Higher Economic Education for Sustainable Development

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Abstract: Higher economic education focuses on teaching and promoting sustainability principles and practices in various fields including environmental ones. International practices in higher education for a sustainable development is considered and preliminary analysis of the factors influencing environmental sustainability in higher education institutions in Russia is provided, using the case of Ural State University of Economics. The paper highlights the importance of integrating sustainability into the curriculum, establishing institutional policies, monitoring progress, conducting research, adopting sustainable campus practices, engaging with communities, and involving students in sustainability initiatives. The paper also emphasizes the need for teachers to adopt active and interactive teaching methods and be well versed in competency-oriented education and interactive teaching methods. It is concluded that higher education institutions play a crucial role in advancing sustainability by equipping students with the knowledge, skills, and values needed for a sustainable and resilient future.

1 INTRODUCTION

In today's world, human capital plays a crucial role in economic growth, as it encompasses the knowledge and skills acquired through training and education, as well as the health of individuals. It determines productivity and technological progress (Owlcation.com, 2022).

The environment, on the other hand, is essential for sustaining human life, providing air, water, food, and energy. Human interaction with nature is an integral part of the planet's ecological system. Our actions have a direct impact on the environment through consumption and production activities. Therefore, as a collective, we have a responsibility to preserve biodiversity and maintain ecological balance. The well-being of humans is closely intertwined with the health of the environment. A significant percentage of global deaths can be attributed to avoidable environmental factors (WHO, 2007). To ensure a sustainable future for generations to come, it is essential to instill a sense of responsibility in every individual to preserve and limit pollution, as well as restore natural ecosystems (Raitskaya & Tikhonova, 2021).

The ongoing global transition to sustainable development requires radical transformations in all aspects of society, particularly education. Education for sustainable development (ESD) includes the environmental component, which is essential for achieving sustainable development (Ilyin, 2017). It should be integrated into all levels of education to foster a comprehensive understanding of the environment and sustainable practices across different fields (Alekseeva, 2022).

The objectives of ESD are to develop key competencies that contribute to a sustainable future. These include systems thinking, anticipatory skills, normative awareness, strategic planning, collaboration, critical thinking, self-awareness, and integrated problem-solving (Aleixo et al., 2018; Makarova, 2021). By promoting awareness and transforming thinking, ESD aims to create a mindset that supports sustainability in all areas of life.

This paper explores international practices in higher education for a sustainable environment and provides a preliminary analysis of the factors influencing environmental sustainability in higher education institutions in Russia, using the case of Ural State University of Economics.

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2 RESEARCH METHODS AND PRINCIPLES

The methodological framework is based on systematic approach, which includes general scientific methods such as description and interpretation, deduction, induction, generalization, comparative analysis, and formal logic. The research was Internet based, and utilized a literature review to investigate the issue of the higher education for sustainable environment in the international perspective. Thus, the problem has been looked upon from different perspectives: from more general (global) to country-specific (Russia) and, finally, to local (USUE as a regional university).

3 RESULTS AND DISCUSSION

The analysis of modern international and domestic literature allows to highlight the following key aspects of higher education for sustainable environment.

One of the most important aspects is curriculum development. Higher education institutions are encouraged to integrate sustainability into their curriculum across disciplines. This can include developing courses and programs
that emphasize sustainability principles, resource conservation, climate change mitigation and adaptation; renewable energy, waste management, and sustainable agriculture, among others.

Integrating sustainable development into higher education curricula across all disciplines is a multifaceted and collaborative process involving two related activities: the creation of new teaching materials that specifically address the issues and the incorporation of SD issues into the disciplines taught (Ursul & Ursul, 2015; Turbina et al., 2022). Some steps of the process are as follows:

