

Analysis of the Impact of Integrating the Concept of Low-Carbon and Environmental Protection into Ideological and Political Education on Students' Quality

Fang Li^{1*}, Wenying Wang², Xia Wang¹

¹Taishan University, Shandong Tai'an 271000, Shandong, China

Copyright: © 2025 Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), permitting distribution and reproduction in any medium, provided the original work is cited.

Abstract: The integration of the low-carbon environmental protection concept into ideological and political education can further cultivate the moral sentiment of students, promote students' awareness of low-carbon environmental protection, continuously improve their environmental protection ability, and enhance students' comprehensive quality, combined with relevant educational activities. Therefore, at the present stage, it is necessary to optimize the design of the education program based on the concept of low-carbon environmental protection, combining ideological and political education.

Keywords: Low-carbon and environmental protection; Ideological and political education; Students' quality; All-round development

Online publication: March 26, 2025

1. Introduction

The integration of low-carbon environmental protection concept into ideological and political education can transmit the sustainable development concept and low-carbon environmental protection concept of green civilization and healthy development for students, meet the requirements of the social main spiritual civilization construction, as well as can better play the role of education, and comprehensively improve the quality level of students [1]. In the current era, environmental issues have become a global concern. The concept of low-carbon and environmental protection has emerged as a crucial response to these challenges [2]. Ideological and political education, being an essential part of the educational system, has the potential to play a significant role in cultivating students' values and worldviews. Integrating the concept of low-carbon and environmental protection into ideological and political education can have far-reaching implications for students' overall quality of development. This integration not only helps students to form correct environmental values but also promotes their growth in multiple aspects, such as moral, scientific, and

²Tai'an Municipal People's Congress Office, Tai'an 271000, Shandong, China

^{*}Author to whom correspondence should be addressed.

social responsibility-related fields [3].

2. Theoretical bases for the integration

2.1. Sustainable development theory

Sustainable development theory, proposed by the Brundtland Commission in "Our Common Future" [3], emphasizes the need to balance economic development, social progress, and environmental protection. It posits that development should meet the needs of the present without compromising the ability of future generations to meet their own needs. Integrating the low-carbon and environmental protection concept into ideological and political education aligns with this theory [4]. Students can be educated to understand the long-term consequences of environmental degradation and the importance of sustainable consumption and production patterns. For example, when learning about sustainable development in ideological and political courses, students can be guided to analyze how different industries can reduce their carbon emissions and resource consumption while maintaining economic growth. This understanding can foster their awareness of environmental protection and their role in promoting sustainable development [5].

2.2. Marxist ecological view

Marx's ecological thought, as expounded in his works such as "Capital," emphasizes the unity of man and nature. Marx believed that humans are part of nature and that social production should respect natural laws. Integrating this view into ideological and political education helps students establish a correct ecological view. They can learn that human activities should be in harmony with nature and that environmental protection is not only an ethical requirement but also a necessary condition for the sustainable development of human society. For instance, students can study Marx's analysis of the relationship between capitalism and environmental problems, and understand how a socialist society can better achieve ecological balance through planned economic development and environmental protection policies [6].

2.3. Moral education theory

Moral education theory, as put forward by Kohlberg in his theory of moral development, focuses on the cultivation of moral values and behaviors. The low-carbon and environmental protection concept contains rich moral connotations, such as environmental responsibility, altruism, and global citizenship. By integrating this concept into ideological and political education, students can be cultivated to develop moral qualities related to environmental protection. They can be taught to respect nature, care for the environment, and be responsible for the ecological well-being of the planet. For example, through case-based teaching in ideological and political classes, students can discuss moral dilemmas in environmental protection, such as whether it is morally justifiable to sacrifice short-term economic benefits for long-term environmental protection [7].

3. Impact on students' moral quality

3.1. Cultivating environmental morality

Integrating low-carbon and environmental protection into ideological and political education can cultivate students' environmental morality. Students can be educated to respect nature as an equal partner rather than a resource to be exploited. They can learn that all living beings have the right to exist and that humans have a moral obligation to

protect the environment. For example, through learning about the extinction of endangered species due to human activities, students can develop a sense of guilt and responsibility, and thus be more likely to take actions to protect the environment in their daily lives, such as reducing waste and protecting wildlife habitats [8].

