

Comprehensive Practice Education via “Cloud-Based Study Tours”: A Case Study of the Comprehensive Practice Curriculum in the Tianfu New District, Sichuan Province, China

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Abstract: Comprehensive practice education is an integral part of the basic education curriculum, aiming to train students to connect textbook knowledge with real-world life through hands-on manipulations and in-person experiences in off-campus settings. In response to the challenges arising in the current enactment of the comprehensive practice curriculum in Chinese county-level schools, the Tianfu New District Educational Science Institute of China’s Sichuan Province developed the “cloud-based study tour” model to leverage local cultural and social resources to advance comprehensive practice education. Strategies, such as digital empowerment and curriculum development partnerships, were adopted. This article focuses on expounding on the positive roles of the “cloud-based study tour” in supporting regionally balanced, high-quality practical education by fully utilizing digital technologies and partnerships in curriculum development.

Science Insights Education Frontiers 2024; 23(2):3799-3809

DOI: 10.15354/sief.24.or623

How to Cite: Yang, T. (2024). Comprehensive practice education via “cloud-based study tours”: A case study of the comprehensive practice curriculum in the Tianfu New district, Sichuan province, China. *Science Insights Education Frontiers*, 23(2):3799-3809.

Keywords: Cloud-Based Study Tour, Comprehensive Practice Education, Digital Education, Curriculum Development Partnership, China

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Conflict of Interests: None

AI Declaration: The author affirms that artificial intelligence did not contribute to the process of preparing the work.

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CHINA's *Compulsory Education Curriculum Program and Course Standards 2022* emphasize the importance of incorporating labor education and social practice into the curriculum framework, giving students the opportunity to learn by doing, applying, and creating, and helping them experience the complete learning cycle of discovering issues, solving problems, constructing knowledge, and applying knowledge (State Council of China, 2022). The school's comprehensive practice (CP) curriculum is the main avenue for children's practical education, which is of vital importance for their all-round development (Xue, 2023). Nevertheless, CP education in current China faces challenges regarding the popular conception of its significance, resource availability, and technological backing. The issue of how to utilize social resources, especially local cultural resources, and orderly incorporate them into school curricula to aid students in realizing knowledge transfer in real-world and open education settings is pending more practical explorations.

The study tour is a meaningful form of CP education activity that allows primary and secondary school students the opportunity to experience the beauties of nature and the attractions of traditional cultures (Luo, 2023). The Tianfu New District Educational Science Institute in China's Sichuan Province developed a technology-enabled modality of practical instruction dubbed the “cloud-based study tour.” It is a paradigmatic practice of fully leveraging natural resources, cultural relics, and technological innovations to support the holistic development of students and the regionally balanced, high-quality development of education. This article lays out the issues with the implementation of the CP curriculum in Chinese county-level schools and expounds on the roles of the cloud-based study tour in enacting CP education, as well as delineating its educational outcomes using a genuine example.

Challenges in the Implementation of the Comprehensive Practice Curriculum in Chinese County-Level Schools

According to the Ministry of Education of China (2024), Chinese basic education is currently undergoing a transition from the expansion of education scale to high-quality development. Educators at all levels have the responsibility to contribute to building a high-quality education system to support the sustainable socioeconomic development of the nation. The high-quality development of county-level education as the grassroots component of Chinese basic education is of extraordinary significance for the overall advancement of the system. In *The Modernization of Chinese Education 2035*, the State Council of China (2019) announced the goal of realizing balanced, high-

quality compulsory education in at least 95% of Chinese county regions by the year 2035. To reach this goal, it is imperative to ensure the successful implementation of the national curriculum program and enhance the instruction level of non-standardized courses like “comprehensive practice” in county-level schools, in addition to promoting a balanced allocation of educational resources (Li, 2022). Practical education plays a crucial role in fostering students’ manipulation skills and creative ability (Xue, 2023); a complete practical education curriculum is a precondition for student all-round development. Nonetheless, the enactment of the CP curriculum in county-level schools is less smooth than expected. A survey of CP education in the Tianfu New District of Sichuan Province finds that:

- 1 There are considerable disparities in CP education standards between urban and rural schools within the county region. Urban schoolteachers have easier access to a wide range of educational resources, enjoy ample training opportunities, and are more experienced in carrying out CP instruction. Conversely, their rural counterparts have limited exposure to practical education resources; as a result, they tend to be less proficient in activity design, the selection of instructional methods, and the use of modern technology in CP education (Yang & Lei, 2023). These disparities result in a significant gap in the quality of CP education between urban and rural schools, working against rural students in their development of practical skills.
- 2 There are also stark inter-school differences in attitudes towards CP education. Schools that give equal weight to traditional core subjects and the practical education curriculum typically offer students a wide variety of practical courses, which significantly boost students’ overall competence. Others may undervalue the significance of the CP curriculum and neglect the investment in student practical education, leading to a lack of teaching staff specializing in practical education, a scarcity of necessary equipment, and the absence of practical training bases (Guo, 2023). Such inter-school divides are a severe impediment to the popularization of practical education.

The Significance of the “Cloud-Based Study Tour” for Addressing the Issues with CP Curriculum Implementation

The “cloud-based study tour” is a modality of technology-enabled practical instruction developed under the strategies of “technology empowerment” and “curriculum development partnership.” By removing temporal and spatial constraints through the online and offline blended teaching method, the

cloud-based study tour can integrate the resources of multiple stakeholders and convert diverse extra-curriculum materials, such as the local cultures, into engaging and educative curriculum subject matter. Its practice of leveraging natural resources, cultural relics, and technological innovations to support student holistic development is an innovative experiment in addressing the issues with the enactment of the CP curriculum.

Technological Empowerment for Supporting Balanced, High-Quality Development of Regional Education

Integration of Technology and Cultural Resources

The Tianfu New District Educational Science Institute set about experimenting with educational technologies in CP education in 2020. An educational technology research team of 30 teachers was established to explore the application of technologies, such as the network, live streaming, filming, digital editing, program directing, and software platforms, in practical education. After that, the environmental education group, humanities education group, and science and technology education group were set up, all together forming a regional CP education project team. Ten sessions of live STEM lessons were provided to students, free of charge, in 2020. Later, nearly 400 teachers joined to form a research team for the “cloud-based study tour” program and develop professional research mechanisms (**Figure 1**).

In 2021, the research team began to produce off-campus programs and make them public to more students through online platforms. So far, 10 sessions of outdoor lessons on popular science have been successfully broadcast live, including “Cloud-Based Bird Watching,” “the Campus Plant Map,” and “Clever Hands,” among others. Particularly, the livestreaming lesson “Cloud-Based Bird Watching” in February 2021 engaged approximately 9000 students in the online interactive learning activity. In 2022, after consulting literature and experts in relevant fields, the research team made improvements to the curricular design of “online real-scenario-based tour plus offline inquiry-based autonomous learning,” and this multi-terminal distance learning paradigm was officially named the “cloud-based study tour.” Subsequently, the research team launched a series of CP lessons, including the “cloud-based study tour of Du Fu’s Thatched Cottage” and “cloud-based study tour of Sanxingdui Museum,” successfully engaging in the program more than 20 schools from Chengdu, Deyang, Meishan, and Ziyang Cities and Ganzi, Aba, and Liangshan Autonomous Prefectures and serving thousands of students, particularly in remote rural and ethnic minority areas.

