

Exploration of the Path and Challenge Response to the Sustainable Development Strategy of Higher Education

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ABSTRACT

Against the backdrop of the continuous promotion of the United Nations Sustainable Development Goals and China's construction of an ecological civilization, "universities are not only an important component of the sustainable development process, but also a key driving force for achieving social sustainable development." Whether universities can complete the strategic transformation from traditional development models to sustainable development models and become an important force in promoting social sustainable development is a major and urgent task before us. Green development is not just about the physical "greenness" of universities, but also a comprehensive transformation and upgrading of educational ideas, research methods, management methods, and spiritual culture. Therefore, the article will focus on a series of important concepts and basic connotations of connotative development in universities, and propose specific strategies for implementing the connotative development strategy in four aspects: teaching and research and student cultivation, research and social contribution, university operation and physical space, and cultural atmosphere and school management. Furthermore, it will analyze possible issues such as cognitive concepts, institutional mechanisms, resource strength, evaluation standards, and internal and external conditions that may arise under the connotative development strategy. And based on this, propose targeted countermeasures and suggestions.

KEYWORDS

Higher education; Strategy of sustainable development; Path exploration; Challenge response

1. INTRODUCTION

After entering the 21st century, issues such as climate change, energy crisis, and wealth gap began to emerge and threaten the development process of the entire human civilization. In this context, the United Nations Sustainable Development Goals emerged and pointed out the path forward for all mankind. Universities are important drivers of social development and the key to the continuation of the entire civilization, serving as a vital force driving profound change. It is not only the main battlefield for disseminating knowledge of sustainable development and cultivating key capabilities needed for future society, but its vast organizational system, resource consumption, and extensive social influence also make its sustainable transformation a key microcosm and leading practice for the entire society to move towards a green and inclusive future [1].

2. MULTIPLE DIMENSIONS AND CORE CONCEPTS OF SUSTAINABLE DEVELOPMENT IN HIGHER EDUCATION

To understand the connotation of sustainable development in universities, it is necessary to first construct a comprehensive conceptual model in a non ecological sense. This is a complex concept

that includes four fields: environment, society, economy, and governance. Its basic connotation refers to a sustained state that satisfies the survival and development of present and future generations, while coordinating the operation of the school itself with the social and natural environment in which it operates. One is the foundational layer - minimizing the impact of education on the small environment of universities and maximizing its contribution; Specifically, it is manifested in carrying out systematic activities such as energy conservation and consumption reduction, water conservation and emission reduction, solid waste reduction, resource utilization and recycling, building energy conservation and green building, campus biodiversity protection, etc., effectively reducing the unit's carbon emissions and ecological footprint, and building the campus into a miniature world and model project of ecological civilization; The social dimension refers to fairness, justice, equal sharing, and humanistic care. It emphasizes that university education should ensure relatively equal opportunities for education, pay attention to the education and development of marginalized groups, and maintain the happiness, health, and safety of all individuals within the school. On the economic level, it is stability and value added. This means not only that universities themselves need to maintain long-term stability in financial management and resource allocation to ensure the continuous realization of their basic functions, but also that their economic behavior should contribute to the sustainable development of the entire society and even the wider economy. The governance level is a pivotal system that connects and promotes the first three levels. Good governance means turning sustainable development from a concept into a rule. This means that universities need to establish clear goals for sustainable development from the top-level planning, build decision-making and implementation processes involving multiple departments, make sustainability performance a part of the evaluation of various departments and important positions, and ensure normalized measures for resource allocation, communication transparency, and continuous improvement [2].

3. MULTIPLE PATHS FOR IMPLEMENTING SUSTAINABLE DEVELOPMENT STRATEGIES IN HIGHER EDUCATION

3.1. Educational Reform and Talent Cultivation

Talent cultivation is the fundamental mission of universities and the soil for the sustainable development strategy to take root and sprout. The key to reform lies in organically integrating knowledge, skills, values, and ways of thinking of sustainable development into the entire process of talent cultivation [3].

One is the reshaping of curriculum design. It's not as simple as adding an environmental education curriculum, but a curriculum revolution. One way is to offer a school wide core course on sustainable development, forming a consensus on basic knowledge and values; Another challenge is to promote the integration of professional teaching in various disciplines with sustainable development, such as emphasizing ecological design in engineering, teaching environmental costs in economics, emphasizing ecological justice in law, etc., in order to break down disciplinary barriers and cultivate students' systematic thinking abilities.

The second is the method of reforming education. Duckweed education cannot help us deal with complex real-world problems. We need to adopt more problem centered, project-based learning, and scenario based learning methods. For example, involving students in school carbon emissions audits, community water pollution source investigations, and entrepreneurial activities of social enterprises, in real challenges, integrating knowledge and skills, cultivating scientific thinking methods, learning cooperation and communication, and daring to explore and innovate [4].

