2024, 19(2): 242-250

DOI: https://doi.org/10.35784/preko.5596

Research on Countermeasures to Build a Green University Management System under the Concept of Ecological Education

Badania nad problemami związanymi z budową zielonego systemu zarządzania uczelnią w ramach edukacji ekologicznej

Jing Zhou

School of Public Administration, Guilin University of Technology, Guilin, Guangxi, 541004, China
E-mail: 2009033@glut.edu.cn

Abstract

Higher learning institutions have played a significant role in enhancing ecological education and ideological development among students. This is in response to the many problems occurring in the modern world concerning ideological and environmental aspects. Despite the efforts made by the state through increasing investments to deal with these aspects effectively, the resulting impact is not satisfactory. As a result, higher learning institutions have served as a significant area in offering solutions to these problems by nurturing high-level social talents. Education in higher learning institutions has dramatically expanded and integrated new research areas to counteract the limitations of traditional learning methods. Colleges and universities have upgraded their teaching activities and education sites in the modern era. However, these institutions have experienced many challenges and problems which have severely affected the ideological education ecosystem and the moral quality of students. The ecological education crisis in most learning institutions has become an unavoidable drift of the current education development. As a result, ideological education in colleges and universities is regarded as an ecosystem since it is analyzed from an ecological perspective. The ecology of ideological education refers to the environmental balance, law, and processes involved in the ideological education system. Furthermore, it incorporates value alignment and procedural thinking on the interaction between the environment and various aspects. Ecological and environmental development significantly impacts higher education students' values, emotions, and thoughts in the new environment. Therefore ecological changes have clear impacts on the living environment, which is in compliance with sustainable development concept.

Key words: environmental management system, ecological education, green universities, ecological management, public participation, green university management

Streszczenie

Uczelnie wyższe odegrały znaczącą rolę w wzmacnianiu edukacji ekologicznej i rozwoju ideologicznym wśród studentów. Jest to odpowiedź na wiele problemów występujących we współczesnym świecie, dotyczących aspektów ideologicznych i środowiskowych. Pomimo wysiłków państwa poprzez zwiększanie inwestycji, aby skutecznie uporać się z tymi problemami, uzyskane skutki nie są zadowalające. Instytucje szkolnictwa wyższego odegrały ważną rolę w oferowaniu rozwiązań tych problemów poprzez pielęgnowanie wysokopoziomowych talentów społecznych. Edukacja w instytucjach szkolnictwa wyższego radykalnie rozszerzyła i zintegrowała nowe obszary badawcze, aby przeciwdziałać ograniczeniom tradycyjnych metod uczenia się. W epoce nowożytnej uczelnie i uniwersytety unowocześniły swoją działalność dydaktyczną i obiekty edukacyjne. Jednakże instytucje te doświadczyły wielu wyzwań i problemów, które poważnie wpłynęły na ideologiczny ekosystem edukacji i jakość moralną uczniów. Kryzys edukacji ekologicznej w większości placówek edukacyjnych stał się nieuniknionym dryfem obecnego rozwoju edukacji. W rezultacie edukacja ideologiczna w szkołach wyższych i na uniwersytetach jest

traktowana jako ekosystem, ponieważ jest analizowana z perspektywy ekologicznej. Ekologia edukacji ideologicznej odnosi się do równowagi środowiskowej, prawa i procesów zachodzących w systemie edukacji ideologicznej. Ponadto obejmuje dostosowanie wartości i myślenie proceduralne dotyczące interakcji między środowiskiem a różnymi aspektami. Rozwój ekologiczny i środowiskowy znacząco wpływa na wartości, emocje i myśli studentów szkół wyższych w nowym środowisku. Dlatego zmiany ekologiczne mają wyraźny wpływ na środowisko życia, co jest zgodne z koncepcja zrównoważonego rozwoju.