In the context of digital transformation in education, the integration of technology and cultural resources has the potential to significantly ad-

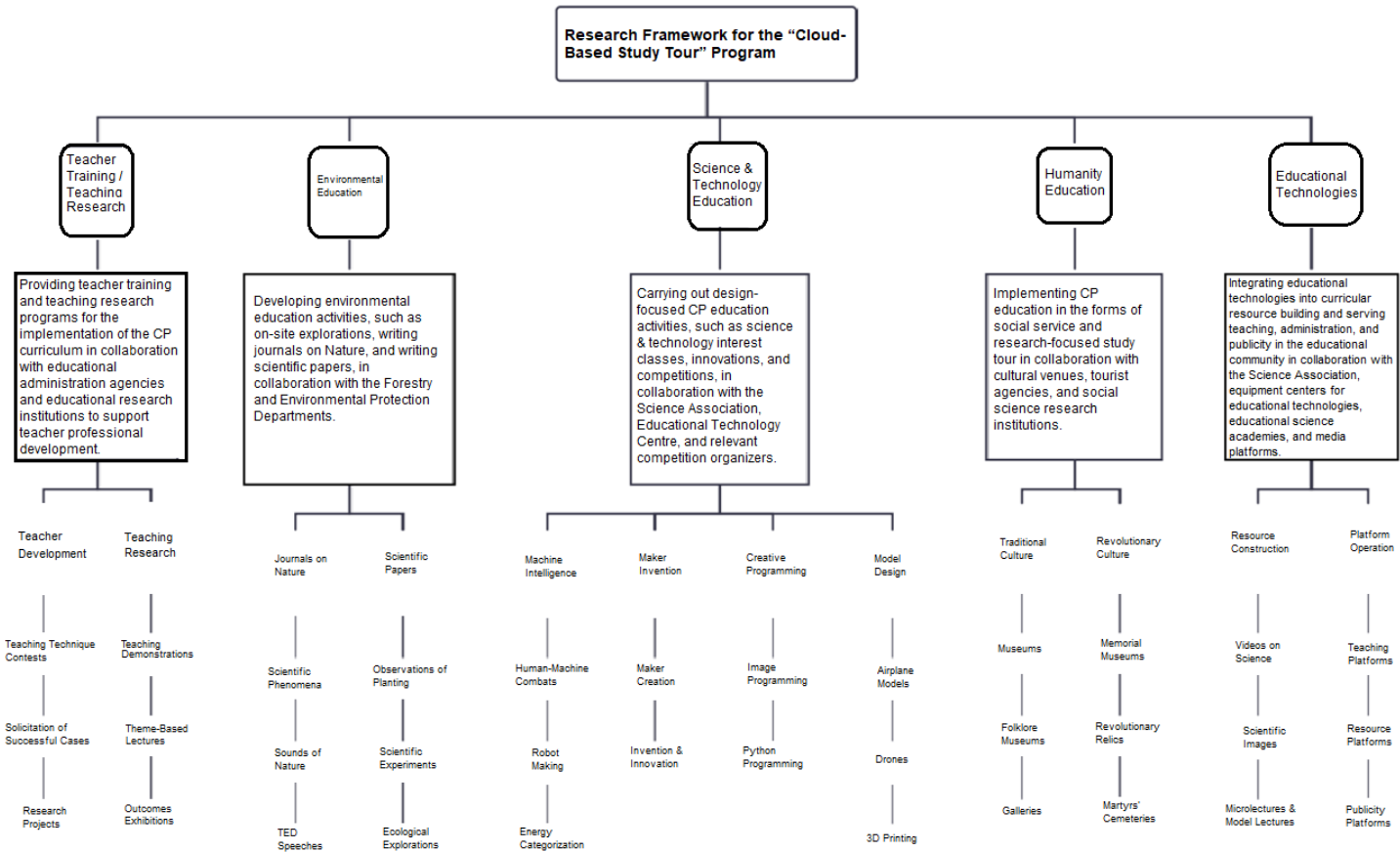


Figure 1. The Tianfu New District Educational Science Institute’s Research Mechanism for the “Cloud-Based Study Tour” Program.

vance the balanced, high-quality development of education. The development and implementation of the “cloud-based study tour” program in Sichuan’s Tianfu New District is an exemplary practice of this integration, giving full play to the educational roles of natural attractions and cultural heritages. This learning pattern not only exhibits the power of technology but also highlights the value of the cultural heritage in the region. By employing educational technologies, the Tianfu New District provides high-quality CP education for all students in urban, rural, and ethnic minority areas, successfully mitigating the uneven distribution of educational resources.

