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**EDUCATIONAL STRATEGIES FOR TRAINING  
SOCIOCULTURAL VALUES IN ENGINEERING STUDENTS**

**Specialty 533.01 University Pedagogy**

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## CONCEPT REPRESENTATIONS OF RESEARCH

**The actuality of the topic and the importance of the problem addressed.** In contemporary society, a period when information technologies are widely used, one of the strategic directions, which requires a formative approach, refers to the development of socio-cultural values in young people. The challenges of digitalization of the educational system emphasize the need for investment in the preservation of cultural and spiritual heritage, a special place being given to the promotion of socio-cultural values, as a fundamental landmark in the evolution of human personality. Based on these beliefs, the topicality of the theme of our investigative approach is also highlighted by the practical and scientific interest in the rehabilitation/building of socio-cultural values.

Today, the axiomatic fact that higher education institutions train not only competent specialists, but, first of all, develop personalities deeply anchored in the system of general human values, can no longer be doubted. The diversity of higher education programs within universities, the organization of learning for the purpose of developing transversal, general and professional competencies, the set of knowledge assimilated from information, theories and practices in a sphere of activity, are conditions that stimulate initial training in a certain field. Contemporary society needs autonomous, initiative-oriented individuals who can cope with changes and adapt to social life, the current challenges of the time, capitalizing on their human qualities, which would allow them to increase their success and competitiveness in socio-community relations. Therefore, the basic mission of technical university education also includes capitalizing on the process of training future specialists, competitive on a national and international level, who will be able to satisfy the needs and social interests as a whole, to contribute to increasing the values of society, but also of personal ones. Promoting innovative educational strategies in the process of university training is the optimal condition for the harmonious development of the student's personality, endowed with creative potential, capable of establishing harmonious relationships in the academic, professional, and social environment.

In our research, we aimed to highlight effective educational teaching-learning-evaluation strategies within the disciplines of *Computer-Aided Design*, *Computer Graphics Programming*, *Design History*, *Textiles in Interior Design*, *Contemporary Design*, *Theory and Concept*, intended to form in engineering students, as a priority, sociocultural values with an impact on ensuring professional integrity and ethical responsibility. At the same time, we intended to create a common space for action reflection, with the aim of contributing to the achievement of viable links between education actors, as well as new possibilities for professional collaboration in order to enhance the sociocultural values of innovative cooperation and cognitive flexibility, reflective tolerance, progressive self-development and cultural attitude.

### **Description of the situation in the field of research and identification of research problems**

The topicality and importance of the research topic is also argued by the Strategic Objectives mentioned in the Development Strategy "Education 2030", approved by Government Decision no. 114 of March 7, 2023. Among the problems stated in this document are also listed "insufficient valorization of skills for the 21st century", the lack of "recognized and assumed long-term values". And one of the objectives proposed in this Strategy and in the Education Development Implementation Program is "Raising the level of culture and personal development". In this context, the education system has the task of ensuring training based on national values, traditions and cultural diversity, as well as personal development and active citizenship" [90].

According to OECD studies, quality education depends on the integration of values in achieving the strategic objectives of one's own training and sustainable development, and values are

defined as "defining principles with an impact on decisions made based on judgments", supported by attitudes that guide activity [20]. The basic function of values consists of "the pedagogical (social and psychological) validation of any education/training activity, necessary in the perspective of permanent education and self-education, lifelong learning/self-learning" [20]. Higher education institutions contribute essentially to the training of future specialists. Universities can ensure, directly or indirectly, the progress of society. Among the functions of higher education is the transmission of cultural values and science, the development of creative personalities, the formation of national consciousness and identity, the development of national culture and the promotion of intercultural dialogue [89].

The finding that, in a society in full swing, there is a need to build the process of forming sociocultural values in students becomes imperative. Placing emphasis on self-education, self-development, reflection, active involvement and other forms of education through personal effort has developed a new vision of educational reality, considerably influencing the graduate's profile. The review of teaching technologies and educational strategies for student training creates contexts for the representation and functioning of the mechanisms of integration into a society based on democratic values and a competitive economy. The conclusion we adhere to concerns the efficiency of applying educational strategies focused on student activity, on developing tasks with social impact, emphasizing the formation of sociocultural values for sustainable education, contributing valuably to the formation of competitive personalities in the university environment.

The problem of identifying, examining and capitalizing on educational strategies of the educational process in initial vocational training, for the formation of sociocultural values is very important in scientific research. This prerogative becomes mandatory in the formation of personality in university education in the Republic of Moldova, which is evolving along the path of integrating education into the European educational system. Operating within the framework of research with several concepts and theories regarding educational strategies, sociocultural values, we find that the given subjects have been tangentially approached in a conjugated manner, within theoretical and specialized studies, without identifying a multidisciplinary study that would encompass multiple aspects highlighted by us. Thus, the classical concept of value remains as an epistemological pillar in the works of the great philosophers Aristotle [5], Plato [64], I. Kant [32], J.W. Goethe [32], as well as in contemporary authors T. Vianu [75], C. Noica [54], M. Heidegger [41], C. Radu [66].

The issue of values in education has become a research topic for several authors, among whom we will mention works signed by T. Callo [12;13], V.Gh. Cojocaru [16], O. Dandara [28], V. Guțu [34-37], V. Pâslaru [58], V. Goraș-Postică [33], M. Hadîrcă [38;39], V. Andrițchi [2], L. Cuznețov [27], D. Patrașcu [59], A. Paniș [55] I. Cerghit [14], E. Țarnă [73], D. Antoci [3], M. Dohotaru [29] etc. The integration of the value thesaurus is also studied by researchers such as J. Piaget [63], P. Bourdieu [78], Ș. Buzărnescu [10], P. Iluț [42-45], and some aspects of moral education, relevant to our research, we identify in the works signed by L. Kohlberg [82], J. Piaget [63], C. Enăchescu [30]. The theoretical approaches to professional training in university education, through which we built the theoretical and practical framework of the given investigation, we selected from A. Neculau [53], D. Potolea [65], M. Jigău [46], Z. Bogathy [7], T. Callo [12;13], V. Cojocaru [17], O. Dandara [28]. The problem of forming the axiological referential is found in the works of the authors S. Chelcea [15], P. Iluț [42-45], C. Cucos [23-26], S. Cristea [20], L. Bețivu [6], M. Călin [11], B. Voicu [77], L. Cuznețov [27], E. Țarnă [73], D. Antoci [4], I. Gîncu [31] and others.