3.2. Scientific Research and Social Services

Universities are the source of knowledge innovation, and their scientific research determines the definition of the scope and possibilities of sustainable development research; Meanwhile, as a member of social organizations, its role in knowledge dissemination and services also determines the practical process of sustainable development [5].

Universities should encourage and support interdisciplinary scientific research aimed at addressing major challenges to sustainable development, such as addressing climate change, developing renewable energy, protecting biological resources, green buildings, and social equity. They should also conduct performance evaluations and adjust funding for related research activities. Encourage cross disciplinary and problem-solving research, establish specialized funds, and set up cross disciplinary research centers or teams to facilitate effective communication and exchange among natural sciences, engineering technology, social sciences, and humanities. In the field of social governance, knowledge transfer and utilization have become important links. Universities should actively step out of the ivory tower and build a more open and shared knowledge transfer model, such as jointly developing green technologies with enterprises and promoting industrialization; Provide scientific decision-making consultation and evaluation for government departments to formulate policies related to environmental protection, economic development, and social governance; Diversified science popularization and promotion to all sectors of society, etc. Enhance the concept of sustainable development and scientific literacy level of the whole society. Give full play to the role of think tanks in universities and strengthen research in this regard [6].

3.3. Campus Operations and Infrastructure

The university campus itself is a micro city, and its daily operations and physical space are the most intuitive and fundamental carriers for practicing the concept of sustainable development. A green, intelligent, and healthy campus environment is itself a vivid textbook [7].

Green school creation. Develop and implement an overall sustainable development plan for the campus, covering energy, water, waste, transportation, greenery, buildings, and other aspects within the campus. The main measures taken include: vigorously using energy-saving technologies and products, actively developing new energy sources such as solar energy and geothermal energy; Establish a comprehensive water-saving system, construct reclaimed water and rainwater utilization devices; Implement strict garbage disposal and resource recycling, striving towards "zero waste"; Improve campus transportation methods and promote walking, cycling, and green public transportation; All newly constructed, renovated, and expanded buildings are designed and built in accordance with green building standards. Implement green procurement policies in supply chain management, prioritize environmentally friendly and socially responsible products and services, promote local ingredients, reduce food waste, and provide more healthy and vegetarian options in catering services, and even incorporate environmental, social, and governance standards into university foundations or donation fund investment portfolios. Thirdly, we must achieve sustainable financial resources.

3.4. Organizational Culture and Governance Structure

Finally, truly effective reforms are long-term and require corresponding systems and culture to ensure their implementation effectiveness. The realization of sustainable development also requires the promotion of appropriate organizational structure and organizational culture. Strong senior leadership and clear strategic planning are the starting points. University leaders should demonstrate their commitment to making sustainable development a strategic priority for school development. Develop a guiding sustainable development strategy document to clarify the vision, goals, key areas of activity,

and timeline, and to align it with the school's overall development plan, discipline development plan, campus construction plan, etc., ensuring strategic consistency and continuity.

4. MAIN OBSTACLES AND COUNTERMEASURES IN THE IMPLEMENTATION PROCESS

4.1. Conceptual Cognition and Cultural Conflict

Firstly, there are difficulties in understanding. The concept of sustainable development on campus may be fragmented, one-sided, or misinterpreted. Some people may simply equate it with environmental protection and energy conservation, and feel that it is irrelevant to their own learning; Traditional advantageous disciplines tend to use disciplines as barriers and are unwilling to integrate across borders; The long-standing emphasis on scientific research over talent cultivation and the neglect of social services in paper writing can easily contradict the emphasis on action learning and values in sustainable development education [8]. The solution to this problem is continuous, multi-level, and multi-faceted communication and skill development. Leaders repeatedly and uniformly introduce the importance and overall value of strategy; Organize high-quality workshops, forums, and training activities to help teachers with interdisciplinary backgrounds understand the relationship between sustainable development and their own teaching research, and provide tools and examples on how to introduce SDGs into the classroom. The third is the demonstration effect, which is demonstrated by past successful cases (such as improved student quality, more scientific research projects, more beautiful schools, and higher school visibility), thereby eliminating doubts, creating a public opinion atmosphere, and optimizing cultural ecology.

4.2. Obstacles to Institutional Mechanisms

The original organizational and management systems of universities are often established to ensure daily operations and discipline construction, which may be a rigid constraint on the continuous work of cross-border integration and innovation. Colleges and functional departments operate independently, with fragmented resources and information barriers, making it difficult to collaborate. More importantly, the existing teacher evaluation system, professional title evaluation system, scientific research evaluation system, and college performance evaluation system are mostly measured by traditional quantitative standards such as papers, projects, and funding, neglecting the recognition of teachers' contributions and achievements in sustainable development education curriculum construction, cross disciplinary research, and social service work, which has dampened the enthusiasm of teachers and students. So, reform is urgently needed. Firstly, an open and efficient collaborative work mechanism should be established, such as forming a working group led by school leaders or adopting a project-based operation approach to break down institutional barriers; Secondly, the difficulty lies in promoting a comprehensive update of the evaluation system [9]. When assessing teachers, the exploration of green development education and teaching practices, cross integration of scientific research output, and social service effectiveness should be included in the evaluation indicators. Incorporate the contribution of departments and faculties in their sustainable development process into the assessment and evaluation system, and use institutional leverage to drive resource investment direction and individual action direction.