3.2. Promoting social responsibility

The concept of low-carbon and environmental protection emphasizes the collective responsibility of society. When students are exposed to this concept in ideological and political education, they can be inspired to take on social responsibilities. They can understand that environmental problems are not individual issues but require the joint efforts of the whole society. For instance, students may participate in community-based environmental protection activities, such as tree-planting campaigns or waste-sorting promotion. These activities can help them develop a sense of social belonging and responsibility and make them more aware of their role in promoting social progress. The integration of the low-carbon environmental protection concept and ideological and political education not only needs to reshape students' values and behavioral habits, but also needs to cultivate their core qualities and social responsibility through interdisciplinary practice. In the future, differentiated teaching strategies should be further explored (such as rural schools combining ecological agriculture and urban schools focusing on intelligent emission reduction), and long-term follow-up research should be strengthened to verify the sustainability and migration of the impact.

3.3. Fostering global awareness

Environmental problems are global in nature and require international cooperation. Integrating the low-carbon and environmental protection concept into ideological and political education can foster students' global awareness. Students can learn about the impact of climate change on different regions of the world and the efforts made by different countries in environmental protection. For example, by studying international environmental agreements such as the Paris Agreement, students can understand the importance of global cooperation in addressing climate change. This can make them more open-minded and globally conscious, and encourage them to contribute to global environmental protection efforts in the future.

4. Impact on students' scientific and cultural quality

4.1. Enhancing scientific knowledge

The low-carbon and environmental protection concept involves a great deal of scientific knowledge, including environmental science, energy science, and materials science. Integrating this concept into ideological and political education can provide students with an opportunity to expand their scientific knowledge. For example, in ideological and political courses, students can learn about the principles of renewable energy sources such as solar, wind, and hydro energy. They can also understand the scientific basis for reducing carbon emissions and the environmental impact of different industrial processes. This knowledge can not only enhance their understanding of environmental protection but also improve their overall scientific literacy.

4.2. Stimulating creativity and innovation

The pursuit of low-carbon and environmental protection requires continuous innovation. Integrating this concept into ideological and political education can stimulate students' creativity and innovation. Students can be encouraged to think about new ways to solve environmental problems. For example, they may be inspired to design new environmental protection products or propose innovative environmental protection strategies. Some students may come up with ideas for developing more efficient waste-recycling technologies or creating environmentally friendly building materials. These creative ideas can contribute to the development of environmental protection technologies and industries.

4.3. Promoting interdisciplinary learning

Low-carbon and environmental protection are complex issues that require the integration of knowledge from multiple disciplines. Integrating this concept into ideological and political education can promote interdisciplinary learning among students. They can be guided to combine knowledge from different fields such as politics, economics, science, and culture to address environmental problems. For example, when studying the impact of environmental policies on the economy, students need to draw on knowledge of both political science and economics. This interdisciplinary learning can help students break through the boundaries of single-discipline learning and develop a more comprehensive and systematic knowledge structure [9].

5. Impact on students' physical and mental health quality

5.1. Creating a healthy living environment

The concept of low-carbon and environmental protection advocates a green and healthy lifestyle. Integrating this concept into ideological and political education can guide students to create a healthy living environment. For example, students can be educated to choose a low-carbon mode of transportation, such as walking, cycling, or taking public transportation. This can not only reduce carbon emissions but also improve their physical fitness. In addition, they can be encouraged to reduce the use of disposable products and choose environmentally friendly daily necessities, which can help to create a clean and healthy living environment.

5.2. Relieving psychological pressure

Engaging in environmental protection activities can be a way for students to relieve psychological pressure. When students participate in activities such as environmental protection volunteer work or nature-based activities, they can get close to nature and relax their minds. For example, tree-planting activities can allow students to enjoy the beauty of nature and feel a sense of accomplishment. These activities can help students relieve stress and anxiety caused by study and daily life, and improve their mental health.

5.3. Cultivating positive attitudes

The concept of low-carbon and environmental protection emphasizes positive actions and attitudes. Integrating this concept into ideological and political education can cultivate students' positive attitudes towards life and the

environment. Students can be inspired to actively participate in environmental protection and believe that their actions can make a difference. For example, when students see the positive results of their environmental protection efforts, such as the improvement of local environmental conditions, they will be more confident and positive and develop a more optimistic attitude towards life.