We conclude that, at the current stage of the research, directly or tangentially, some aspects have been found in publications on various related fields of our research. To date, however,

there is no comprehensive study that would reflect the educational strategies used in university education regarding the integration of sociocultural values, which justifies our intention to examine this topic within the scientific approach. The valuable contributions of the cited authors and their functionality in the educational environment analyzed by us reveal the following **contradictions**:

- the insufficiency of a cultural referential framework regarding the development of the methodology of organization and value orientation in teaching the content of education for the emerging (sustainable) development;
- the reduced functionality of specific educational strategies for the development of the student's sociocultural values and the building of relationships between participants in the educational act, centered on respect, honesty, innovative cooperation, cognitive flexibility, proactive cultural attitude, etc.

**The research problem** results from the listed contradictions and certain inconsistencies found at the methodological level regarding the application of strategies for the development of sociocultural values in students, generating theoretical-methodological concerns, in order to answer the question: What are the theoretical benchmarks of educational strategies and how can they be capitalized in the process of forming sociocultural values in students of engineering study programs?

**Research purpose:** Determining the theoretical benchmarks of educational strategies regarding the development of sociocultural values, developing and validating the Pedagogical Model for the formation of sociocultural values in students of engineering study programs.

In order to achieve the **proposed goal**, the following **objectives** were established:

- study of theoretical approaches to sociocultural values by elucidating the concepts of value, heritage, culture, organizational culture;
- conceptualization of the role of sociocultural values as an essential factor in the professional development of competitive personalities, within sustainable education;
- development of the Pedagogical Model for the formation of sociocultural values of students of engineering study programs;
- capitalization of the results of the application of the Pedagogical Model for the formation of sociocultural values of students of engineering study programs;
- development of general conclusions and methodological recommendations regarding the application of educational strategies for the formation of sociocultural values of students of engineering study programs.

**Research hypothesis:** the formation of sociocultural values in students, through educational strategies, will be possible if:

- the theoretical benchmarks and scientific guidelines of the strategies for the formation of sociocultural values in students by teachers in university education will be established;
- the conceptual and methodological framework for the formation of sociocultural values in students and the experimental validation of the Pedagogical Model for the formation of sociocultural values in students of engineering study programs will be established, which will contribute to the personal development and social integration of students, future engineers.

The development of sociocultural values in subjects in university education of engineering study programs aims not only to train the student as a specialist in a field that acts guided by narrow professional concerns, but also of a professional, anchored in a universal culture, endowed with a system of values such as: discipline, self-discipline capacity, dignity, respect for oneself and others, responsibility, honesty, kindness, empathy, tolerance, etc.

**Scientific research methodology.** The research is based on theories, models and concepts: the importance and role of values in individual and social development, P. Andrei

[62-64]; integration of values in education S. Cristea [20]; learning and transmission of fundamental principles and values Cucos C.[23-26]; understanding and management of emotions in the educational framework M. Cojocaru-Boroza et al. [18]; promoting the importance of self-education L. Papuc [56; 57] and the concept of human personality as a coherent system, which is formed in the sociocultural environment V. Davîdov [84], A. Leontiev [87], E. Erikson [79], G. Kelly [81]); M. Rokeach [83], M. Fishbein [80], P. Andrei [61], T. Vianu [75;76], B. Voicu [77], the process of value formation in ontogenesis L. Kohlberg [82], J. Piaget [63], E. Verza [74], U. Şchiopu [67;68], I. Alexandrescu [1], C. Cucos [23; 25], D. Karpuşina [85], N. Krivîh [86]; the importance of education and the sociocultural environment in the formation of values B. Şerbănescu [72], N. Silistraru [69-71], E. Joiţa [47; 48], C. Cucos [25], S. Cristea [22], M. Boroza [9], E. Macavei [51; 52] and other authors.

**The essence of the research was revealed based on the following methods:**

- theoretical: scientific documentation, generalization and systematization of pedagogical concepts; analysis and synthesis; induction and deduction; causality and consequences;
- experimental: observation, pedagogical experiment; practical tests, questioning;
- data interpretation: quantitative and qualitative analysis of research data and mathematical and statistical processing of experimental results.

**The scientific novelty and originality** consists in the conceptualization of the system of sociocultural values, defined by elements of heritage and culture in the professional training of students in engineering study programs; the development and validation of the Pedagogical Model for the formation of sociocultural values of students in engineering study programs in the perspective of capitalizing on educational strategies in the process of university training.

**The results obtained that contributed to solving the scientific problem** include the development of an integrated concept of sociocultural values within engineering study programs, based on defining elements of heritage and culture. These were substantiated by theoretical and empirical research, leading to the development and validation of an innovative pedagogical model, which facilitates the formation of sociocultural values of students.

**The theoretical significance of the research** refers to the theoretical consolidation of the notions of sociocultural values; cultural heritage; educational strategies; sustainable education; determining the types of educational strategies in the formation of sociocultural values in students; describing the referential for the formation of sociocultural values for a sustainable education of students of engineering study programs.