Blending Online and Offline Learning

Online and offline blended learning, as an instructional strategy, is of vital importance in the digital transformation of education. Practical education encourages students’ transcending the time and space constraints of classroom learning and making their inquiry in-depth, boundless, and real-life-based (Liu, 2022). The online and offline blended learning method can well serve this purpose by combining real scenarios with virtual reality and “presence” with “distance,” providing students with opportunities for boundless, mutually inspiring learning.

The “cloud-based study tour” program research team created a design that consists of three chief components in the sequence of “offline pre-class autonomous study,” “online interactive study in a virtual classroom,” and “offline artifact making.” The student’s “cloud-based study tour” is task-driven and will be assessed by their presentation of creative artifacts as learning products. The program design was developed into a practical learning platform, dubbed the “Center for Cloud-Based Study Tour,” which provides generally applicable technological solutions, explicit learning procedures, and easy manipulation. The platform has become a paradigmatic pattern of CP education and an integrative tool that blends teaching, learning, and assessment.

Curriculum Development Partnership for Thorough Exploitation of Local Cultural Resources

In the past few years, the Tianfu New District Educational Science Institute has worked to establish a practical education community in collaboration with all stakeholders concerned, including environmental departments at all levels and cultural venues as well as urban, rural, and ethnic minority schools. This practical education community has placed high value on cross-agency partnerships in the development and implementation of the practical education curriculum, creating mechanisms for the sharing of resources and research outcomes. In partnership with all actors involved, the “cloud-based