Słowa kluczowe: system zarządzania środowiskowego, edukacja ekologiczna, zielone uniwersytety, zarządzanie ekologiczne, udział społeczeństwa, zielone zarządzanie uniwersytetem

1. Introduction

The green building and sustainable development of higher education have attracted much attention throughout the globe due to the many sustainable development problems that have emerged in many states. A significant focus on the regional ecological system has been established in many universities. Green universities are the higher education communities that promote environmental quality, conservation of resources, and better energy efficiency through establishing an excellent educational environment and sustainable development education (Yaoteng & Xin, 2022). Furthermore, universities can promote sustainable development by enforcing their significant research, public service, and education functions. Many researchers worldwide have investigated green campus construction and management, green building standards, sustainable universities, environmental protection plan, university environment quality management systems, and energy conservation evaluation index schemes.

On the other hand, there is no clear comprehension of the essential technique to create and manage green universities, especially in a lenient environment. There has also been a great need for better systematic research on operation mechanisms and management methods. As a result, university stakeholders and administrators need to recognize the importance of sustainable development in higher learning and the entire framework. Through sustainable development approaches in universities, ecological civilization and sustainable development concepts will be promoted in society. Greening is an exercise that involves upholding values on the environment (Cuaresma, 2019). This practice necessitates all institutional members to accomplish a greening role both in the work and the workplace. Higher learning institutions can achieve greening by implementing a green curriculum which will assist students in comprehending the association between the environment and their subjects.

Furthermore, the green curriculum approach in higher education can promote sustainable development through proper research, learning, training, and outreach actions in engineering innovation, science, and technology. Universities should integrate various transdisciplinary elements in their lectures, for instance, global environmental concerns, environmental impact assessment, pollution and sustainable waste management, an overview of environmental and natural resources, human ecology, fieldwork, and action research. Through ecological education, students will be more mindful of the environment and the associated challenges. Furthermore, ecological education empowers students in higher learning institutions with proper knowledge, inspiration, attitudes, and skills to work cooperatively or independently toward achieving proper solutions to existing environmental problems and preventing new challenges.

Sustainability and sustainable development have become major global issues and require responses from institutions, individuals, and administrations at all levels. The growing need for a more sustainable society has greatly affected the higher education sector. As a result, a high challenge on sustainability has affected policymakers, students, and teachers in higher learning institutions. Universities can enhance sustainable development by implementing and adopting proper sustainable practices in their research programs and curricula (Kurbatova et al., 2022). Furthermore, they can promote sustainability by minimizing the harmful effects of their activities on the environment, economy, and society. Universities substantially impact the environment, economy, and society since they shape society's values by educating the present and future decision-makers. Many organizations, such as UNESCO and the UN, have emphasized the critical role of universities in establishing a more sustainable society through education for sustainable development initiatives.

Also, the significance of sustainability in university programs is evident through the assertions made by many national and international organizations concerning the role of higher educational institutions in achieving sustainable development goals. Therefore, universities can achieve sustainability either as an organization or as an agent in society. They can do this by integrating sustainability in various undertakings such as research, campus activities, responsibility, teaching, community participation, and institutional framework. Based on a theoretical perspective, intellectuals have stated that higher learning institutions are considered green or sustainable when they implement sustainability in all scopes of the institution (Limphaiboon et al., 2022). However, most scholars have not comprehensively researched the implementation of green concepts in universities. Literature discloses the deficiency of empirical studies concerning the on-site apprehension of a green university.

Currently, sustainability in higher learning institutions only accounts for the integrated institutional scopes exclusively. These include the dissemination of sustainability reporting, the integration of sustainability principles into

the educational curriculum, and the implementation of green initiatives in universities. Green campuses act as agents of change by integrating environmental protection and management in higher learning institutions. Based on efforts made by universities to attain sustainable development, various models have been implemented to enhance nature conservation and promote green campuses. These campuses blend the environment and the campus domain in their management. It is, therefore, essential to explore the implementation of a green university whereby sustainability is applied in higher education management.