**The applicative value of the research** is justified by the establishment of strategies for the formation of sociocultural values; validation of the components of the Pedagogical Model for the formation of sociocultural values of students of engineering study programs, developed and proposed for implementation; validation of the experimental results of the process of forming sociocultural values in engineering students based on the stages of the pedagogical experiment.

**The scientific implementation of the results** was achieved through theoretical research, presented at scientific conferences and experimental studies, conducted with students of engineering study programs at the Technical University of Moldova and the Free International University of Moldova.

**The approval of the research results** was achieved through their editorial valorization in: Digital Competencies in the Aspect of Sociocultural Education. Journal of Science, Innovation, Culture and Art "Akademos", No. 4 (71) / 2023 / ISSN 1857-0461 / ISSN 2587-3687, Category B. Available: [https://ibn.idsi.md/en/vizualizare\\_articol/198859](https://ibn.idsi.md/en/vizualizare_articol/198859); Formation of sociocultural competences and the influence of values on contemporary education, Scientific Bulletin of the State University "Bogdan Petriceicu Hasdeu" of Cahul, Series "Humanities", No. 2 (18) / 2023 / ISSN 2345-1866 / ISSN 2345-1904. Category B. Available:

[https://ibn.idsi.md/en/vizualizare\\_articol/197048](https://ibn.idsi.md/en/vizualizare_articol/197048); Implementation of innovative strategies that contribute to the sustainable development of students. International Symposium "Conservation and Restoration of Cultural Heritage", Iași, Doxologia Publishing House 2023, ISSN 2286-1459 ISSN-L 2286-1459, pp.341-361; The influence of cultural heritage in the formation of sociocultural values, In: Journal of Social Sciences, 2024, vol. 7, no. 1, pp. 114-122. ISSN 2587-3490. DOI: [https://doi.org/10.52326/jss.utm.2024.7\(1\).09](https://doi.org/10.52326/jss.utm.2024.7(1).09), Category B+. Available: [https://ibn.idsi.md/ro/vizualizare\\_articol/201824](https://ibn.idsi.md/ro/vizualizare_articol/201824); Training of young specialists in the context of sustainable education in technical university education based on socio-cultural values. In: Scientific Bulletin of the State University "Bogdan Petriceicu Hașdeu" of Cahul, Series "Human Sciences", 2024, no. 2 (20), pp. 117-131. ISSN 2345-1866. Available: [https://ibn.idsi.md/ro/vizualizare\\_articol/218385](https://ibn.idsi.md/ro/vizualizare_articol/218385); Training of socio-cultural values of university education students based on the concept of sustainable education. Books of abstracts, 19th Romanian Textiles and Leather Conference CORTEP 2024/ Mirela Blaga. - Iași: Performantica, 2024, ISBN 978-630-328-118-6, p.108. Available: [https://ibn.idsi.md/ro/author\\_articles/62771](https://ibn.idsi.md/ro/author_articles/62771); Organizational culture and the system of sociocultural values in university education. In: Actual problems of modern design, April 25, 2024, Kyiv. Kyiv: 2024, Vol.3, pp. 198-201. ISBN 978-617-7763-37-5. Available: [https://ibn.idsi.md/ro/vizualizare\\_articol/208554](https://ibn.idsi.md/ro/vizualizare_articol/208554) as well as at various scientific events. The scientific and practical results were editorially valued in several publications, reports presented at international scientific conferences.

**Thesis volume and structure:** the thesis includes annotations (Romanian, English, Russian), list of abbreviations, introduction, three chapters, general conclusions and recommendations, bibliography from 284 sources. The thesis contains 22 tables, 31 figures, 6 annexes; the total volume of the work is 169 pages.

## **BASIC THESIS CONTENT**

**The Introduction** argues the topicality and importance of the topic addressed for sustainable education in our society that tends to integrate into the educational and scientific space of the European Union; the situation in the field and the degree of study of the problem are presented; the purpose, objectives, scientific problem, theoretical and applied value of the thesis, novelty and originality of the scientific approach are identified.

**In Chapter 1, Theoretical landmarks regarding sociocultural values**, an analysis of theoretical studies on the topic addressed is made, concepts and theories regarding educational strategies, sociocultural values in university education are identified, and based on these theoretical data, the purpose, objectives, and the scientific problem proposed for solution were formulated.

The paper *describes the theoretical landmarks of sociocultural values, as an expression of culture and cultural heritage*, a study is carried out on cultural heritage and its promotion, which is found in several educational systems in European countries, in which a series of theories were formulated. The concepts we operate with in the doctoral thesis refer to culture, cultural values, which function as bridges between people who are part of a group. Through these values, groups shape their identity.

Sociocultural values, as fundamental sources for the professional development of students, reflect their integration into the university curriculum. The main objective is to raise awareness by the academic environment of the need to promote values, essential in the training of specialists as distinct personalities. The promotion of sociocultural values will have a significant impact on the training of well-trained and competitive specialists on the labor market, with personality, able to face the challenges and changes in their field of activity.



At the same time, *organizational culture and the system of sociocultural values in university education* are analyzed from the perspective of organizational culture and its specificity in university education institutions. The specificity of organizational culture in a university education institution is determined by: the profile of the organization; the values of the organization; the mission of the institution; the offer of optional subjects; extracurricular activities; managerial culture; socio-cultural segments to which students belong; educational projects financed from external sources.

**In Chapter 2, The methodological framework for the development of sociocultural values in university education**, an analysis is made and the Pedagogical Model for the formation of sociocultural values of students of engineering study programs is proposed, the referential for the formation of sociocultural values is analyzed and those educational strategies for the formation of sociocultural values for a sustainable education are highlighted, which later served to apply them in various case studies.