4.3. Resource and Capability Constraints

Implementing any plan requires costs, and sustainable development transformation, especially initial infrastructure updates and curriculum redesign, may involve higher upfront investments. Many universities, especially those with limited funding, are constrained by financial constraints. In addition, there is a shortage of skills, and many teachers hope to incorporate sustainable development content into the classroom, but lack corresponding knowledge reserves and guidance. There is

insufficient reserve of relevant professional knowledge among management personnel, and the knowledge of green campus planning, design, and operation management is not comprehensive enough; There are relatively few mature and comprehensive textbooks and case studies for interdisciplinary courses. Faced with limited funding needs, open up sources and cut costs, and act within our means. Investment can be divided into priority and urgency, and projects with quick results and good benefits (such as lighting engineering) can be prioritized while ensuring a certain quantity. Think of multiple ways, seek support, and strive for sponsorship from national and local governments, enterprises, institutions, and social organizations, as well as donations from alumni. From a capability perspective, setting up special funds for teacher professional improvement and teaching reform research, conducting centralized training, learning, and discussion exchanges, guiding the formation of inter school curriculum databases and case databases to jointly build alliances, reducing the cost of independent research and development for individual schools, and complementing each other's strengths and weaknesses.

4.4. Difficulties in Evaluation and Measurement

How to scientifically and comprehensively evaluate the effectiveness of sustainable development strategies is a global challenge. The effects of sustainable development are long-term, indirect, and diverse, and many indicators that are difficult to quantify are difficult to capture. Without appropriate measurement tools, it is difficult to make correct judgments, identify problems, hold accountable, and continuously improve, and strategies will also be idle. Universities can refer to the commonly used sustainable development tracking and evaluation rating system and the Times Higher Education Impact Ranking method internationally, but more importantly, they should build an evaluation index system based on their own strategic priorities and the actual situation of the school. The system should be hybrid, including both quantifiable procedural goals and qualitative outcome goals. Regularly releasing sustainability reports, openly and transparently showcasing progress and reflecting on shortcomings, is the key to using evaluation for learning and improvement, rather than just assessment.

4.5. Complexity of External Environment

Universities cannot exist in a secluded paradise, as their strategic implementation is influenced by peripheral policies, markets, and location environments. If there is no sustained and strong support at the national or regional level, it will be difficult for universities to fight alone. The lack of clear understanding and demand for sustainable development abilities among college students in the job market can also limit their enthusiasm for course selection and the willingness of schools to cultivate them. In addition, the level of economic development, industrial status, and socio-cultural environment of the region where the university is located also affect its social services and collaborative opportunities. In the face of the complex and ever-changing external world, universities should not passively respond but take the initiative and actively create. From a policy perspective, universities can participate in the discussion and formulation of local and even national sustainable development policies by leveraging their own think tanks and research advantages, serving as advocates and think tanks for policies. From the perspective of the linked market, actively connecting with forward-looking enterprises through co building laboratories, customized training, internship practices, and other means, jointly defining the ability needs of future talents, and clearly conveying the value of cultivating sustainable development leaders to the whole society.

From the perspective of regional integration, universities should deeply embed themselves in the local community, leveraging geographical advantages to promote the mutual empowerment of regional sustainable development and talent cultivation, turning environmental complexity into a driving force for innovative education.

5. CONCLUSION

The sustainable development of higher education is a major strategic transformation towards the future development of higher education and long-term social stability. It is not a simple work of one school, one place, overnight, but a major reform, adjustment, and innovation in ideological concepts, institutional mechanisms, education and teaching, talent cultivation, scientific research, serving society, and the internal and external environment of schools. The various aspects, levels, and links mentioned in the article all demonstrate the importance and difficulty of this work. In the future, sustainable development will become the new standard for excellent universities. Only by making such a systematic transformation and embedding the concept of sustainable development into the organizational DNA of universities can they gain reputation and competitiveness in the future, cultivate new people who shoulder the great responsibility of national rejuvenation, lead the progress of human civilization, create public knowledge to address common challenges of humanity, and play an irreplaceable sacred mission in demonstrating the good paradigm of social sustainable development. This exploration and challenge process itself is the most convincing practice of higher education in building a greener, more just, and prosperous world.

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