2. Comprehensive Strategy Management of Green Universities Overseas

There are three main phases of green university implementation. The first phase involves the principles of sustainable development set forth by universities in the absence of a clear policy. Based on the second phase, universities acknowledge the significance of sustainable operations. As a result, they consider sustainable development a high target and enhance holistic management by implementing cross-sectoral, cross-disciplinary, and cross-major integrated strategies. In the third phase, university sustainability operation and management are enhanced through policy regulation, collaboration with higher education stakeholders, and search for international certification (Arinta, 2022). Foreign intellectuals aim at accomplishing green university management and operation by implementing environmental management systems and comprehensive management strategies. There are several elements contained in the university management system environment. These include the exterior community, assessment, university functioning, reporting, and education research.

In addition, the ecological management and assessment strategy and the green building initiative are the main types of environmental management systems. Other systems include the European Union, incorporated in higher education institutions or public sectors without a precise environmental management certification. Several researchers regarding environmental management systems proposed a three-dimensional model. This model includes sustainable development of education and scientific research, public involvement, and implementation of environmental management systems (Cai et al., 2019). Furthermore, this model only sets forth an elementary framework with no authentic solid content. It presents a green university operation management pattern by significantly integrating university functions and the environmental management system. However, some scholars who perceived universities as business segments attempted to examine university management operations by presenting theories related to enterprise operation management.

Green university's management operation incorporates public involvement and environmental quality management systems as the main aspects. In the green university implementation process, there are several categories involved. These include the political and communal anticipations, operation, and strategic layers. The human factor is highlighted as the most significant factor in implementing an environmental management system (Li et al., 2019). Based on several individuals organizing places and processes, the enactment of this system should be pull-oriented rather than push-oriented. Furthermore, complementary studies portray that several grade subdivisions occur due to public involvement in the global community and the authorization of significant public concerns. Other sectors include various undertakings based on the extent of public involvement and are distributed from the weak to the strong ones.

Green university initiatives and higher education sustainability efforts differ significantly across countries and regions. For example, Indonesia pioneered the UI Green Metric system, which rates university sustainability performance on metrics like infrastructure, energy use, waste management, and others. Over 900 universities globally now use this assessment and ranking system as a benchmark (Zheng & Luo, 2020). Meanwhile, France has mandated sustainability reporting for large public universities to ensure transparency and accountability on impacts. The University of California system in the United States has a comprehensive policy requiring all campuses to eventually achieve climate neutrality via energy efficiency, renewables, and carbon offsets (Cuaresma, 2019). These major public university systems exemplify targeted efforts in the developing world (UI Green Metric), policy-driven efforts in Europe (France), and ambitious sustainability goal setting in North America (University of California). Models span from voluntary benchmarking systems to top-down legal requirements depending on the local and national context (Atici et al., 2021). As green building initiatives spread globally, understanding this diversity of approaches will be essential for successfully adapting ideas across borders.

Public participation is connected to students' future in higher learning institutions. It helps to reinforce the student's skills such as self-management, confidence, and self-motivation and involves extra renowned capacities for openness. Many intellectuals have verified the positive impact and empowerment legitimacy of public participation. For instance, Arne Stan's theory of public participation and the Effective Decision Model of Public Involvement by Thomas are some scholars who engaged in research on the sector of public participation. Interconnected research portrays that despite the types of environmental management systems implemented, the hybrid device, management model, and bottom-up participatory are the most efficient. Proper standards should be implemented and executed for sustainable development of the environmental management system mechanism in higher learning institutions.

3. The Internal Green University Building Objective and Technical Approaches

The internally associated research is concentrated on three significant aspects. The first aspect involves conferring the elementary aim of establishing green universities. Sustainable development and ecological civilization can be fully implemented by incorporating the circular economy concept in the university's operations management activities. It can also be enforced by upholding the competition and advancing the institution's capacity toward sustainable development. Green universities typically uphold individual education as fundamental by integrating directorial ideologies and sustainable development ethics in higher education. As a result, these higher education institutions have the potential to advance in terms of sustainable development and keep pace with modern times. The second aspect involves index assessment extent and technology application. The index assessment and the evaluation index scheme of the green gradation conduct evaluation by incorporating the index three-layer structure, criterion layer, and the target layer (Kosiński & Skotnicka-Siepsiak, 2022). This assessment aims to enhance university building, practice, scientific research, and education. For example, water management can be implemented in higher learning institutions using the life cycle breakdown to improve the drainage system and water supply. Furthermore, energy management in universities can be enhanced by assessing the incorporation of energy conservation technology and the relevant policy issues in green universities. Analysis of green universities' resource and energy proficiency status quo is also essential. Most internal academic groups are deficient in green institutional soft management, particularly general operation management research.