Through the methodological aspects of educational strategies in promoting sociocultural values in university education, educational strategies are identified and their valorization in the educational process in promoting sociocultural values is very important in scientific research, especially since it is necessary to re-evaluate, reconsider some values and concepts, and restore historical and cultural truth. The promotion of sociocultural values in the educational process supports students in drawing parallels between the cultures of native peoples and those of other nations, highlighting common values and contributing to the formation of a national identity and an informed citizen position, based on knowledge of the history and culture of various peoples. In this regard, in the present research we used fundamental concepts such as educational strategies, social values, cultural values, which have been addressed in the studies of specialists from various fields, such as education, culturology, sociology, philosophy of culture, psychology and anthropology. This gives the work an obvious multidisciplinary character. Currently, the research reveals that some aspects of the subject have already been found, either directly or tangentially, in publications from related fields. However, an insufficient approach to educational strategies for the promotion of sociocultural values in higher education, in the context of sustainable development, is observed.

In the *formation of sociocultural values in university education*, educational strategies for sustainable education are presented, which provide the necessary inspiration, stimulate creativity, guiding young people towards critical thinking, towards cooperation, in order to solve complex, real problems.

Sustainable development currently represents one of the major challenges faced by many countries globally, being a central concern of the European Union (EU), which has the responsibility to implement the European Sustainable Development Strategy (SDS), adopted in 2001 at the Gothenburg European Council, revised in 2005 and amended in 2006. In order to monitor the Sustainable Development Goals (SDGs) of the 2030 Agenda at a global level, 241 indicators were approved, according to which each country will be assessed.

Education for sustainable development needs to create moments of inspiration, encourage creativity and guide young people towards critical thinking and cooperation, in order to solve complex and real problems.

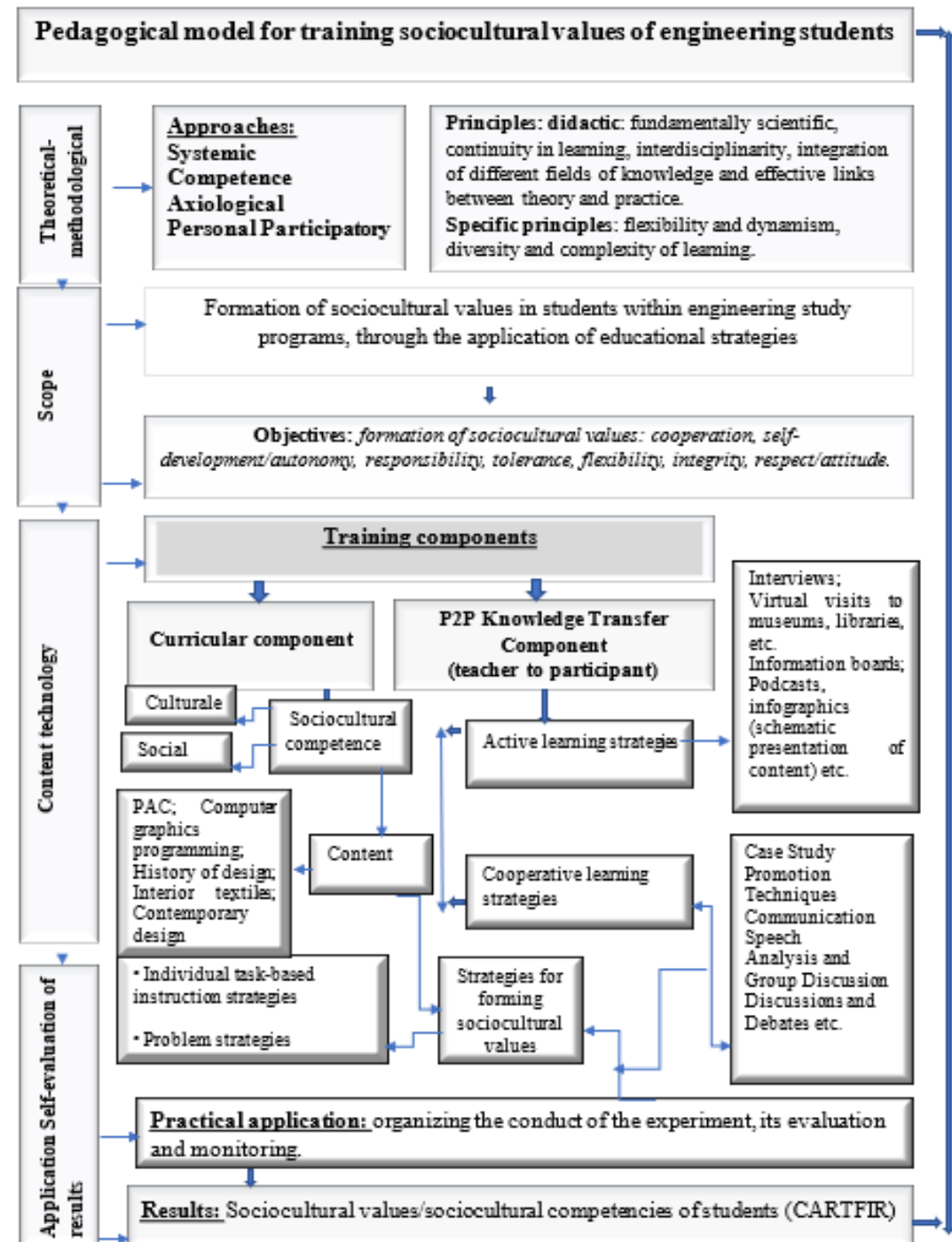
An effective strategy for promoting sociocultural values always begins with a clear, well-defined goal, which represents the starting point of the entire process. By establishing the goal, the general direction of promotion and the reference point that will be monitored after the implementation of the strategy are identified. To ensure efficiency, it is necessary to establish SMART objectives, i.e. specific, measurable, accessible, relevant and time-bound.

*The pedagogical model for training sociocultural values of students in engineering study programs* is presented in Figure 1.

