

Exploring Ecological Civilization Education in University Geography Teaching

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Abstract: With the increasing concern of society about ecological environment issues, university geography education plays an important role in cultivating students' ecological awareness and environmental responsibility. However, how to condense ecological features in geography courses and fully implement ecological civilization education is one of the current challenges to be faced. To this end, this paper will explore the aspects of condensing ecological characteristics in university geography teaching, constructing a whole-process ecological civilization teaching system, and applying virtual reality technology to improve the effect of ecological civilization education. Through these explorations and practices, we aim to inject richer ecological elements into university geography education and cultivate new-age talents with environmental awareness and sustainable development concepts.

Keywords: University geography; Ecological civilization; Classroom teaching

1. Introduction

The purpose of this paper is to explore how to condense the ecological characteristics of geography courses and implement ecological civilization education in university geography teaching. Firstly, a whole-process ecological civilization teaching system is constructed by highlighting the core concept of ecological civilization, strengthening practical teaching links, integrating interdisciplinary comprehensive literacy and encouraging independent learning. Second, outdoor practical teaching in the form of field trips, ecological conservation project participation, ecological data visualization and ecological case studies are emphasized to improve the effectiveness of ecological civilization education. In addition, the application of virtual reality technology in university geography teaching, such as virtual field trips, ecological simulation and interaction, and virtual ecological laboratories, is introduced to enhance students' learning experience and practical ability. Through these explorations and practices, students' ecological awareness, environmental responsibility and sustainable development concepts can be cultivated to contribute to the construction of an ecological civilization society.

2. The Connotation of Ecological Civilization Education

The connotation of infiltrating ecological civilization education in university geography teaching is to cultivate students' ecological and environmental consciousness, sustainable development concept and ecological ethics by emphasizing interdisciplinary comprehensive literacy, and at the same time encouraging students to participate in practical activities. Through this educational approach, students can gain a deep understanding of the interdependence between humans and nature, understand the impact of human activities on the environment, and develop the comprehensive abilities needed to solve environmental problems in order to promote the development of an ecological civilization in which humans and nature coexist in harmony. At the same time, ecological civilization education emphasizes student participation and practical skills development. Students should actively participate in environmental protection activities in their communities and campuses to experience and understand the nature of environmental problems and their solutions firsthand. At the same time, through practical activities, students can develop comprehensive abilities such as problem solving, cooperation and communication, and innovative thinking.

3. Problems of Ecological Civilization Education in College Geography Teaching

3.1 The effect of ecological civilization education is not significant enough

Some geography courses do not fully highlight the importance and practical application of ecological civilization education in content design and textbook writing, which makes it difficult for students to truly understand and appreciate the connotation of ecological civilization. The selection and writing of teaching materials should pay more attention to ecological environmental protection and

sustainable development, so that students can better understand and apply ecological civilization concepts. Ecological civilization education needs to focus on practice and case studies so that students can personally participate in the practical issues of environmental protection and sustainable development. However, some geography education lacks practical aspects and remains only at the theoretical level, making it difficult to stimulate students' interest and develop their practical skills.

3.2 The curriculum system construction of ecological civilization education is not perfect

Some colleges and universities lack clear educational goals and guiding principles for geography ecological civilization education. The lack of clear objectives will lead to the vague selection of teaching contents and methods, making it difficult to form a targeted and systematic curriculum system. At the same time, the curriculum of geographic ecological civilization education in some colleges and universities is fragmented and lacks hierarchy and coherence. The selection and organization of course contents need to pay more attention to the core concepts and theories of ecological civilization education and form an organic knowledge system so that students can learn and understand the connotation of ecological civilization in a systematic way. In addition, geography ecological civilization education in some colleges and universities relies too much on traditional teaching methods, such as lectures and notes, and lacks diverse teaching tools. Ecological civilization education needs to stimulate students' learning interest and participation through interactive teaching methods such as case studies, field trips and group discussions. In addition, some colleges and universities lack teaching materials resources that are compatible with the teaching contents of geography ecological civilization education.

3.3 Lack of experiential practical teaching

Some colleges and universities pay too much attention to the teaching of theoretical knowledge and lack the setting of practical links in geography ecological civilization education. Students acquire knowledge only by listening to lectures and reading textbooks, which makes it difficult for them to truly understand and apply the concepts and principles of ecological civilization. The lack of practical teaching can lead to a disconnect between theoretical knowledge and practical problems, which affects students' learning effectiveness. Ecological civilization education requires practical activities to enable students to experience the natural environment, ecosystems, and biodiversity firsthand. However, some university geography education lacks practical opportunities such as providing field trips, field practice, and environmental protection projects, which do not allow students to personally feel and touch the real situation of ecological environment and limit their deep understanding of ecological issues.