4. The Green View of Building a University Management System

Based on the management perspective in the current era, green universities focus on establishing green construction practices and academic research outcomes. The establishment of green schools should align with the necessities of environmental protection, energy conservation, and ecological balance. Proper planning and design in student organizations is an excellent way of promoting green education in universities (Lee & Power, 2021). Furthermore, universities contribute towards sustainability by motivating students to engage in green consumption behaviors and environmental conservation activities. Green action and environmental protection propaganda in higher learning institutions also promote sustainability. Universities should integrate green education to include essential knowledge and skills of engaging in green activities and low carbon life. They should also enhance the incorporation of environmental knowledge and ideas into lesson plans and facilitate proper connections between teachers and students.

In this regard, the green university management system should implement appropriate strategies by considering elementary components such as support systems, green scientific research, and green education. Green scientific research is essential in enhancing environmental protection awareness and sustainable development by developing and applying all kinds of energy-saving technology. Through green technology, the consumption of resources is reduced, and the efficiency of scientific research is improved. As a result, a low-carbon economy is achieved. The green university management system involves using hardware facilities and software systems to establish a proper management structure in green universities (Gomez et al., 2019). Green campuses can be achieved through various practices such as the establishment of ecological information systems, application of pollution prevention and control technology, energy saving, green education campaigns, the cultural building of green campuses, and regulation of energy consumption. Other practices include proper organization and management of green campus traffic, overall evaluation of quality management in green universities, regulation of carbon footprint, and green action.

Implementing green scientific research in the university management system enhances the creation of significant policies by the social management decision-makers in higher learning institutions. Furthermore, it facilitates the spread of knowledge and skills, enhances change in development patterns, and directs social practices. Green universities' sustainable development strategies refer to enacting a sustainable design framework. However, the overall design should affect sustainable development aspects of university management and education. Infiltration of management in all university aspects will guarantee the validity of the green university sustainable development policy. Stakeholders such as student participation are very significant in green education management and university management methods. Therefore, an elementary management framework can be established in green universities based on the general operation of these institutions at different levels and characteristics.

Furthermore, the theory of public participation is appropriate for establishing green universities. The sort and level of appropriate parties who engage in green university organization structure and management approaches are related to public engagement. In a modern civilized society, students are considered social citizens aware of their political rights and exercise them by engaging in public management implementation and decision-making (Zanellato & Tiron-Tudor, 2021). Furthermore, since students are part of civil society, they actively participate in social governance. The primary objective functions of higher learning institutions involve scientific research and teaching. As a result, most colleges and universities in many countries are generally categorized based on their functions.

For instance, universities can be classified as teaching research-oriented, research teaching model, teaching style, and research-based.

Research teaching models and teaching research-oriented universities have no harsh principles to tell them apart. This is because equal significance is attached to these institutions' teaching tasks and scientific research. Furthermore, these universities nurture research potential for innovative talents by offering graduate and undergraduate education. They also enforce solid research skills in students in various fundamental areas and subjects. However, these universities might be slightly feeble in the green transformation of technological and scientific accomplishments and the social service function. They might also not possess the capacity for comprehensive development. Generally, there are breaches in building funds. Therefore, the management mode in green universities should focus on scientific research and education (Arinta, 2022). The organization structure is appropriate for green campus management and control of deteriorating green management institutions.

On the other hand, research-based universities are characterized by a reasonable structure, excellent infrastructure, experimental apparatus and amenities, comprehensive teaching, institution strength, scientific research, and a full faculty scale. This type of green university management method denotes the progressive experience of establishing a comprehensive green management system either domestically or internationally. Furthermore, this system comprises the construction commission, the committee of experts, and the green university management committee. The construction office facilitates the coordination of various departments, while the management committee is typically the school leadership. Nevertheless, universities of teaching style should implement green campus management project type. They should also emphasize embracing more authority of deteriorating green management institutions and incorporating sustainable development education in their teaching practice.

