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Mentorship model for the development of environmental culture in future fashion designers

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Abstract. *Current trends in globalized societal development determine the need for integrating the environmental component into the system of professional training for specialists in the fashion industry, which belongs to the environmentally sensitive sectors of the economy. The formation of environmental culture among future fashion designers is a key factor in ensuring their ability to implement the principles of sustainable design and environmentally responsible production. Mentorship is considered an effective pedagogical technology that combines the individualization of the educational process with the development of professionally significant values and environmental awareness.* ***The purpose*** *of the study is to scientifically substantiate and experimentally verify the effectiveness of a pedagogical mentorship model aimed at developing the environmental culture of future fashion designers during their professional training.* ***Methods.*** *The methodological basis of the study combines competence-based, activity-based, and structural-functional approaches. Methods of analysis, synthesis, and generalization of scientific sources were applied; pedagogical modeling was used*

to design the mentorship model; questionnaires, expert evaluations, and a pedagogical experiment were employed to assess the effectiveness of the implemented pedagogical solutions. ***Results.*** *The developed mentorship model includes motivational value, cognitive, and operational-activity components integrated into a single pedagogical system. A methodological toolkit for mentorship interaction was proposed, which provides for the implementation of environmental design, the use of environmentally friendly materials, the organization of creative workshops, and case methods aimed at solving environmental problems in design.* ***Conclusions.*** *The integration of mentorship into the educational process of fashion designer training ensures the formation of a holistic environmental culture, the development of professional environmental competence, and the establishment of stable value orientations necessary for implementing the concept of sustainable development in the fashion industry. Further research should focus on adapting the model to various levels of vocational education and international educational standards.*

Keywords: *mentorship, professional training, environmental culture, sustainable design, environmental design, competence-based approach.*

Модель наставництва для розвитку екологічної культури серед майбутніх модельєрів

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Анотація. *Актуальні тенденції глобалізованого суспільного розвитку зумовлюють необхідність інтеграції екологічної складової в систему професійної підготовки фахівців індустрії моди, яка належить до екологічно*

чутливих секторів економіки. Формування екологічної культури майбутніх модельєрів постає як ключовий чинник забезпечення їхньої здатності впроваджувати принципи сталого дизайну та екологічно відповідального виробництва. Наставництво розглядається як ефективна педагогічна технологія, що поєднує індивідуалізацію освітнього процесу з формуванням професійно значущих цінностей та екологічної свідомості. ***Метою*** *дослідження є наукове обґрунтування та експериментальна перевірка ефективності педагогічної моделі наставництва, спрямованої на розвиток екологічної культури майбутніх модельєрів у процесі їхньої професійної підготовки.* ***Методи.*** *Методологічну основу дослідження становить поєднання компетентнісного, діяльнісного та структурно-функціонального підходів. Використано аналіз, синтез та узагальнення наукових джерел; педагогічне моделювання для конструювання моделі наставництва; методи анкетування, експертного оцінювання та педагогічного експерименту для визначення ефективності впроваджених педагогічних рішень.* ***Результати.*** *Розроблена модель наставництва включає мотиваційно-ціннісний, когнітивний та операційно-діяльнісний компоненти, інтегровані в єдину педагогічну систему. Запропоновано методичний інструментарій наставницької взаємодії, що передбачає впровадження екологічного проєктування, застосування екологічно безпечних матеріалів, організацію творчих майстер-класів та кейс-методів, спрямованих на вирішення екологічних проблем у дизайні.* ***Висновки.*** *Інтеграція наставництва в освітній процес підготовки модельєрів забезпечує формування цілісної екологічної культури, розвиток професійної екологічної компетентності та стійких ціннісних орієнтацій, необхідних для реалізації концепції сталого розвитку в індустрії моди. Подальші дослідження доцільно спрямувати на адаптацію моделі до різних рівнів професійної освіти та міжнародних освітніх стандартів.*

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Ключові слова: *наставництво, професійна підготовка, екологічна культура, сталий дизайн, екологічне проєктування, компетентнісний підхід.*

Problem statement. The fashion industry is one of the most resource-intensive and environmentally sensitive sectors of the economy, which necessitates the formation of a high level of environmental culture and a responsible attitude to the use of natural resources among future specialists. Despite the growing attention to sustainable development and environmentally friendly practices in vocational education, there is insufficient systematic training of fashion designers to implement the principles of sustainable design. Traditional forms of training are mainly focused on the technical and aesthetic aspects of professional activity, while the integration of environmental values and practices into the educational process remains incomplete.