4. Ecological Civilization Education in University Geography Teaching

4.1 Concretizing the ecological characteristics of the geography curriculum

In the geography curriculum, the core concepts of ecological civilization, such as ecological environmental protection, sustainable development and resource recycling, should be clearly emphasized. Through in-depth analysis and discussion of these concepts, students can have a clear understanding of the connotation of ecological civilization. Add practical teaching sessions to the geography curriculum, such as field trips, field practice, environmental protection projects, etc. Through practical activities, students can personally feel and participate in the actual work of environmental protection and sustainable development to deepen their knowledge and understanding of ecological issues. Integrate the geography curriculum with other disciplines across disciplines, such as biology, environmental science, and social science, to form an integrated teaching system. Through interdisciplinary learning and thinking, students' comprehensive literacy is cultivated so that they can integrate knowledge and methods from various disciplines to solve complex ecological problems. In the geography curriculum, students are encouraged to engage in independent learning and inquiry, and develop their ability to acquire and apply knowledge actively. Some research topics or projects can be designed for students to conduct independent research and practice, and to gain a deeper understanding of the relationship between geography and ecology through their own efforts and discoveries. In addition, in the geography course, focus on case analysis and problem-solving skills. By analyzing actual cases, students can understand the complexity and challenges of ecological problems and develop their problem-solving skills and mindset.

4.2 Building a whole-process ecological civilization teaching system

First, clear educational objectives should be set: clearly define the educational objectives, incorporate ecological civilization education, and clearly cultivate students' ecological awareness, environmental protection awareness and sustainable development concepts. Secondly, the core concepts, theoretical knowledge and practical cases of ecological civilization should be integrated into each module of the geography curriculum. Ensure the organic articulation of course contents, form a systematic knowledge system, and focus on

interdisciplinary integration. Third, add rich practical teaching links to the teaching, such as fieldwork, experimental practice, social research and internship. Through practical activities, students are allowed to participate in the practical work of ecological environmental protection, biodiversity conservation, environmental management, etc. to exercise their practical skills and problem-solving abilities. Fourth, students are encouraged to actively participate in class discussions, group work, and team projects to develop their sense of cooperation and team spirit. Through cooperative learning, students can learn from each other, exchange experiences, and work together to solve ecological problems. Fifth, diverse evaluation methods are used, including written reports, practical reports, project presentations and oral presentations, to comprehensively evaluate students' theoretical knowledge, practical ability and innovative thinking. The evaluation system should focus on students' understanding, application and practical ability of ecological civilization.

4.3 Conducting outdoor ecological civilization education

For one thing, teachers can organize field trips and field practice activities for students so that they can get in touch with and observe the natural environment firsthand and learn about the operation of ecosystems and biodiversity. Students can learn field investigation methods, data collection skills, and apply theoretical knowledge to practical situations. Second, students are encouraged to participate in ecological conservation projects, such as engaging in environmental cleanup activities, reforestation, and wetland protection. Through hands-on participation, students can gain a deeper understanding of the seriousness of ecological problems and develop a sense of environmental responsibility and active participation in social practices. Third, we organize nature exploration and ecological inquiry activities for students so that they can take the initiative to observe and discover natural phenomena and study the structure and function of ecosystems in depth. Through field observation, collecting samples and conducting data analysis, students are able to deepen their understanding and knowledge of the ecological environment. Fourth, we organize ecological trips and outdoor experience activities for students to visit and experience areas with ecological characteristics, such as mountains, lakes, and rivers. Students can experience the characteristics and challenges of different ecosystems up close and cultivate a sense of reverence for and protection of nature. Fifth, ecological experts and scholars in related fields are invited to give ecological education lectures and panel discussions to introduce the latest ecological civilization concepts and practical experiences to students. Students can gain an in-depth understanding of the complexity of ecological problems and solutions through exchanges with experts.

4.4 Applying new educational technologies to improve the effectiveness of education

Use virtual reality technology to provide students with the experience of virtual fieldwork. Through virtual reality devices, students can immerse themselves in visiting different geographical environments, such as tropical rainforests, coral reefs, deserts, etc. They can explore the structure and function of ecosystems and learn about ecological issues and environmental challenges. In addition, virtual reality technology creates ecological simulation scenarios that allow students to engage in interactive learning. Students can interact with simulated ecosystems through controllers or gesture recognition systems in the virtual environment to observe ecological changes, simulate ecological processes, and test the effects of different factors on the ecosystem. Create a virtual ecology lab for students to conduct virtual experiments. Through virtual reality technology, students can simulate ecological experiments, perform variable adjustments and data collection, and observe ecosystem responses and changes. This will enhance students' experimental design and scientific research skills.

5. Conclusion

In university geography teaching, the importance of ecological civilization education has become increasingly prominent. The purpose of this paper is to explore how to condense ecological features in geography courses, fully implement ecological civilization education, and apply virtual reality technology to improve the educational effect. By constructing a whole-process ecological civilization teaching system, encouraging practical teaching, providing diversified practical opportunities and applying virtual reality technology, students' learning interest and participation can be stimulated, and their environmental awareness and sustainable development concepts can be cultivated. Meanwhile, through the exploration and practice of ecological civilization education, students will become the pillars of society with a sense of environmental responsibility, scientific literacy and innovation ability, and contribute to building a better future of ecological civilization.

References

[1] Haiying Zhao, Mingxu Zhang. Ecological Civilization Education in University Geography Courses in the Context of the New Era [J]. *Science and Technology Wind*, 2022(12):25-27.

[2] Yuehua Tian. Teaching Ecological Civilization Education Cases in High School Geography Classroom[D]. Huazhong Normal 2023 | Volume 7 | Issue 22 -89-

University, 2015.

[3]Yuyao Tian. Marx's Ecological Thought and Its Contemporary Value[D]. Jilin Agricultural University, 2015.

[4]Yue Yang. Solving The Problem of Negative Ecological Effects with the Scientific Concept of Development in the New Era[D]. Chengdu University of Technology, 2010.

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