The University of Teaching Style has an incomplete subject setting and considerable variations in building funds based on diverse areas and jurisdiction rights. Furthermore, this teaching style is characterized by poor social services and scientific research impact and weak frameworks of the associated infrastructure and the scientific research capacity. In case of ample funds, the efficacy enlarges if it implements the green campus building project type. Conversely, the top-down administrative instruction type management complies with traditional means of university management. Therefore, management processes in all types of universities should incorporate a comprehensive participatory diversified management model from lowermost to uppermost (Us et al., 2022). On the one hand, bottom-up participatory management reflects on the contribution of service performance assessment in green universities. Alternatively, this management style is exemplified in the setting up of the organizational structure and based on the parties involved in apportioning decision-making power.

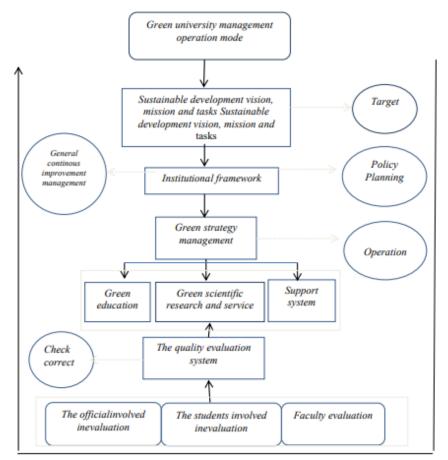


Figure 1. Various branches of management element, source: author own work

Figure 1 shows green university management operation methods. All implemented tasks in green universities should be checked and rectified in quality evaluation management. Green university's management operation style is reflected in an organizational setting whereby the management and organization policy and planning are put forward. The green management style also reflects on the scientific research, complementary services and resources, organization, and implementation of education and project at the strategic level.

5. Problems of Ecological Education in Universities

First, ecological education methods need to be innovated. Most universities utilize various education elements which are not unique enough for ecological construction. Further research by scholars also portrays that only a small percentage of teachers in higher learning institutions implement experience in their teaching practice. As a result, theoretical education is regarded as convectional transmission of knowledge in ecological humanities but disregards the actual student participation. Furthermore, classroom limitations such as space and time make it hard to integrate practical education with the dynamic and static values of the ecological environment. The cultivation of students' ecological quality is also affected by a lack of engagement in environmental protection practice activities and ecological practice.

Furthermore, the education mode based on teaching pays no attention to students thinking conditions and subjectivity. It does not break through the traditional mode since it portrays a dualistic resistance to subjectivity and passive recognition. Proper education should include gaining knowledge through individual experience and efforts. Students in most universities feel that the teaching methods used by most teachers are not innovative enough since they endure the categorization of the internal education environment (Atici et al., 2021). As a result, students' interest in learning declines, making the learning have no impact. Also, most students do not correctly understand the concept of ecological civilization. Improving ecological civilization quality requires access to new information through proper channels. Most students do not consider ecological development as a significant factor but as an optional or supplementary factor.

In addition, there is a need to improve the supply of educational proficiency. This is because most university students have not correctly understood the elementary knowledge of the ecological environment. Most of the ecological knowledge among students is still at an elementary perceptive stage since the elements taken for granted are part of the actual knowledge. Furthermore, ecological education in most universities is not comprehensive and complete. Based on authentic performance, numerous ecological civilizations display realization as an empty field, and the challenge of the ecological environment weakening is considered on-site. Culturing green living habits, management capacity, and ecological consciousness is also not rigid enough. Ecological education is, therefore, very significant in the ideological education of university students.

Most universities experience poor technical conditions, fund shortages, poor energy-saving conditions, and undesirable infrastructure, making enforcing proper ecological measures such as the low-carbon campus difficult. As a result, most resources and energy are wasted since most universities do not consider energy-saving factors in their expansion plans, such as in campus transformation or the design of new buildings. Technical reformation has also become a severe lag in the institutional implementation of energy-saving technology (Zheng & Luo, 2020). Furthermore, most universities follow old management techniques instead of developing new management systems. The ancient systems portray weak professional capacity, poor technical aspects, and low-level management. These systems also lack policies and poor measures for promoting ecological sustainability in universities.

