also demonstrate the causes of tides in conjunction with the changes in lunar phases, understanding the combined effect of terrain and celestial gravity. Miniature models of the Hangzhou section of the Beijing-Hangzhou Grand Canal can be placed on the teacher's desk, allowing students to control the lifting and lowering of the locks through water injection experiments, intuitively grasping the principle of water level difference and deeply understanding how the Grand Canal achieves north-south navigation by crossing a 40-meter elevation difference through

continuous locks, thereby profoundly appreciating the Beijing-Hangzhou Grand Canal as a great engineering feat of humanity adapting to natural terrain.

This arrangement addresses the defects of flat knowledge transmission in traditional classrooms, making abstract geographical concepts concrete through multi-sensory stimulation. Simultaneously, the penetration of cultural symbols (such as Leifeng Pagoda paper-cutting decorations and Longjing tea set display) can subconsciously strengthen students' cultural identity with their hometown, making the geography classroom a three-dimensional field connecting knowledge learning and emotional cultivation.

5.3. Incorporating Instructional Strategies such as PBL and TBL

PBL (Problem-Based Learning) and TBL (Team-Based Learning) methods are introduced into teaching, and constructivism and discovery learning theory are used as the underlying framework, which runs through the whole process of teaching and learning. This not only improves students' knowledge mastery, but also cultivates their critical thinking, independent learning, problem solving and teamwork abilities, thus effectively improving the teaching quality and learning effect.

PBL is oriented to problems in authentic contexts. Based on the core tenet of constructivism—that knowledge is actively constructed by learners—teachers can design open-ended, authentic problem scenarios and provide relevant background information, which will drive students to construct knowledge systems independently through group cooperative inquiry and role-playing. As facilitators, teachers provide resources and pose timely questions to deepen their thinking. In the case of not stipulating the only standard answer, teachers evaluate the results of each group, thereby breaking the thinking pattern and cultivating students' divergent thinking and innovation abilities.

The introduction of TBL will further enhance collaborative abilities. Divided into heterogeneous groups, students accomplish tasks together through the division of roles (e.g., researcher, recorder, presenter), which promotes the sharing of knowledge and the complementarity of skills among students. Fairness can be ensured through the combination of formative assessment and individual contribution assessment. In this process, the teacher transitions from a disseminator of knowledge to a learning facilitator and promoter. Simultaneously, students evolve from passive recipients of knowledge to active users of knowledge, investigators of problems, presenters of outcomes, and leaders in the classroom. This transformation empowers students to fully utilize their subjective initiative, thereby enhancing their ability to learn, apply, and transfer knowledge effectively.

5.4. Integration and Utilization of Extracurricular Activities and Social Resources

Some instructional content can be delivered through extracurricular activities, such as field trips, museum study tours, and social and cultural surveys. Geography teachers will lead students in conducting geographically specific practical activities, integrating regional culture with geographical knowledge. They will assume corresponding obligations and responsibilities in the construction and inheritance of regional cultural knowledge, promoting geography teaching to enter nature, integrate into society, and return to life. This teaching method can further stimulate students' learning interest. Students can personally experience the vividness and practicality of geographical knowledge in real-life settings, thereby enhancing students' inquiry abilities in geographical practical activities.

Taking Hangzhou as an example, the Beijing-Hangzhou Grand Canal Museum can be chosen as a venue for second classroom activities. A study program can be designed with the theme of "Tracing the Source and Understanding Hometown, Experiencing the Canal and Promoting Practice." This program can take the historical review of the Grand Canal and the prospect of applying for World Heritage status as the specific situation, giving students the identity of cultural relic protectors. Through the four links of "Initial Understanding of the Canal, Walking Together," "Reviewing the Canal, Perceiving Rise and Fall," "Extending the Canal, Witnessing Hangzhou," and "Looking Forward to the Canal, Symbiosis and Prosperity," the past and present of the Grand Canal are integrated into geography teaching. This guides students to comprehensively analyze the relationship between humans and the environment from both temporal and spatial dimensions, effectively implementing students' core disciplinary literacy and enhancing students' sense of responsibility and mission in participating in the construction of their hometown.

5.5. Enhancing Instructional Assessment Methods

As a component of classroom activities, instructional assessment can not only test the achievement of students' teaching goals and teaching effects, but also reflect the current situation of the curriculum and help teachers make targeted optimization and improvement. Employ a combination of formative and summative assessment approaches. Formative assessment is integrated throughout the instructional process, utilizing methods such as reflective journals and group presentation videos to dynamically track student progress, with the final project outcomes serving as the primary basis for summative evaluation. Assessment dimensions encompass students' understanding of human-environment interactions, integrated thinking, regional awareness, geographical practice skills, activity engagement, and affective development. Assessment methods include student self-assessment, peer assessment, and instructor evaluation. The scale design with multi-dimension, multi-aspect, multi-subject and multi-form is helpful to evaluate the cultivation of students' core literacy comprehensively.

6. Conclusion

By developing school-based curricula, creating authentic local contexts, and establishing diversified evaluation systems, the immersive geography teaching model is introduced into the classroom, which effectively connects the cultivation of local attachment with the goals of geographical core literacy. Rooted in local culture, we reconstruct and develop the local culture, integrating it into students' curriculum. This strategy encourages geographical education to engage with nature, integrate into society, and connect with everyday life. This teaching mode cultivates students' regional cultural mentality and local attachment, which not only fulfills the fundamental purpose of knowledge dissemination, but also provides an opportunity for cultural seeds to take root and sprout in new soil.

Research indicates that this teaching model can motivate students to learn geography and stimulate students' sense of local identity, but it also faces challenges such as insufficient cross-disciplinary capabilities of teachers and difficulties in coordinating external resources. The cultivation of local sentiments requires geography teachers to regard local wisdom based on life experiences as an important source of educational wisdom and to use regional culture as an important carrier for local geography teaching. Therefore, geography teachers need to interpret geographical phenomena from a more professional perspective, understand local education issues, grasp the basic laws and requirements of local geography education, and proactively focus on social issues, thus effectively creating teaching situations that conform to students' life experience through local field trips, field investigations, and other methods. In the future, it is necessary to strengthen policy support and teacher training to promote the implementation of "immersive teaching" on a wider scale, injecting new vitality into the cultural inheritance function of geography education.

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