- Assess and analyze current curricula: evaluate existing courses and identify opportunities for incorporating sustainability concepts. Look for courses where sustainability-related topics can be integrated or new courses that can be developed.
- Form interdisciplinary partnerships: engage faculty from various disciplines, such as sciences, humanities, social sciences, economics, and business, to collaborate on the development of sustainable curriculum. Encourage cross-departmental collaboration and invite guest speakers from relevant fields.
- Determine learning outcomes: identify the specific sustainability-related knowledge, skills, and attitudes you want students to gain. These outcomes should be discipline-specific and aligned with broader sustainability goals.
- Develop relevant courses: design new courses or modify the existing ones to include sustainability topics. Ensure that courses provide a comprehensive understanding of sustainability principles, including its environmental, social, and economic dimensions.
- Offer sustainability-focused concentrations, or minors: Create programs or concentrations that allow students to delve deeper into sustainability issues within their chosen disciplines. This can motivate students to explore sustainability-related topics beyond the mandatory curriculum.
- Foster experiential learning opportunities: Encourage internships, service-learning projects, field studies, or research opportunities that focus on sustainability. Provide students with hands-on experiences to apply their knowledge and skills in real-world sustainability challenges.
- Incorporate sustainability into assessment methods: Develop assessment strategies that evaluate students' understanding of sustainability concepts and their ability to apply them. This can include project-based assignments, case studies, group work, and presentations that emphasize sustainable solutions.
- Provide faculty development and resources: Offer training, workshops, and resources to faculty members to enhance their understanding of sustainability and help them integrate it into their teaching. Encourage networking and collaboration among faculty members to share best practices.

The authors have been working on improving the pedagogical qualifications of university teachers, including in the international aspect, for many years. Therefore, we believe it is important to delve deeper into this issue. The teacher should be the central figure in this process, as their professional competencies (methodological, pedagogical, psychological) and personal qualities are important factors in ensuring not only the implementation of these principles, but also the quality of educational services.

The monitoring of university teachers' activities has revealed a significant underestimation of the importance of methodological training in creating a sustainable development and mastering pedagogical technologies. Additionally, there is a low level of knowledge in student psychology among these teachers. It is common for the existing teaching staff at universities to lack specialized pedagogical and psychological training or to have received it a long time ago. Even young teachers, who are usually university graduates themselves, often do not possess a pedagogical education. Consequently, they encounter considerable challenges during their professional adaptation and tend to stick to the outdated model of simply transmitting knowledge, following the approach they were accustomed to as students. The latest generation of Federal State Educational Standards emphasises the involvement of practitioners in the educational process. However, these practitioners often lack the necessary pedagogical competencies.

Scientific and methodological approaches to developing professional pedagogical competence for university teaching staff without pedagogical background are extensively discussed in the domestic publications. However, the current realities of universities differ significantly from the ideal scenario described in the literature. While universities offer various forms and types of advanced training for teachers in their professional activities, the approach to improving teaching skills is often formal and focuses solely on pedagogical problems or the consideration of innovative educational technologies without addressing the question of how their use shapes learning outcomes. It is the responsibility of the teacher to provide students with knowledge, appropriate teaching methods, and the opportunity to improve their abilities for future use. Teachers must be able to develop competencies of the future, including the field of ensuring a sustainable development. To achieve the desired results, the guidelines for the national education system need to be modified, and teachers should widely exploit active and interactive teaching methods. These methods, such as workshops, situational analysis, business and role-playing games, brainstorming, and round table discussions, promote effective learning, shape behavioural patterns, provide high motivation, team spirit, freedom of speech, and stimulate interest in the profession. The role of the teacher changes significantly, as they act as organizers, facilitators, and generators of student initiative.

To succeed in this modern approach to teaching, educators must be well-versed in the following areas:

- Competency-oriented education, which emphasizes the ability to learn and apply knowledge in various problem-solving situations, rather than just accumulating knowledge.
- Interactive teaching methods that are used effectively to achieve desired learning outcomes, and encourage extensive interaction among students and between students and the teacher.
- The ability to work with students based on individualized curriculum.

The effectiveness of the system for improving teacher training can be evaluated by the positive development of teachers' professional competencies. It is therefore important to provide teachers with advanced training opportunities that focus on results, are highly effective, flexible, and responsive to the needs of education.

This system promotes an outcome-based approach to teacher training and utilizes a modular structure for university education courses. This approach allows teachers to consistently update their content, adapt to changes in research and pedagogical context, and implement innovative teaching and learning methods. The Teacher Training Program (TTP) consists of workshops designed to enhance the teaching skills of both novice and experienced educators. These workshops can cover various aspects such as teaching strategies, methods, and evaluation of teaching skills.