6. Impact on students' social responsibility

6.1. Encouraging active participation in society

Integrating the low-carbon and environmental protection concept into ideological and political education can encourage students to actively participate in society. They can be inspired to join environmental protection organizations, participate in environmental protection publicity activities, and advocate for low-carbon and environmental protection concepts in their daily lives. For example, students may organize environmental protection seminars in their communities or use social media to spread environmental protection knowledge. These activities can help students better understand social issues and play an active role in social development.

6.2. Strengthening the sense of community

Environmental protection requires the cooperation of the whole community. Integrating the low-carbon and environmental protection concept into ideological and political education can strengthen students' sense of community. Students can be educated to work together with their classmates, family members, and neighbors to protect the environment. For example, in a community-based environmental protection project, students can work with local residents to carry out waste sorting and environmental improvement activities. This cooperation can enhance the sense of community and promote social harmony [10].

6.3. Promoting sustainable social development

The concept of low-carbon and environmental protection is crucial for sustainable social development. By integrating this concept into ideological and political education, students can be trained to become the main force of sustainable social development. They can carry forward the concept of low-carbon and environmental protection in their future work and life, and contribute to the realization of sustainable social development. For example, students who study environmental-related majors can use their professional knowledge to develop more sustainable development strategies for enterprises or communities.

7. Practical cases of integration

7.1. Case of school-based curriculum development

Some schools have developed school-based ideological and political education curricula that integrate the concept of low-carbon and environmental protection. For example, a school has developed a "Low-Carbon Life and Environmental Protection" curriculum. This curriculum includes theoretical teaching on environmental protection concepts, such as the carbon cycle and the impact of greenhouse gases, as well as practical activities. Students are required to conduct environmental protection surveys in their communities, analyze the environmental problems in their areas, and propose solutions. Through this curriculum, students' awareness of environmental protection has been significantly improved, and they have also developed practical skills in data collection and analysis.

7.2. Case of campus cultural construction

Many schools have carried out campus cultural construction activities that integrate the concept of low-carbon and environmental protection. For example, another school has set up environmental protection publicity boards on campus, which display the latest environmental protection news, scientific knowledge, and students' environmental protection achievements. The school also organizes environmental protection theme class meetings every semester, where students can discuss environmental issues and share their experiences in environmental protection. In addition, the school has established an environmental protection club, which organizes various environmental protection volunteer activities, such as campus greening and energy-saving campaigns. These activities have created a strong campus cultural atmosphere of low-carbon and environmental protection.

7.3. Case of social practice

Some schools have encouraged students to participate in social practice activities related to low-carbon and environmental protection. For example, another school has cooperated with local environmental protection organizations to carry out a "Low-Carbon City Exploration" project. Students participate in field investigations of local environmental protection facilities, such as waste-treatment plants and sewage-treatment plants. They also interview environmental protection experts and local residents to understand the current situation and challenges of environmental protection in the city. Through these social practice activities, students have a more in-depth understanding of environmental protection issues and have improved their social communication and problem-solving abilities.

8. Challenges and countermeasures in integration

8.1. Challenges

8.1.1. Lack of teachers' professional knowledge

Many ideological and political education teachers lack professional knowledge and skills related to low-carbon and environmental protection. This may lead to inaccurate or one-sided teaching. Teachers may not be able to provide in-depth explanations of scientific concepts in environmental protection, such as carbon capture and storage technologies, or may not be able to analyze the complex relationship between environmental policies and social development.

8.1.2. Insufficient teaching resources

There is a shortage of teaching resources related to low-carbon and environmental protection in ideological and political education. Textbooks may not contain up-to-date and comprehensive content on environmental protection, and there may be a lack of teaching cases, multimedia materials, and experimental equipment. This restricts the effectiveness of teaching and the students' in-depth understanding of environmental protection concepts.

8.1.3. Difficulty in evaluation

Evaluating the effect of integrating the low-carbon and environmental protection concept into ideological and

political education is challenging. There is currently no unified and scientific evaluation standard. It is difficult to measure students' changes in environmental awareness, values, and practical abilities accurately. Traditional evaluation methods, such as written tests, may not be able to fully reflect students' learning achievements in this area.