The training of sociocultural values in university education aims to develop students' skills, so that they can integrate effectively in both the professional and social environment. The student will learn to perceive and identify himself as an integral person, but also to understand and respect the diversity of those around him. Education thus becomes an active process, focused on the formation of knowledge through cooperation, self-learning, exchange of experience and mobility, and is based on significant contexts from current reality. In this context, the first stage of the educational process consists of students' knowledge of sociocultural values. In the second stage, students begin to recognize and reflect on their own system of sociocultural values, manifesting them through individual experiences, creative activities and self-training. In the third stage, each student becomes his own self-modeler, a process that involves the maturation of personality and awareness of the impact of each action, favoring the harmonization between external constraints and inner freedom (figure 1.).

In this framework, the formation of a solid value support of sociocultural competencies is essential for the training of competitive specialists. The developed model can serve as a guide for the development of extracurricular activities, helping to identify the values to be promoted and providing a clear framework for communicating their importance in society. This model thus becomes a useful tool in the integration of sociocultural values both in the educational process and in society.

Currently, the identification and valorization of educational strategies for the promotion of sociocultural values is an important issue that requires further scientific research. The promotion of these values is crucial for the formation of personality in higher education in the Republic of Moldova, which has chosen to integrate education into the European educational system. Thus, the identification of appropriate educational strategies for the alignment of higher education in the Republic of Moldova with European standards is imperative, given the need to become competitive both nationally and internationally.



**Figure 1.** Pedagogical model for training sociocultural values of engineering students [developed by the author]

In the academic environment, interaction with various ethnicities, cultures, and social strata takes place, which is why students are encouraged to understand and appreciate the specificity of each individual subject, placing as a supreme priority the sociocultural values that contribute to assertive communication and integration. The pedagogical model focused on the formation of these sociocultural values, arising from current demands and the presence of social, cultural, ethnic, psychological, methodological, and strategic factors.

**In Chapter 3, Experimental Coordinate for the Valorization of Educational Strategies for the Formation of Sociocultural Values in Students of Engineering Degree Programs,** the results of the pedagogical experiment carried out through the three classical stages during

the years 2022-2024 are presented. The experimental research was based on the results of theoretical research, including an investigation toolkit to test the level of formation of sociocultural values at the stages of observation and control of the pedagogical experiment, the development and implementation of actions to apply educational strategies to students within the framework of higher education programs in engineering. To achieve the objectives of the research, two educational institutions with accredited higher education programs in the field of engineering, processing technologies, architecture and construction were selected (Technical University of Moldova and the International Free University of Moldova) and 198 students were trained.

The research groups were made up of students from the Information Technologies and Interior Design undergraduate programs within the Faculty of Informatics, Engineering and Design (ULIM) and the Faculties of Informatics, Engineering and Design and Interior Design (UTM):

a) experimental group (LE) - 44 students from ULIM, Faculty of Informatics, Engineering and Design, Informatics (Inf) study program, Information Technologies (TI) study program and 60 students from UTM, Faculty of Urbanism and Architecture, Interior Design (DIN) study program;

b) control group (LC) - 43 students from ULIM, Faculty of Informatics, Engineering and Design, Information Technologies study program and 51 students from UTM, Faculty of Urbanism and Architecture, Interior Design study program.

**Table 1. Sociocultural values research design**

| Group             | Academic year  | Group/ specialty           | No. of subjects | Discipline/ University course           |
|-------------------|--|----------------------------|-----------------|---|
| Experimental (LE) | ULIM, Faculty of Informatics, Engineering and Design, Department of Information Technologies |                            |                 |   |
|                   | 2022/2023  | TI-211, anul II (ro, F)    | 13              | Computer Aided Design                   |
|                   |  | Inf-213 anul II (ro, F)    | 14              |   |
|                   |  | TI-211-21 anul II (ro, FR) | 10              | Computer Graphics Programming           |
|                   |  | TI-32, anul III (ru, F)    | 7               |   |
|                   | UTM, Faculty of Urban Planning and Architecture, Interior Design department                  |                            |                 |   |
|                   | 2022/2023  | DIN-201 anul III (ro, F)   | 20              | History of design                       |
|                   |  | DIN-201 anul III (ro, F)   | 20              | Textiles in the interior                |
|                   | 2023/2024  | DIN-201 anul IV (ro, F)    | 20              | Contemporary design. Theory and concept |
|                   | Total:   |                            | 104             |   |
| Control (LC)      | ULIM, Faculty of Informatics, Engineering and Design, Department of Information Technologies |                            |                 |   |
|                   | 2022/2023  | Inf – 201 anul II (ro, F)  | 29              | Computer Aided Design                   |
|                   |  | TI -36 anul III (ro, FR)   | 14              | Programarea graficii la calculator      |
|                   | UTM, Faculty of Urban Planning and Architecture, Interior Design department                  |                            |                 |   |
|                   | 2022/2023  | DIN-201 anul III (ro, F)   | 17              | History of design                       |
|                   |  | DIN-201 anul III (ro, F)   | 17              | Textiles in the interior                |
|                   | 2023/2024  | DIN-201 anul IV (ro, F)    | 17              | Contemporary design. Theory and concept |
|                   | Total:   |                            | 94              |   |

The development of the values matrix based on the theoretical study from established sources, such as P. Iluț [45], C. Cucoș [25], , C. Enăchescu [30], V. Pâslaru [58], N. Silistraru [71], D. Antoci [3], which formed the system of research variables (innovative cooperation; progressive self-development/autonomy; ethical/moral responsibility; reflective/equidistant/harmless tolerance; cognitive flexibility; professional integrity; respect/cultural attitude) facilitated the identification of the context for collecting empirical data

and the start of experimental research by measuring the action of independent variables on dependent ones. The starting point in designing the research variables was the analysis of the socio-humanistic component in the curricula of the engineering study programs Computer-aided design, Computer graphics programming, History of design, Textiles in the interior, Contemporary design. Theory and concept. The objectivity of the recorded results is demonstrated by the introduction of research variables into the educational reality at the level of the educational process regarding the assessment of the degree of formation of sociocultural values of students in engineering study programs, conditioning the transposition into a university didactic context of the participation of research subjects in courses set for this purpose.