Of particular relevance is the use of pedagogical technologies that can not only transfer knowledge, but also form value orientations, motivation and competencies necessary for the sustainable development of the fashion industry. One such technology is mentoring, which involves direct interaction between an experienced specialist and a future designer, contributing to the development of environmental awareness and professional competence through practical activities, reflection, and value education.

Therefore, there is a scientific and pedagogical need to develop and test mentoring models focused on forming an ecological culture of future fashion designers, which will increase the effectiveness of professional training and integrate the principles of sustainable development into design practice.

Analysis of recent research and publications. The formation of an ecological culture among future teachers and designers is a relevant direction of modern educational science. The structure and model of the development of the ecological culture of future teachers of technology are considered in detail by

D. Kuzmych [1], emphasizing the importance of a systematic approach to the education of ecological awareness. The problems of ecological education of youth in the process of implementing design projects based on literary and musical folklore are analyzed in the study of S. P. Mykhyda et al. [2], who highlight the integration of cultural and ecological aspects into professional training. A component-structural analysis of the ecological culture of future teachers of labor training and technology is presented in the work of L. O. Chystiakova [3], which substantiates the key components of the development of ecological competence. B. Burkut [4] emphasizes the formation of the ecological consciousness of student youth, noting that purposeful education is a means of effective ecological education. Models of environmental culture formation in foreign countries, in particular the USA, are studied by Ya. Boyko [5] compares them with domestic approaches and emphasizes the importance of mentoring in the formation of environmental competence. The problems of transforming the training of clothing design specialists in the context of modern concepts of environmental friendliness are highlighted by I. Soloviy & Z. Tkanko [6], emphasizing the need to integrate sustainable practices into the educational process. The experience of implementing eco-sustainable practices in the field of mens fashion is presented in the study of V.Hurdina, T. Yermakova, & M. Tokar [7], who emphasize the practical value of an ecological approach in designing a product. The issues of development of domestic design education and prospects for its improvement are highlighted by A. Dyachenko [8], emphasizing the need to adapt methodological approaches to ecological and mentoring models. The formation of an ecological culture of specialists in the design of clothing collections according to the concept of «Zero Waste» is analyzed by O. Yezhova, K. Pashkevych, & A. Pikhur [9], highlighting the importance of mentoring and practical cases in the educational process. The practice of implementing an eco-direction at the Kharkiv School of Fashion Design is considered by A. Hakhova & I. Ieremenko [10], which demonstrates successful approaches to integrating

ecological principles into the professional training of future fashion designers. Thus, the analysis of modern research indicates that the development of an ecological culture among future fashion designers is possible through a combination of mentoring, practical projects and the integration of ecological concepts into the educational process, which contributes to the formation of professional competence and environmental awareness.

Identification of previously unresolved parts of the overall problem. Despite the growing attention to sustainable development and environmental education in the professional training of fashion designers, several essential aspects remain insufficiently researched. There is a shortage of systemic mentoring models focused on the development of environmental culture, which combine motivational value, cognitive and practical-operational components into a single pedagogical system.

Methodological approaches to the integration of environmental principles into the educational process are mostly fragmentary and do not take into account the individual needs of students, the peculiarities of their professional development and the ability to critically reflect on environmental problems in the fashion industry.

There is a limited number of empirical studies assessing the effectiveness of mentoring as a mechanism for forming an environmental culture of future fashion designers, particularly in the context of practical projects, case studies, and creative master classes.

Thus, the insufficient scientific and methodological development of mentoring models in combination with the environmental component creates a scientific and pedagogical gap, the filling of which can ensure an increase in the effectiveness of professional training of fashion designers and the formation of their competencies necessary for the sustainable development of the fashion industry. The proposed study aims to contribute to resolving these unresolved issues by developing

and testing a holistic mentoring model focused on the development of the environmental culture of future designers.

Formulation of the article's goals (task setting). The article aims to scientifically substantiate and test a mentoring model aimed at the development of the environmental culture of future fashion designers during their professional training. Achieving this goal involves solving the following tasks:

1. To analyze modern scientific approaches to the formation of environmental culture in professional education and to determine the features of the integration of environmental principles into the training of future designers.

2. To develop and describe a pedagogical model of mentoring that combines motivational value, cognitive and operational-activity components for the formation of an ecological culture of future fashion designers.