The level of ecological awareness in most universities is also inferior. Therefore, university teachers, students, and other relevant stakeholders should enforce high environmental conservation consciousness. Unfortunately, most universities in many states have not integrated ecological education into their curriculum. Also, the administration in these institutions does not pay proper consideration to waste management techniques, emission reduction and energy-saving methods, and other institutional approaches to promoting sustainability. As a result, it is worrying that some universities do not implement proper measures for sewage discharge, waste disposal, water conservation, recycling, and waste treatment, among others. Therefore, it is essential for university management to come up with proper management systems that promote ecological sustainability.

6. Countermeasures to Promote Sustainable Development in Higher Education

First, propaganda and education should be reinforced to improve university students' sense of responsibility and perception of sustainable development. Higher learning institutions should enforce education for sustainable development among students and integrate sustainable development education into the curriculum system. The relevant personnel are responsible for reinforcing the propaganda of sustainable development in higher learning institutions. Furthermore, implementing ecological education in colleges and universities is very important as opposed to environmental education in only primary and secondary learning institutions. School children, especially in

primary institutions, are not competent enough to protect existing environmental resources by making proper decisions. Therefore, it is vital to reinforce ecological education in universities since students in these tertiary institutions are qualified and competent with appropriate knowledge and skills.

Through propaganda, universities can inspire students to carry out green consumption, properly engage in garbage sorting, return to the harmonious life of nature and human beings, enforce proper measures to conserve water and electricity and facilitate low-carbon travel. Publicity motivates students to properly understand the significance of conserving energy and resources and the appropriate measures to enhance energy utilization (Yaoteng & Xin, 2022). In addition, sustainable development can be enhanced in higher learning institutions by accelerating the production of teaching materials and hardware amenities and increasing the input to endorse ecological education. Universities' environmental protection and energy conservation can be enhanced by reinforcing hardware facilities and teaching resources that aid sustainable development. Higher learning institutions can also draw more brilliant teachers to engage in various levels of sustainable development through capital investment increases.

In this regard, insufficient capital investment is a massive bottleneck in promoting sustainable development education in higher learning institutions. Establishing sustainable development among teachers requires increasing investment in training teachers, primarily through off-job and other means of accelerating university ecological education. Furthermore, policy support and increased capital investment guarantee propaganda work in universities and establish a sustainable development education system. Raising teachers' awareness of sustainable development and reinforcing the construction of university teaching staff are also appropriate measures for promoting sustainable development in higher education (Cuaresma, 2019). Successive implementation of sustainable development education in higher learning institutions requires the availability of teachers who are adequately trained and possess a comprehensive understanding of environmental science.

Most university lecturers lack a macroscopic and logical knowledge structure, although they clearly understand sustainable development education. As a result, universities should motivate their teachers to further their training and enroll in master's or doctoral degree programs and specialize in sustainable development. Furthermore, universities can implement appropriate policies to encourage young and middle-aged lecturers to advance further their teaching and research level on matters of sustainable development. Teachers can improve their efforts to improve their professional quality and create more awareness of sustainable ecological education in higher learning institutions. Young and middle-aged teachers in higher learning institutions can reinforce their theoretical refinement by utilizing the appropriate scientific research platforms to increase their knowledge and understanding of sustainability. These teachers can also gain more knowledge through visiting intellectuals, applying for projects, and other forms

Engaging university students in practical activities can also enhance sustainable development in higher education to solidify their sustainable development mindfulness. Universities should keep up with the current knowledge and practices and stick to the elementary principle of cooperative activities to promote appropriate sustainable education to students in these institutions. Furthermore, higher learning institutions can enable students to experience the importance and need for environmental conservation by properly using special environmental events such as World Environment Day, Tree Planting Day, Switch off lights for an hour, and Earth Day (Kurbatova et al., 2022). Students should be actively engaged in these events and other activities dealing with the environment. Moreover, universities can organize summer vacations for students and effective forms of social practice in winter to enable students to get engaged at the grassroots level and get to the countryside interiors. Higher education institutions should also utilize students' spare time to carry out technological and scientific entrepreneurship deeds among students, perform work-study programs and provide jobs. As a result, students will be equipped with proper values and skills and motivated to establish a low-carbon environment and a sustainable view of life.