The experimental research methodology, in the sense of the system of applied and interpreted methods, was developed for the purpose of assessing the level of sociocultural values in the groups of students included in the research sample, concretized by the variables identified and proposed for measurement based on the criteria developed for this purpose.

**At the observation stage** of the pedagogical experiment, two research methods were established to measure the level of formation of sociocultural values: observation and interview. The instrument that facilitated data collection through the observation method was the observation sheet, developed based on the items established for each value and named based on the abbreviations of the 7 variables: **CARTFIR Sheet** (C=Innovative Cooperation; A=Self-development/Progressive Autonomy; R=Ethical/Moral Responsibility; T=Reflexive/Equidistant/Inoffensive Tolerance; F=Cognitive Flexibility; I=Professional Integrity; R=Respect (cultural attitude). Each variable was subjected to measurements depending on the context of manifestation of the value (team activity, teacher-student relationship, presentation of work tasks in accordance with the norms of the cultural context, etc.) and measured on a three-level interval (minimum, medium, high). In interpreting the results recorded by students at the observation stage of the pedagogical experiment, minimal differences are found between the results recorded by students in the research groups, the lowest result being found for the medium level. (2.13%) of the students in the control group, very close to 3.85% - result of the subjects of the experimental group, the high level values of the groups being also close, with a difference of 1.76% between the results for the innovative cooperation variable. The lowest result was recorded for the high level (15.96%) of students in the control group, very close to the 18.27% result of the experimental group subjects for the sociocultural value of respect/cultural attitude.

**The interview method** was applied to ascertain the level of development of the sociocultural values of the engineering students by assessing the degree of knowledge, application and attitude towards the sociocultural values within the mandatory formative assessments for each university course. The interview questions were structured based on the CARTFIR variables established within the research. To determine the level of knowledge, application and attitude towards sociocultural values, 7 interview guides were developed, each with one question requiring answers on knowledge (C), application (Ap), attitude (At) and integration (In) for each sociocultural value, and built for closed answers (yes and no).

**Table 2.** Results recorded by students in the interview regarding knowledge, application, attitude and integration of sociocultural values in the university training process

| Sociocultural values                              | Value criteria  | LE (104) |       | LC (94) |       |
|---|---|----------|-------|---------|-------|
|   |   | Nr.      | %     | Nr.     | %     |
| Innovative Cooperation                            | (Cn) Are interdisciplinary projects based on innovative cooperation in the work process?                                | 67       | 64,42 | 48      | 51,06 |
|   | (Ap) Can the learning environment be stimulating and creative in the cooperation process?                               | 72       | 69,23 | 49      | 52,13 |
|   | (At) Does innovative cooperation favor innovation in learning-teaching-assessment methods?                              | 64       | 61,54 | 47      | 50,00 |
|   | (Int) Do you believe in the effectiveness of networking and professional opportunities for innovative cooperation?      | 65       | 62,50 | 48      | 51,06 |
| Self-Development/<br>Progressive<br>Autonomy      | (Cn) Do you think critical thinking is essential for making good decisions?   | 65       | 62,50 | 56      | 59,57 |
|   | (Ap) Is self-education a key factor in improving a student's skills?  | 65       | 62,50 | 49      | 52,13 |
|   | (At) Do you think self-confidence is crucial for a student's academic success?  | 60       | 57,69 | 53      | 56,38 |
|   | (Int) Is adaptability a necessary skill in a dynamic educational environment?   | 64       | 61,54 | 52      | 55,32 |
| Responsibility<br>ethical/moral                   | (Cn) Do you consider that taking responsibility is a central element of academic education?                             | 56       | 53,85 | 47      | 50,00 |
|   | (Ap) Is it important for teachers and students to have an open communication channel to discuss ethical responsibility? | 58       | 55,77 | 52      | 55,32 |
|   | (At) Do you consider that a teacher can influence students' ethical behaviors through their own example?                | 62       | 59,62 | 52      | 55,32 |
|   | (Int) Do you consider that a fair educational environment is essential for student success?                             | 56       | 53,85 | 49      | 52,13 |
| Tolerance<br>Reflective/Equidistant/Non-Offensive | (Cn) Is it important for students to learn about diversity and inclusivity to reduce prejudice?                         | 58       | 55,77 | 52      | 55,32 |
|   | (Ap) Is creating an environment open to cultural promotion important in the educational process?                        | 55       | 52,88 | 47      | 50,00 |
|   | (At) Is empathy an essential element in a harmonious educational environment?   | 75       | 72,12 | 44      | 46,81 |
|   | (Int) Do you consider that promoting intercultural collaboration in education is beneficial for students?               | 61       | 58,65 | 51      | 54,26 |
| Cognitive flexibility                             | (Cn) Is cognitive flexibility important in the educational process?   | 82       | 78,85 | 45      | 47,87 |
|   | (Ap) Do you consider that problem-solving skills are fundamental for developing cognitive flexibility?                  | 73       | 70,19 | 49      | 52,13 |
|   | (At) Do you believe that promoting lifelong learning supports the development of cognitive flexibility?                 | 78       | 75,00 | 68      | 72,34 |
|   | (Int) Do you think that emotional regulation is important for a student's academic success?                             | 67       | 64,42 | 48      | 51,06 |
| Professional integrity                            | (Cn) Is trust a fundamental element of professional integrity?  | 58       | 55,77 | 47      | 50,00 |
|   | (Ap) Do you think that academic responsibility is essential for a student's success?                                    | 62       | 59,62 | 45      | 47,87 |
|   | (At) Is community involvement an important element of university education?   | 65       | 62,50 | 44      | 46,81 |
|   | (Int) Do you think that a harmonious educational environment reduces conflicts?   | 63       | 60,58 | 48      | 51,06 |
| Respect<br>(cultural attitude)                    | (Cn) Is it important for universities to promote respect in interpersonal relationships?                                | 56       | 53,85 | 51      | 54,26 |
|   | (Ap) Is constructive feedback an effective tool in encouraging respect between professors and students?                 | 64       | 61,54 | 48      | 51,06 |
|   | (At) Do you think that promoting diversity within universities should be a priority?                                    | 62       | 59,62 | 49      | 52,13 |
|   | (Int) Is it important for all students to have equal access to the educational opportunities offered by the university? | 73       | 70,19 | 42      | 44,68 |