3. To experimentally verify the effectiveness of the proposed mentoring model and develop methodological recommendations for its implementation in the system of professional training of designers.

The implementation of these tasks emphasizes the relevance of the research, ensuring the scientific novelty and practical significance of the results, and determines the context for further scientific developments in the field of fashion pedagogy and sustainable design.

Research results. The modern fashion industry is in a state of rapid change under the influence of globalization processes and the growing public demand for environmental responsibility. Since the textile and fashion industries belong to sectors with a high environmental load, the integration of environmental principles into the training of specialists becomes highly relevant. The formation of an environmental culture among future fashion designers is not only an educational but also a social need that determines the ability of professionals to implement sustainable design and environmentally responsible production.

Mentoring is a key pedagogical tool that allows combining the individualization of learning with the development of professionally significant values, including environmental awareness. The effectiveness of mentoring is based on an integrated approach to the development of motivational-value, cognitive, operational-activity and reflective-analytical components in the professional training of students.

Modern scientific research emphasizes the key role of forming an ecological culture in the professional education of future designers to ensure the sustainable development of the fashion industry. In particular, M. Murzyn-Kupisz & D. Hołuj emphasize that the educational process in the field of fashion design should not only raise students awareness of environmental challenges, but also form practical skills for implementing the principles of sustainable design in professional activities [11]. It includes the integration of interdisciplinary approaches and the development of curricula that stimulate ecological thinking and responsibility in the process of creating fashion products. J. Kim & J. Lee offer a specific model of an educational program for the development of ecological competence of future designers [12, p. 162-168]. They emphasize the use of environmentally friendly materials, production methods and design stages that contribute to a conscious approach to making environmentally responsible decisions. The authors prove that the systematic implementation of such methods in the educational process allows the formation of holistic environmental competence, which includes knowledge, practical skills and value orientations of students.

O. Sorochynska & V. Tanska emphasizes the importance of the role of higher education institutions in the formation of environmental awareness of applicants [13, p. 233-235]. The authors note that the integration of environmental principles into the educational process, the organization of practical master classes and projects with an environmental focus, contribute to the formation of sustainable environmental values and readiness to apply knowledge in practice among students.

Thus, the formation of an environmental culture in vocational education becomes a necessary condition for the training of designers who can implement the concepts of sustainable development in their activities.

The integration of environmental principles into the curricula of designers is carried out through the inclusion of specialized disciplines, project tasks and practical cases that allow students to familiarize themselves with modern technologies of environmentally friendly production and materials. Scientific sources indicate that the historical and modern context of the development of the design process shows the need for a systematic approach to training specialists, where the environmental component is integrated into all stages of the educational process.

An essential tool for the formation of an ecological culture is mentoring, which ensures the individualization of the educational process and contributes to the development of professionally significant values and environmental awareness. The mentor not only transfers knowledge, but also forms in the student the ability to critically evaluate the environmental aspects of production and design, which is essential for the training of a competent specialist in the field of fashion.

The use of innovative pedagogical technologies, such as project methods, case methods, and creative master classes, creates conditions for active practical assimilation of environmental knowledge. It contributes to the development of critical thinking and the formation of a responsible attitude to the choice of materials, production technologies and design solutions that meet the principles of sustainable development.

The formation of an ecological culture in design students requires a holistic approach that combines motivational and value, cognitive and operational and activity components. The motivational and value component is aimed at developing in students an awareness of the importance of environmental responsibility and the formation of stable value orientations regarding sustainable development in the

fashion industry. The cognitive component ensures the acquisition of knowledge about environmental principles, materials and technologies, and also introduces sustainable design methods. The operational and activity component is focused on the practical application of knowledge and skills in creative projects, master classes and solving real environmental problems in the field of fashion.

The pedagogical model of mentoring is built on the principle of integrating these components into a single system of mentor-student interaction. The mentor acts as a guide in the process of mastering environmental competencies, provides individual recommendations, organizes practical tasks and stimulates reflection on the decisions made. This approach not only ensures deep assimilation of theoretical material, but also forms in students the ability to critically evaluate their activities in the context of environmental efficiency and sustainable development [12, p. 155-160].

Integration of components into the pedagogical model allows for the comprehensive development of students ecological culture through a combination of knowledge, values, and practical skills, which is implemented through mentoring interaction.

