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ANNA PAVLIUK
Kyiv College of Applied Sciences, Ukraine

THE RELEVANCE OF TEACHING THE FUNDAMENTALS OF SUSTAINABLE DEVELOPMENT, ECOLOGY AND RESOURCE CONSERVATION TO UNDERGRADUATE STUDENTS IN LIGHT INDUSTRY SPECIALTIES

Purpose: *Analyze the necessity of integrating sustainable development, ecology, and resource conservation into the educational process of undergraduate students in light industry specialties.*

Keywords: *sustainable development, ecology, resource conservation, light industry, education, undergraduate studies.*

Objectives. In the context of Ukraine's integration into the global economic space and the alignment of its educational standards with European frameworks, there is a growing need to shape students' environmental awareness and professional responsibility. Teaching the fundamentals of sustainable development, ecology, and resource conservation at the undergraduate level enables future professionals in light industry to acquire not only theoretical knowledge but also practical skills in implementing environmentally oriented technologies.

Methodology. To accomplish the task, an analysis of information sources on a specific topic, analytical and comparative methods were used.

Research results. The UN 2030 Agenda for Sustainable Development (2015) set out 17 Sustainable Development Goals, including critical environmental priorities: responsible consumption and production, climate action, and ecosystem preservation. For light industry, these goals translate into the necessity of adopting eco-friendly materials, reducing energy and water consumption, and minimizing waste. A new stage is the implementation of the principles of the circular economy [2], which involves the reuse of materials and closed production cycles.

Ukraine has adopted its Sustainable Development Strategy until 2030, which emphasizes industrial ecologization and modernization of higher education. This creates strong preconditions for integrating sustainability principles into the preparation of future light industry specialists.

The environmental challenges of the light industry sector include: excessive consumption of water resources (up to 2,700 liters per cotton T-shirt) [1]; the use of synthetic fibers, which are a source of microplastics in the world's oceans [3]; and an insufficient waste disposal system [4].

In Ukraine, these problems are exacerbated by insufficient recycling systems, the prevalence of cheap synthetic imports, and limited adoption of "green" technologies in domestic production [5].

These challenges require changes in the training system: students must not only have professional knowledge of production technology, but also be able to assess the environmental footprint of products and offer innovative solutions.

Higher education plays a central role in shaping a new production culture based on ecological responsibility. Integrating sustainability-oriented courses into curricula contributes to: building ecological competence; developing critical thinking for environmental risk assessment; acquiring practical tools of eco-management; preparing students for the implementation of circular economy principles in industry. Thus, education should move beyond theoretical knowledge, incorporating case studies, practical training in enterprises, and student involvement in applied research.

Modern curricula should encompass the study of advanced resource-saving practices:

1. Use of organic and recycled materials (reprocessed textiles, bio-based fabrics).
2. Adoption of energy-efficient technologies (laser cutting, 3D printing of clothing).
3. Eco-friendly dyeing methods (natural dyes, waterless dyeing technologies).
4. Circular production systems (Circular Fashion).

To prepare students for contemporary industry challenges, higher education institutions should:

1. Include specialized courses such as «Ecology in Light Industry», «Sustainable Development and Design», «Resource-Saving Technologies in Production».
2. Apply an interdisciplinary approach that combines technical knowledge with ecology and management.
3. Introduce project-based learning, where students design their own sustainable solutions for industrial practice.

A number of strategies for greening higher education have been developed around the world. In particular, the European Green Deal orients universities towards integrating sustainable development disciplines [2].

Accordingly, London College of Fashion (UK) has introduced a mandatory course Sustainable Fashion and Textiles, which studies environmental innovations in design, and Parsons School of Design (USA) integrates sustainability into all design programs through modules on materials science, management and ecology. The University of Borås (Sweden) offers a master's program "Textile Management - Sustainable Fashion", which prepares students for work in the field of "green" fashion.

It is worth noting that the Kyiv National University of Technologies and Design (KNUTD) offers courses on "Ecology in Light Industry" and "Sustainable Development in Design" [4].

Thus, proposals have been identified for the modernization of educational programs in Ukraine, taking into account modern environmental approaches:

1.Inclusion of mandatory courses: "Ecology in light industry", "Circular economy", "Resource-saving technologies in textile production".

2.Interdisciplinarity: integration of environmental modules into disciplines of materials science, design, management.

3.Project-oriented learning: creation of student startups in the field of "green fashion".

4.Partnership with business: internships for students at enterprises implementing "green" technologies.

5.International cooperation: participation of Ukrainian students in European programs (Erasmus+, Horizon Europe).

Integrating these technologies into the learning process equips students with innovative competencies aligned with the demands of today's labor market.

In the context of growing global environmental challenges and the transformation of global production processes, it is important to develop competencies in future specialists aimed at the rational use of resources, minimizing negative impact on the environment, and implementing the principles of a circular economy.

Conclusion. Integrating the basics of sustainable development, ecology, and resource conservation into undergraduate curricula for light industry majors is a relevant and necessary condition for training competitive specialists. Such knowledge will contribute to the development of students' environmental awareness, the formation of a responsible attitude towards the use of resources, and the creation of industries focused on the principles of a "green" economy.

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