To end, universities can promote sustainable development by reinforcing the institutional guarantee of ecological improvement. Higher learning institutions should promptly transform the leading-edge environmental protection technology by advancing and creating market incentive mechanisms to enhance the conversion of research outcomes in the environmental field. Furthermore, universities should also formulate appropriate schemes to reimburse students and teachers who have accomplished exceptional outcomes in executing sustainable development undertakings. Utilizing sound systems to assure sustainable development and environmental protection education in universities is important. Based on this, universities should advance the impact of practical and theoretical teaching and concentrate on the information and professional service platform. They should also facilitate environmental teaching and research by improving the construction of hardware facilities. Furthermore, universities should promote sustainable development, environmental protection, and energy conservation by formulating appropriate systems.

7. Conclusions and Recommendations

Higher education and university students are responsible for implementing environmental and sustainable development education in universities. Universities should offer solutions to prevailing green challenges through innovation, creating environmental awareness, active exploration, and cultivating appropriate environmental protection

concepts for students. Furthermore, these institutions can positively contribute to sustainable development and environmental protection by accumulating substantial professional knowledge for students and implementing sustainable development in universities. Therefore, a multi-level environmental education system should be implemented to offer appropriate ecological education to university students. Furthermore, due to the present environmental and energy crisis, students should be encouraged to devote their talents to sustainable environmental development.

Furthermore, universities should establish a comprehensive green university management system. These institutions should focus on scientific research and education and implement proper project management. It is also crucial for universities to enforce coordination agency and green management in their daily management. Also, higher learning institutions should integrate sustainable development in their education systems and implement control for adequately managing the deteriorated green coordination organization. Universities should incorporate ecological education in their curriculum and promote green campus management. The management system should also fully adopt the diversified management model comprising the bottom-up comprehensive participatory and top-down administrative instruction styles. The feedback mechanism in the green university management process should include total participation in the quality evaluation system, green scientific research, green campus establishment, and green education.

In addition, universities should reinforce the establishment of school spirit and ecological education study spirit among students. Achieving campus ecological protection requires establishing appropriate policies, creating an excellent cultural atmosphere, and enforcing severe punishment for ecologically destructive behaviours. Universities should therefore establish an ecological construction system to reinforce the constraint between the students and the education subject. This system will also boost the consciousness of university students and result in ecological protection. Furthermore, ecological universities can be enhanced through engagement activities such as ecological sports. Due to modern civilization and advancement, strengthening ecological sports creates a suitable environment for institutional activities. Cultivating the ecological concept also enables students to be strong pillars for future societal development.

Although the fundamental principles of sustainability, such as energy efficiency, waste reduction, and responsible resource use, serve as the foundation for all green university efforts around the world, it is essential to modify specific plans and policies so that they are suitable for the local contexts rather than simply copying from other places. In the case of a growing economy, for instance, it may be necessary to prioritize low-cost and low-tech solutions and concentrate on increasing awareness and building capacity before trying to implement sophisticated sustainability measures. University systems that are more established and have adequate resources should align their sustainability objectives with their more prominent capacity to execute comprehensive and cutting-edge green building renovations, clean energy systems, and circular resource flows.

In conclusion, the school environment should be optimized to enhance environmental education among university students. An excellent classroom teaching environment should be created, reinforcing the establishment of campus ecological civilization. Ecological education is essential in enhancing a civilized ecological society. Since universities are the central body in constructing ecological civilization, a conducive learning environment should be created to enhance the cultivation of students' ecological mindfulness. A proper learning atmosphere will also enhance the cultivation of students' objectivity and initiative. Therefore, universities should collaborate with relevant stakeholders and the state to create appropriate laws and regulations that provide an institutional guarantee of a proper teaching environment and ecological environment protection. These policies also motivate university students to protect ecological civilization.