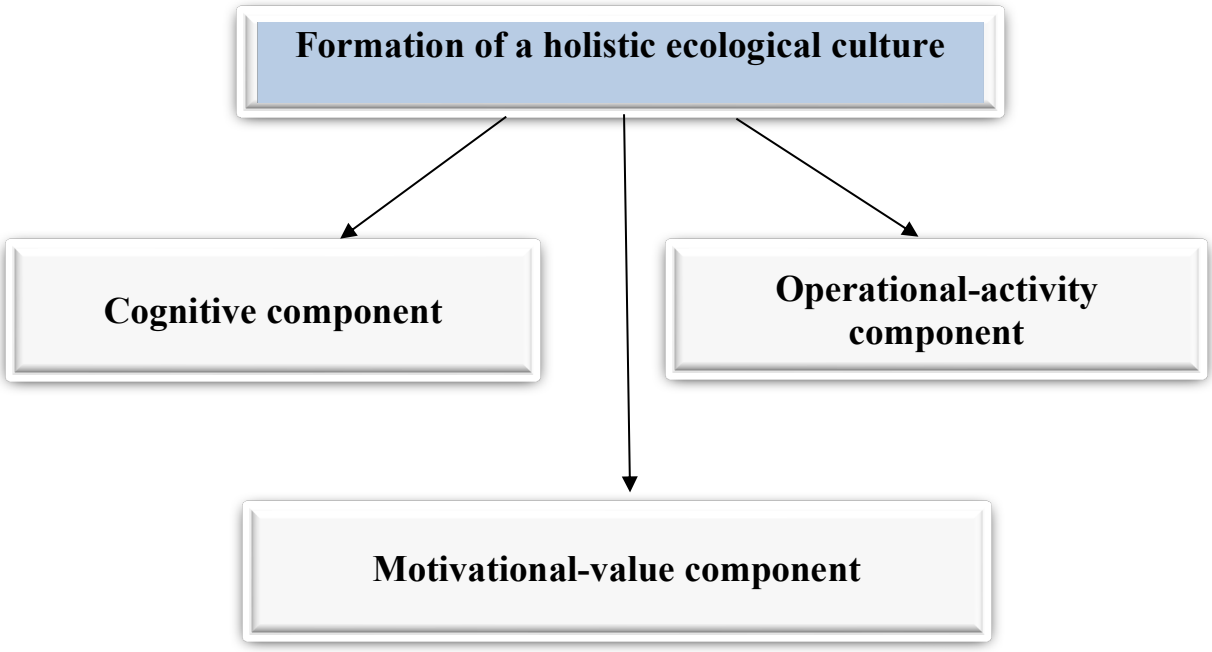
Integration of motivational-value, cognitive, and operational-activity components into the pedagogical model of mentoring ensures the systematic development of the ecological culture of future fashion designers. The mentor is a key element of this system, coordinating the process of knowledge assimilation, formation of values, and practical application of ecological principles. Such interaction allows students not only to master theoretical material, but also to learn to make environmentally responsible decisions in their own creative activities and project work.

Fig. 1 shows the structure of the pedagogical model of mentoring, which integrates motivational-value, cognitive, and operational-activity components. The motivational-value component is aimed at forming value orientations in students,

raising awareness of the importance of environmental responsibility, and developing internal motivation to implement the principles of sustainable design. The cognitive component provides systematic acquisition of knowledge about environmentally friendly materials, production technologies and principles of sustainable development, which is the basis for critical analysis of environmental problems and making informed decisions in design activities. The operational-activity component is implemented through practical tasks, creative projects, master classes and case methods, which allow students to apply knowledge in practice and develop professional skills in environmentally responsible design.

Figure 1

Pedagogical model of mentoring for the formation of an ecological culture of future fashion designers



Source: authors development

The mentor acts as the central link of the model, coordinating the interaction of all components, supporting students in the learning process and stimulating reflection. Thanks to such integration, a holistic ecological culture, professional ecological competence and stable value orientations of future fashion designers are

formed, which ensures the effective implementation of the principles of sustainable design in their professional activities.

These processes of forming ecological competence are closely related to the development of the designers professional competence, which includes the unity of theoretical and practical readiness to perform professional tasks. Professional readiness is formed based on knowledge, skills and abilities, as well as the patterns of development and formation of the specialists personality. For a future graphic designer, professional skills and abilities are key, based on both theoretical knowledge and practical actions through which the content of professional competence is implemented. Such actions involve the development of analytical, predictive and reflective abilities, as well as communicative and creative personal qualities necessary for effective and environmentally responsible professional activity [14, p. 191].