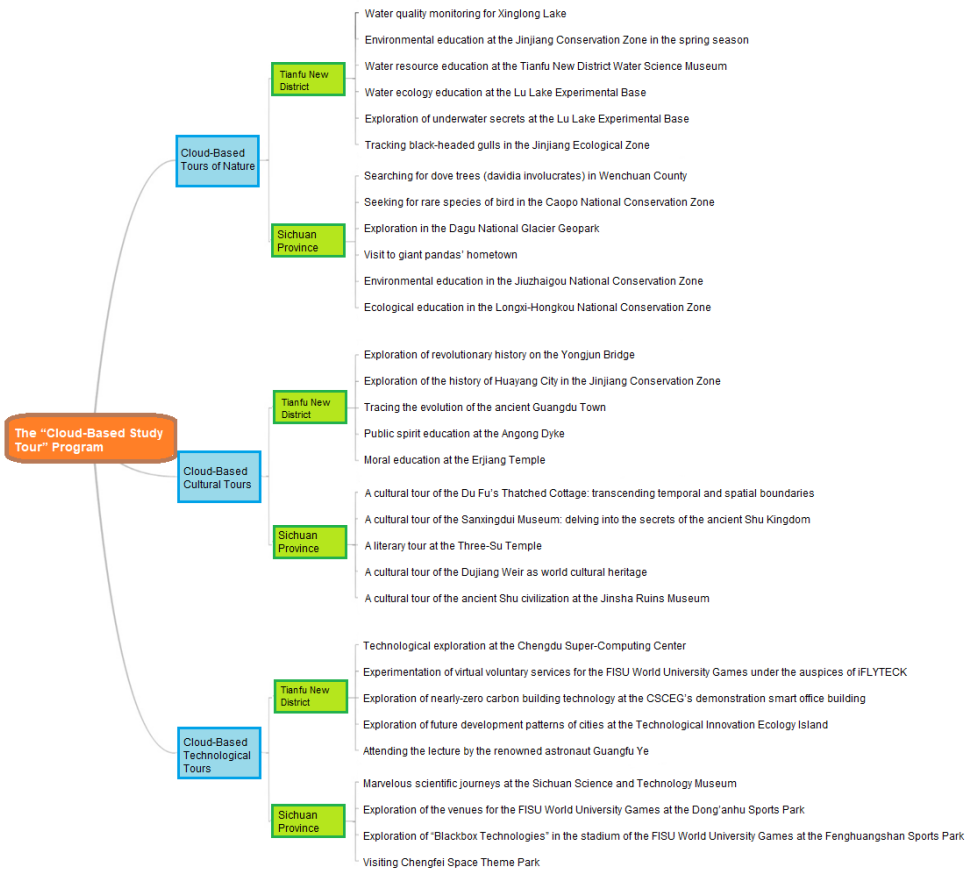


Figure 2. A Theme-Based Activity Framework for the “Cloud-Based Study Tour” Program.

study tour” research team of the Institute has developed a theme-based activity framework (Figure 2) for practical education activities that are in line with the requirements of the national CP curriculum at the basic education level.

In the said framework, the section on “cloud-based tours of nature” focuses on the environmental resources available in the Tianfu New District, which is projected to develop into a state-level “garden city,” and in Sichuan Province, which has been historically acclaimed as a “blessed land.” With “cloud-based tours of nature,” students can easily access natural attractions such as Xinglong Lake, Luxi River, and Jinjiang Conservation Zone and visit landmark places like the National Giant Panda Park and Dagu Glacier. The livestreaming and recorded lessons enable them to experience, explore, and develop knowledge about nature. The program developers borrow learning

substances from the geological and biological environments in these natural areas as students' research topics. After the "cloud-based tours of nature," junior students at primary schools must hand in their observation journals on nature, senior students at primary schools their research essays, and secondary school students their artifacts with environmental themes; regular selections and exhibitions are conducted based on students' study outcomes.

The section on "cloud-based tours of cultural venues" includes outstanding practical education projects like the "cloud-based study tour of Du Fu's Thatched Cottage: transcending temporal and spatial boundaries" and the "cloud-based study tour of Sanxingdui Museum: delving into the secrets of the ancient Shu Kingdom." Du Fu's thatched cottage and the Sanxingdui Museum's restoration workshop act as the classrooms for the enactment of these projects. More than 20 schools from the Tianfu New District have been engaged in them, and their students are required to go through the structured process of offline pre-class autonomous study, online livestreaming study tour, and offline extended research. This makes it possible for all remote terminal classes to take part in theme-based exploratory learning. In addition, each cultural study tour is guided by three teachers, who are the museum docent, the on-site teacher host, and the teacher at the terminal classroom. The "triple-teacher classroom" ensures that the practical education process is professional, engaging, and full of effective interactions.

The Cloud-Based Study Tour of Sanxingdui Museum: An Exemplary Practice of CP Education

To develop 2024's "cloud-based study tour of Sanxingdui Museum," the Tianfu New District Educational Science Institute's "cloud-based study tour" research team tapped into local cultural resources with the goal of fostering students' knowledge of ancient Shu civilization and traditional Chinese culture. There were 15 local schools contributing to the five-month development of the project.

For their "offline pre-class autonomous study," students from participating schools were provided with uniform handouts and required to complete pre-class assignments and hand them in on the "Center for Cloud-Based Study Tour" platform. In addition, practical education tutors at each school also created their own teaching materials to help students develop preliminary knowledge of the Sanxingdui civilization.

For the central stage of "online interactive study in a virtual classroom," Qing Li, head of the Qing Li Anchor Teachers Studio, and Junmin He, the leading docent at Sanxingdui Museum, co-designed the online teaching and co-hosted the lecture on site. Thus, the lecture combined the expertise of a museum specialist with that of a professional educator. In order to enable students to have an in-depth understanding of the significance of the

historical archaeological discovery, the project team chose the restoration workshop of the museum as the livestreaming classroom. There were many online-offline interactive activities in the livestream, such as the “virtual simulation of archaeological excavation” and “naming cultural relics.” Students from 15 schools experienced a collective classroom full of vitality, where the online interactions, such as the random selection of actors and Q&A, were embedded into the process and the teacher-student communication was seamless.