8.2 Countermeasures

8.2.1. Strengthening teachers' training

Schools and educational departments should organize regular training for ideological and political education teachers. These trainings can include courses on environmental science, environmental policy, and teaching methods related to environmental protection. Teachers can also participate in academic seminars and workshops to exchange experiences and learn the latest research results in the field of environmental protection. For example, sending teachers to participate in environmental protection training programs organized by universities or professional environmental protection institutions.

8.2.2. Developing teaching resources

Efforts should be made to develop a variety of teaching resources. Textbooks should be updated to include more content on low-carbon and environmental protection, and teaching cases from real-life environmental protection practices should be collected and compiled. In addition, multimedia teaching resources, such as videos, animations, and online courses, can be developed to make the teaching more vivid and accessible. For example, creating an online teaching platform dedicated to environmental protection education, where students can access a wealth of teaching materials.

8.2.3. Establishing a scientific evaluation system

A scientific evaluation system should be established. This system can include multiple evaluation methods, such as students' participation in environmental protection activities, their performance in practical projects, and their written reflections on environmental protection issues. In addition, peer evaluation and self-evaluation can be introduced to make the evaluation more comprehensive and objective. For example, students can evaluate each other's performance in environmental protection group projects, and teachers can also evaluate students based on their long-term performance in environmental protection-related activities.

9. Conclusion

To sum up, the integration of the low-carbon environmental protection concept into ideological and political education helps to cultivate students' awareness of environmental protection, improve students' comprehensive quality, guide students to realize the importance of low-carbon environmental protection, develop good behavior, consciously protect the environment, and save resources in daily life. Thus, during the ideological education, the current teaching should be based on low carbon environmental protection concept, optimization design education courses, pay attention to understand the knowledge of the classroom, and according to the low carbon environmental protection concept and ideological knowledge diverse practice, improve the students' comprehensive quality, enhance students' emotional experience, and complete the evaluation of communication, further improve education work,

promote students' all-round development, giving play to the role of education.

Funding

This paper is one of the research results of the project "Research on the Impact of Low-Carbon Education in Primary and Secondary Schools on the Construction Ideological and Political Courses" in Tai'an City in 2024 (TJK202409Z176).

Disclosure statement

The authors declare no conflict of interest.

References

- [1] Kohlberg L, 1981, Essays on Moral Development: The Philosophy of Moral Development, Harper & Row, New York.
- [2] Marx K, 1867, Capital: A Critique of Political Economy, Penguin Classics, UK.
- [3] WCED (World Commission on Environment and Development), 1987, Our Common Future, Oxford University Press, Oxford.
- [4] Ramanan VK, Saykin AJ, 2013, Pathways to Neurodegeneration: Mechanistic Insights from GWAS in Alzheimer's Disease, Parkinson's Disease, and Related Disorders. Am J Neurodegener Dis, 2(3): 145–175.
- [5] Anon, 2017, AACR Project GENIE: Powering Precision Medicine through an International Consortium. Cancer Discovery, 2017: 818–831.
- [6] Tang R, Yang H, Gong Y, et al., 2017, A Fully Disposable and Integrated Paper-Based Device for Nucleic Acid Extraction, Amplification and Detection. Lab on A Chip, 17(7): 1270–1279.
- [7] Nam MA, 2013, A Study on Eco-Systemic Factors Affecting Depression and Global Life Satisfaction of Young Single Mothers. Journal of the Korean Society of Child Welfare, 2013(44): 91–125.
- [8] Li J, Zhang J, Li X, et al., 2024, Tourists' Visual Attention and Preference of Intangible Cultural Heritage. Asia Pacific Journal of Tourism Research, 29(6): 16.
- [9] Kim DH, 2022, Three Forms of Tears at Art Museums: A Phenomenological Study of Viewers' Tear-Shedding Experiences Through Blog Narratives. Empirical Studies of the Arts, 41: 411–432.
- [10] Frongillo EA, Tofail F, Hamadani JD, et al., 2014, Measures and Indicators for Assessing Impact of Interventions Integrating Nutrition, Health, and Early Childhood Development. Annals of the New York Academy of Sciences, 1308: 68–88.

Publisher's note

Whioce Publishing remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.