For the effective implementation of the pedagogical model of mentoring, it is necessary to clearly define methods that ensure the integration of all components, each of which requires the use of specific pedagogical techniques and forms of organizing educational activities that contribute to the development of knowledge, skills, abilities and value orientations of students. Table 2 presents the key methods for implementing the three main components of the model: motivational and value, cognitive and operational-activity, with the integration of reflection. Such a structure allows you to combine theoretical knowledge acquisition with practical activities and the development of critical thinking and self-reflection in students.

Table 2

Methods for implementing the components of the pedagogical model of mentoring for the formation of an ecological culture of future fashion designers

Model component	Main implementation methods	Expected results
Motivational and value	Discussions and debates on environmental problems of the	Formation of the perceived value of sustainable development; development

	fashion industry, role-playing games, and seminars on ethical aspects of sustainable design	of internal motivation for environmentally responsible activities
Cognitive	Lectures and seminars on ecological materials and technologies; analysis of sustainable design cases; interactive training modules	Acquisition of theoretical knowledge about environmentally safe materials, principles of sustainable design and modern technologies; development of critical thinking
Operational and activity (with integration of reflection)	Practical tasks, project activities, and master classes on ecological design	Development of professional skills; ability to apply ecological principles in practical activities; formation of competence in sustainable design; development of self-reflection and integration of knowledge and skills

Source: created by the author based on [15, p. 2]

The data in Table 2 demonstrate that each component of the model is implemented through specific pedagogical methods that ensure the harmonious interaction of students knowledge, values, and practical skills. The integration of reflection into the operational-activity component allows students to evaluate their activities, analyze project results, and form a holistic ecological culture. The use of such a system of methods contributes to the formation of professional competence of future fashion designers and the effective implementation of the principles of sustainable design in their practical activities.

The development of a pedagogical model of mentoring requires its experimental verification to assess the effectiveness of its implementation in the system of professional training of future fashion designers. Experimental work involves the organization of control and experimental groups of students, where the proposed mentoring model is implemented in the experimental group, and traditional teaching methods are used in the control group.

The effectiveness of the model can be assessed according to several criteria: the level of formation of ecological culture, professional competence, and practical skills of sustainable design, as well as the level of development of value orientations

and reflective abilities of students. For such an assessment, various data collection methods can be used, including questionnaires, testing, observation of students practical activities, analysis of project results and portfolios.

Based on the results of the experimental verification, a methodological package of recommendations is formed for the implementation of the mentoring model in the system of designer training. These recommendations include a description of the implementation sequence of the model components, a list of effective pedagogical methods, tools for assessing student progress, and ways to integrate the model into the academic disciplines of the professional cycle.

The implementation of such methodological recommendations allows for the systematic development of the environmental culture of future fashion designers, to increase the effectiveness of professional training, and to promote the formation of sustainable value orientations necessary for the practical application of the principles of sustainable design in professional activities [15, p. 2-3].

In addition, the results of the experimental verification indicate the importance of the mentors role as a coordinator of the educational process and a consultant who guides students to the conscious application of environmental principles in practical activities. The emphasis on the integration of motivational-value, cognitive and operational-activity components allows not only to form professional knowledge and skills, but also to stimulate the development of independence, critical thinking and creative abilities of future fashion designers [16, p. 208-209]. This approach ensures the comprehensive formation of an ecological culture, which becomes an integral part of the professional identity of students and contributes to their readiness for the responsible and sustainable practical application of design solutions in their future careers.

Conclusions. The conducted study confirmed the effectiveness of the pedagogical model of mentoring for the formation of an ecological culture and professional competence of future fashion designers. It was found that the

integration of motivational-value, cognitive and operational-activity components into the educational process contributes to the development of conscious value orientations, systematic assimilation of knowledge about sustainable design and the acquisition of practical skills in the application of environmental principles in professional activities.

Experimental verification of the model showed that student projects, practical tasks, and mentoring consultations effectively stimulate the development of professional environmental competence and critical thinking, as well as form the ability to self-reflect and analyze ones activities.

As a result of the study, it was confirmed that the tasks set - determining the features of the integration of environmental principles into the training of designers, developing a pedagogical model of mentoring and testing its effectiveness - were completed. At the same time, there is a need for further study of the long-term impact of mentoring on the professional practice of graduates and adaptation of the model to various specializations in the field of design.

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