In the last stage of “offline artifact making,” student participants, under the guidance of their respective teachers, worked to produce Sanxingdui-themed artifacts and presented them for online and offline exhibitions and selection. For instance, the 2019 class students at Tianfu No.7 Primary School made an artifact, dubbed “The Dream-Like Ancient Shu Kingdom,” for their participation in the exhibition of “Sanxingdui Cultural Experience Space.” They converted what they had learned in the preceding stages of the study tour into a tangible product, which represented an interactive space for a Sanxingdui cultural tour. This work won them a special prize in the Tianfu New District-based selection and was sent to the exhibition of “Chengdu City’s Comprehensive Practice Education Achievements,” where it was awarded a special prize again.

The “cloud-based study tour of Sanxingdui Museum,” a paradigmatic project in the “cloud-based study tour” program, drew heavily on the Ba-Shu culture and generated significant practical education outcomes with its unique teaching design and marvelous content. By integrating online and offline learning, the project considerably enriched practical experiences and enhanced the exploratory capacities of the students. The smooth communication and resource sharing among the students from the 15 schools evidenced the role of CP education collaboration in alleviating educational inequality.

Conclusion

The “cloud-based study tour” program is a meaningful, innovative experiment in popularizing CP education in China’s county regions. As a new practical education paradigm, it needs multifaceted support from all stakeholders, increased input of manpower and material resources, and intensified multi-agency partnerships in curriculum development. Furthermore, more theoretical and practical explorations of CP curricula in academia are necessitated, and research on the technological application in practical education should be strengthened to perfect programs like the “cloud-based study tour” to support balanced, high-quality development of education in China.

References

- Guo, R. (2023). A Case Study of the Balanced Distribution of Compulsory Education Resources in Public Primary and Secondary Schools in S District of D City (master's thesis). Guangxi Normal University. Available at: <https://link.cnki.net/doi/10.27036/d.cnki.ggxsu.2023.001490>
- Li, C. (2022). Optimizing the Monitoring and Evaluation System for the Development of Balanced Compulsory Education (doctoral dissertation). East China Normal University. DOI: <https://doi.org/10.27149/d.cnki.ghdsu.2022.000306>
- Liu, T. (2022). The Educational Roles of Schools and Realization Paths (doctoral dissertation). Guangxi Normal University. DOI: <https://doi.org/10.27036/d.cnki.ggxsu.2022.000009>
- Luo, T. (2023). Moral Education in the Senior Secondary Geography Study Tours in Guiyang City (master's thesis). Guizhou Normal University. Available at: <https://link.cnki.net/doi/10.27048/d.cnki.gzsu.2023.001359>
- Ministry of Education of China. (2024). Developing a High-Quality Education System as the Bedrock of National Rejuvenation. Available at: http://www.moe.gov.cn/jyb_xwfb/s5148/202403/t20240307_1118894.html
- State Council of China. (2019). The Modernization of Chinese Education 2035. Available at: https://www.gov.cn/zhengce/2019-02/23/content_5367987.htm
- State Council of China. (2022). The Compulsory Education Curriculum Program and Course Standards 2022. Available at: https://www.gov.cn/zhengce/zhengceku/2022-04/21/content_5686535.htm
- Xue, M. (2023). The Development and Optimization of Study Tours Curriculum for Primary and Secondary Schools (master's thesis). Jiangnan University. DOI: <https://doi.org/10.27169/d.cnki.gwqgu.2023.000611>
- Yang, H & Lei, W. (2023). Children from County Regions. Beijing: China Remin University Press.

Received: June 10, 2024

Revised: July 22, 2024

Accepted: July 29, 2024