学 位 論 文 内 容 の 要 旨/Dissertation Abstract

博士（環境科学）　　氏　名/Applicant 向 世柔

学 位 論 文 題 名/Title of Dissertation

Proposing a geoeducation framework for China's geoparks through insights derived from Tokachi-Shikaoi Geopark, Japan
（とかち鹿追ジオパークからの知見にもとづく中国のジオパークに対する
ジオ教育の枠組みの提案）

Geoparks aim to fulfill three core objectives: the protection of geological relics, the dissemination of geo-knowledge, and the promotion of local economic development. Geoeducation serves as the foundation of these objectives. Despite the prolific establishment of geoparks and their potential as educational platforms, geoeducation often receives less emphasis than other fields related to geoparks. Notwithstanding the extensive establishment of geoparks and their potential as educational platforms, the focus on education within geopark-related literature is relatively underemphasized. However, the importance of geoeducation is increasingly being recognized as crucial for promoting sustainable development. Nevertheless, analyses of geoeducational programs, particularly within the Chinese context, remain limited. This study aims to enhance the quality and effectiveness of geoeducation across geoparks, with a specific focus on China.

The primary objective of this research is to refine geoeducation within China's geoparks by leveraging insights from the Tokachi-Shikaoi Geopark. The specific aims include: (1) to propose a new geoeducation framework in Tokachi-Shikaoi Geopark to maximize the efficacy of geoeducation; (2) to evaluate the current geoeducational practices at the Cuihuashan National Geopark to understand their efficacy and identify potential improvements; (3) to develop recommendations for enhancing geoeducation at the Cuihuashan National Geopark; and (4) to optimize geoeducation in China's geopark. Consequently, fostering a geoeducational environment would be conducive to long-term sustainable development.

This study employs a mixed-methods approach that combines qualitative and quantitative methodologies to evaluate the efficacy of geoeducation programs in two geoparks. It engages a diverse range of educational stakeholders, including students, teachers, and geopark personnel through questionnaire surveys and interviews. These surveys assess geo-knowledge acquisition and attitudes towards geoconservation, while interviews provide insights into the geoeducation program's strengths and challenges, thereby identifying the best practices and areas for improvement.

In Tokachi-Shikaoi Geopark, the integration of well-prepared textbooks and outdoor learning activities was crucial. However, the need to revitalize and expand geoeducation using a new partnership framework among

geoparks, educational institutions, and other stakeholders has been identified. For the Cuihuashan National Geopark, the results confirmed the effectiveness of combining indoor and outdoor education. Challenges, such as large group sizes, limited tour durations, and the need for teacher training, were also highlighted.

This study proposes improvements based on the framework of Shikaoi, Recommendations for Cuihuashan focusing on increasing the frequency of study tours, enhancing teacher training, and expanding educational materials and digital resources. Closer integration with educational curricula and broader collaboration with universities and other geoparks are also suggested.

While previous attention to education in geoparks has been limited in China, there is considerable potential for its enhancement and extension. By developing comprehensive educational programs and materials specifically designed for visitors and forging partnerships with educational institutions, geoparks can bolster educational initiatives. These partnerships are instrumental in promoting geoparks as vital teaching resources, organizing various academic and thematic events, such as courses, conferences, and seminars, and improving interpretive services to support both visitors and researchers. Such collaborative and educational strategies are critical for advancing the educational objectives of the Sustainable Development Goals (SDGs) and ensuring the preservation of geoheritage for future generations.