The observation of the large number of students in the experimental group with a low level of knowledge and integration of sociocultural values demonstrates that at this stage the effects of a deficient development are present for all established indicators, an argument for the application of the experimental pedagogical intervention through a program of valorization of educational strategies for the formation of sociocultural values in engineering study programs students.

*The hypothesis launched*, regarding the contribution of educational strategies to the personal development and social integration of engineering study programs students in the case of establishing the conceptual and methodological framework for the formation of sociocultural values, is confirmed by the experimental validation of the Pedagogical Model for the formation of sociocultural values in engineering study programs students, under the conditions of the application of the Project for the organization and implementation in the educational process of **educational strategies through the curricular components and Knowledge Transfer: P2P**.

**Table 3.** Project for the organization and implementation in the educational process of educational strategies through the curricular and Knowledge Transfer components: P2P

| <b>Purpose:</b> Capitalizing on educational strategies for training sociocultural values of students within engineering study programs |   |  |  |
|--|---|--|--|
| <b>Educational strategies reflected in the Pedagogical Model</b>   | <b>Individual student project assignments</b>   | <b>CARTFIR values in the training process</b>  | <b>University courses</b>  |
| <b>Curricular component</b>  |   |  |  |
| 1.1. Task-Based Instruction Strategy   | Creating a unique visual identity: logo, promotional materials  | <b>Innovative Cooperation and Progressive Autonomy</b> <ul style="list-style-type: none"> <li>• <i>Ethical Responsibility</i></li> <li>• <i>Cognitive Flexibility</i></li> <li>• <i>Cultural Respect/Attitude</i></li> <li>• <i>Reflective Tolerance</i></li> <li>• <i>Professional Integrity</i></li> </ul> | Computer Graphics Programming<br>Computer Aided Design<br>Applied Information Technologies |
| 1.2. Problem-Based Learning (PBL) Strategy   | Creating projects and case studies for the analysis of textile materials in interior design                                     | <b>Cognitive Flexibility and Professional Integrity</b> <ul style="list-style-type: none"> <li>• <i>Reflective Tolerance</i></li> <li>• <i>Cultural Respect</i></li> <li>• <i>Innovative Cooperation</i></li> </ul>  | History of Design<br>Textiles in Interiors<br>Contemporary Design.<br>Theory and Concepts  |
| <b>Knowledge Transfer Component: P2P (peer-to-peer)</b>  |   |  |  |
| 2.1. Active learning strategies (P2P learning)   | Interior design (study visit to the National Library of the Republic of Moldova)  | <b>Self-development and Academic Responsibility</b> <ul style="list-style-type: none"> <li>• <i>Cognitive Flexibility</i></li> <li>• <i>Innovative Cooperation</i></li> <li>• <i>Academic Responsibility</i></li> <li>• <i>Reflective Tolerance</i></li> </ul>   | History of Design<br>Textiles in Interiors<br>Contemporary Design.<br>Theory and Concepts  |
| 2.2. Cooperative learning strategies (role playing)  | Realization of thematic design at various venues, museums, houses of material cultural heritage, giving and receiving feedback. | <b>Cultural Respect and Reflective Tolerance</b> <ul style="list-style-type: none"> <li>• <i>Empathy Development</i></li> <li>• <i>Ethical Responsibility</i></li> <li>• <i>Innovative Cooperation</i></li> <li>• <i>Cognitive Flexibility</i></li> </ul>  | History of Design<br>Textiles in Interiors<br>Contemporary Design.<br>Theory and Concepts  |

The following are examples of the application of educational strategies in the formation of sociocultural values in students of engineering study programs.

## **Curricular component**

### **Strategy of training based on individual tasks**

**Objective:** formation of the sociocultural value of innovative cooperation and progressive autonomy and related values of ethical responsibility, cognitive flexibility, cultural respect/attitude, reflective tolerance, professional integrity

**Students' individual project task:** creation of a unique visual identity - logo, promotional materials

To carry out the experiment, 15 non-profit organizations from the Republic of Moldova, active in the field of social entrepreneurship, were selected, which had as their objective the creation of a distinct visual identity, including logos and promotional materials (flyers, banners, business cards, posters). Each student chose a non-profit organization and, using graphic programs in accordance with the discipline curriculum, created the corresponding promotional materials and logo. Each student has carried out a detailed analysis of the history of the organization, the activities carried out, the product offered and the target group of customers. The recent emphasis in educational activity on modern active-participatory methods marks a new approach to the contents, selected in a new manner of the didactic strategy, which engages all students in individualized and differentiated learning, they being put not only in the situation of learning certain notions, but also of discovering them, associating them, and applying them creatively at various moments. *The formation of the socio-cultural value of innovative cooperation and progressive autonomy* represents a fundamental objective in education and professional development. These values are supported by related values, such as ethical responsibility, cognitive flexibility, respect and cultural attitude, reflective tolerance and professional integrity, which constitute the necessary framework for a fair and progressive learning and working environment. The strategy of individual task-based learning plays an essential role in their development, offering each student the opportunity to express their autonomy, to collaborate innovatively and to apply ethical principles in solving complex problems. Thus, the integration of these approaches into a continuous educational and professional process ensures the formation of competent, responsible individuals prepared to actively contribute to the development of a balanced and sustainable society.