Furthermore, integrating sustainable development into the higher education curriculum is an ongoing and collaborative process. It requires constant adaptation and interdisciplinary interaction. Therefore, another crucial aspect of higher education for sustainable developments is incorporating sustainability into the university's institutional policies and strategic plans. This commitment to sustainable development is evident in the official strategy of USUE and the long-term development program, which include specific sections dedicated to promoting sustainable practices and implementing environmentally friendly operations on campus.

These operations should be monitored, assessed and reviewed on a regular basis in order to ensure the effectiveness of sustainability integration efforts. This can be done through collecting feedback from students, faculty, and other stakeholders to continuously improve and refine the curriculum.

Another aspect of higher education for sustainable development that is worth mentioning is research and innovation. Higher education institutions play a crucial role in conducting research and promoting

innovation in sustainable practices. This involves studying and developing new technologies, strategies, and policies that support sustainability and resilience.

Therefore, as part of the annual Eurasian Economic Youth Forum, USUE organizes the "Eurasia Green" international competition. This competition encourages students and young teachers to showcase their research projects related to sustainability issues. By engaging young individuals in specialized research activities, the staff members aim to foster for example environmental awareness and promote environmentally-friendly behaviors. Ultimately, this contributes to the creation of a sustainable development.

Universities and colleges are encouraged to lead by example by adopting sustainable practices on their campuses. This includes implementing energy-efficient measures, promoting recycling and waste reduction, utilizing renewable energy sources, and incorporating sustainable design principles in campus infrastructure.

There are several ways that universities and colleges can adopt sustainable practices on their campuses. Here are some examples:

- Using renewable energy sources: installing solar panels or wind turbines on campus can help generate clean and renewable energy, reducing dependence on fossil fuels.
- Enforcing energy conservation measures: implementing energy-efficient technologies and establishing energy-saving practices can significantly reduce energy consumption. This may include using energy-efficient lighting, setting up smart grids, or employing occupancy sensors to control heating, ventilation, and air conditioning (HVAC) systems.

At USUE, implementing energy-saving technologies and conserving energy resources may result in a significant reduction in operating costs, specifically by up to 32%.

The last but not the least aspect of higher education for sustainable development is community engagement. USUE collaborates with local communities to address environmental challenges and promote sustainable development. This can involve outreach programs, community-based research projects, and partnerships with local organizations and businesses to implement sustainable solutions. Some of the examples of this collaboration are.

- Engaging students in community-based learning: the University incorporates community-based learning into the curriculum, allowing students to work on real-world environmental issues in collaboration with local communities. USUE students conduct research projects in partnership with local organizations in the field of biotechnologies to assess quality of the food and develop sustainable farming and manufacturing practices.
- Providing expertise and resources: higher education institutions can offer their expertise and resources to address environmental challenges in the community. This could involve providing technical assistance, conducting environmental impact assessments, or offering training programs on sustainable practices. USUE Institute of Additional Professional Training offers short courses to local municipalities on project management with the emphasis on energy-efficient infrastructure projects.
- Hosting community events and workshops: within the framework of the annual Eurasian Economic Youth Forum USUE hosts workshops to raise awareness about environmental challenges and runs a special competition where experts, community members, and students share knowledge and ideas and discuss burning issues for sustainable environment.
- Promoting interdisciplinary research and collaboration: The University aims to foster interdisciplinary research and collaboration to address complex environmental challenges. This is done by creating a research team focused on sustainable urban development that brings together experts from urban planning, ecology, and social sciences.

Close interaction with regional and city authorities and businesses to create joint programs aimed at sustainable development in the environmental, economic and social spheres promotes lifelong education and technology transfer, benefiting not only students, but also local authorities and regional businesses (Zinevich & Melyokhina, 2023). USUE's cooperation with regional authorities, government agencies, and the involvement of students in the implementation of real university projects makes a significant contribution to innovation development of the region. Overall, the collaboration between higher education institutions and local communities is essential for addressing environmental challenges and promoting sustainable

development. By combining academic knowledge, community perspectives, and practical resources, these collaborations can lead to impactful and long-lasting solutions.

4 CONCLUSIONS

Overall, higher education for sustainable development aims to equip students with the knowledge, skills, and values needed to create a more sustainable and resilient future. By integrating sustainability principles into the curriculum, conducting research and innovation, practicing sustainability on campus, engaging with communities, and involving students in sustainability initiatives, higher education institutions can play a vital role in advancing sustainability.

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