For universities all around the globe to participate in the common objective of improving sustainability, they need to carefully construct programs to reflect their circumstances rather than merely adhering to a single model. What concepts translate well will be determined by several factors, including the maturity of a university, the resources available for financing, the institution's cultural values, the infrastructure already in place, and the policy climate of the government. Early-stage institutions may need to adopt a staged strategy that focuses on improving awareness and making simple adjustments before moving on to more substantial expenditures. Universities that are well-endowed and sophisticated have the potential to take the lead globally by exhibiting exemplary practices that can be replicated. In general, adopting broad information about sustainability to specific local settings will provide the highest possible probability of producing an influence that is both long-lasting and meaningful.

Acknowledgements

2023 Annual project of 14th Five-Year Plan of Guangxi Education Science, Research on Evaluation and Optimization of Undergraduate major Structure in Guangxi (2023B315).

References

- 1. ARINTA Y.N., 2022, Initiation of Green Accounting Based on University Social Responsibility Toward Sustainable University, *JFBA: Journal of Financial and Behavioural Accounting*, 2(1): 46-58.
- ATICI K.B., YASAYACAK G., YILDIZ Y., ULUCAN A., 2021, Green University and academic performance: An empirical study on UI Green Metric and World University Rankings, *Journal of Cleaner Production*, 291: 125289.
- CAI Y.X., OU S.J., CHEN H.H., CHIU C.C., 2019, Key strategies of sustainable and energy-saving development for green universities, IOP Conference Series: Earth and Environmental Science, 291(1): 012018.
- 4. CUARESMA J.C., 2019, How Green Can You Go? Initiatives of Dark Green Universities in the Philippines, Sustainability on University Campuses: Learning, Skills Building and Best Practices: 165-189.
- 5. GOMEZ C.P., YIN N.Y., 2019, Development of a progressive green university campus maturity assessment tool and framework for Malaysian universities, *MATEC Web of Conferences*, 266: 01018.
- KOSIŃSKI P., SKOTNICKA-SIEPSIAK A., 2022, Possibilities of Adapting the University Lecture Room to the Green University Standard in Terms of Thermal Comfort and Ventilation Accuracy, *Energies*, 15(10): 3735.
- KURBATOVA T., LYSENKO D., TRYPOLSKA G., PROKOPENKO O., JÄRVIS M., SKIBINA T., 2022, Solar energy for green university: estimation of economic, environmental and image benefits, *International Journal of Global Envi*ronmental Issues, 21(2-4): 198-216.
- 8. LEE J.C.K., POWER, C., 2021, Building a green and sustainable university: An international review, *Making the Sustainable University: Trials and Tribulations:* 269-286.
- LI X., NI G., DEWANCKER B., 2019, Improving the attractiveness and accessibility of campus green space for developing a sustainable university environment, Environmental Science and Pollution Research, 26: 33399-33415.
- LIMPHAIBOON C., SUPHACHAN S., RUTTANATHEERAWICHIEN K., 2022, Factors affecting the development to become a green university of Thai private universities, KKBS Journal of Business Administration and Accountancy: 6(1), 34-47
- 11. US Y., PIMONENKO T., LYULYOV O., CHEN Y., TAMBOVCEVA T., 2022, Promoting green brand of university in social media: Text mining and sentiment analysis, *Virtual Economics*, 5(1): 24-42.
- 12. YAOTENG Z., XIN, L., 2022, Research on green innovation countermeasures of supporting the circular economy to green finance under big data, *Journal of Enterprise Information Management*, 35(4/5): 1305-1322.
- 13. ZANELLATO G., TIRON-TUDOR A., 2021, Toward a Sustainable University: Babes-Bolyai University Goes Green, *Administrative Sciences*, 11(4): 133.
- ZHENG Y., LUO Y., 2020, Exploration on Construction of Green Campus in Chinese Colleges from the Perspective of Ecological Civilization, 2020 International Symposium on Advances in Informatics, Electronics and Education (ISAIEE): 142-147.