### **Problem-Based Learning (PBL) Strategy**

**Objective:** formation of the **sociocultural value cognitive flexibility and professional integrity** and the related values reflective tolerance, cultural respect, innovative cooperation

**Students' individual project task:** creation of projects and case studies for the analysis of textile materials in interior design.

The study was developed within the Faculty of Urban Planning and Architecture, Interior Design study program. The study was based on the formation of *the sociocultural values cognitive flexibility and professional integrity* and the related values reflective tolerance, cultural respect, innovative cooperation. Tasks were designed and implemented for the problem-based learning strategy in a face-to-face format in the discipline "Textiles in Interior Design". The experiment was carried out during four sessions of 2 hours each (once a week), in groups of 12 students with a tutor who played the role of a learning facilitator. The proposals regarding the application of the problem-based learning strategy for sustainable development refer to the opinions of the students, who during the task addressed design-related issues, also incorporated cultural, social, environmental, and economic concerns. These topics discussed with the students were considered attractive, original, current, and generated new creative ideas. The presented study highlights the effectiveness of innovative educational strategies, especially the problem-based learning (PBL) method, which supports the development of the necessary skills for sustainable development, integrating sociocultural, economic, and environmental values into



the educational process. The results of the study demonstrate that the students appreciated the usefulness of this method, recognizing its ability to address and solve real problems in an ethical and innovative way. By engaging in individual project tasks, such as creating projects and case studies for the analysis of textile materials in interior design, the students had the opportunity to develop cognitive flexibility, cultural respect, reflective tolerance, and professional integrity. These conclusions suggest that problem-based learning strategies can be a valuable tool in training future specialists capable of responding to the challenges of a constantly changing world, promoting innovative cooperation and adaptability in a dynamic and sustainable educational context.

**Knowledge Transfer Component: P2P (peer-to-peer)**

**Active learning strategies, learning through P2P**

**Objective:** formation of sociocultural value self-development and academic responsibility and related values cognitive flexibility, innovative cooperation, , reflective tolerance

**Students' individual project task:** arrangement of an interior space (knowledge transfer, study visit to the National Library of the Republic of Moldova)

In the context of promoting and developing sociocultural values in education, teachers have the role of involving students in interactive activities, which will provide them with the opportunity to acquire advanced knowledge for solving problems, to actively contribute to the creation of new information and to propose innovative solutions. The study visit to the National Library of the Republic of Moldova aimed to familiarize students with working with specialized magazines in the field of interior design, as well as a trip to the Book Museum, to expand their perspective on the evolution and resources in this field. The sociocultural values promoted were: **self-development, academic responsibility** and related values *cognitive flexibility, innovative cooperation, reflective tolerance*. These values were analyzed through the observation sheet, where it was indicated which values were lower and which obtained a maximum score after applying this educational strategy.

The case study explored how sociocultural values contribute to the formation of future specialists as authentic personalities. Within it, an educational strategy based on active learning was applied, involving students from the Interior Design study program at the Technical University of Moldova, Faculty of Urban Planning and Architecture, Department of Urban Design. The pedagogical experiment aimed to involve students in finding innovative solutions for the arrangement and decoration of public buildings. Specialized magazines were used as sources of inspiration, with the role of stimulating students' creativity and developing their confidence in their ability to propose solutions through experimental learning. The students had two months to create an artistic portfolio, and their results were presented and defended in front of their peers. This study illustrates the impact of educational strategies on the way in which sociocultural values are internalized and applied by students. Involving students in identifying and proposing solutions for the arrangement and decoration of public buildings represents a valuable opportunity to encourage them to apply theoretical knowledge in a practical context, stimulating their creativity and critical thinking. Through this approach, students are challenged to develop innovative solutions, considering both functionality and aesthetics, while respecting the principles of sustainability and harmonious integration of architectural and design elements in the urban landscape.

This experience allows students to work with materials, forms and techniques specific to interior design and architecture, but also to understand the importance of choosing the right decorative elements, light, color and texture, depending on the specifics of each public building and its users. Also, the process of collaboration with professionals in the field, from architects

and interior designers to heritage conservation specialists, contributes to the development of the ability to communicate and work in multidisciplinary teams.

Through this method, students not only learn to respond to functional requirements, but also gain a deep understanding of the impact of design on the community, culture and the environment. In addition, respect for the cultural and historical diversity of public spaces is promoted, being essential to propose solutions that reflect local identity and support social inclusion. Thus, they prepare for a successful career in urban and interior design, having the necessary tools to positively influence the evolution of the environment.

### **Cooperative learning strategies (role-playing)**

**Objective:** formation of socio-cultural values, **cultural respect and reflective tolerance** and related values, *development of empathy, ethical responsibility, innovative cooperation, cognitive flexibility*

**Students' individual project task:** realization of thematic design at different venues, museums, houses of tangible cultural heritage, giving and receiving feedback.

Cooperative learning strategies, including role-playing, are educational methods that emphasize collaboration between students to learn and solve complex tasks. In this context, role-playing is an active technique in which participants assume specific roles in a simulation of real or hypothetical scenarios. This allows them to learn through direct experience, improving their communication, problem-solving and teamwork skills.

In operational design activities, cooperative strategy (role-playing) is applicable, for example, *to realize thematic design at different venues, museums, houses of tangible cultural heritage. The teacher in such a situation acts as an expert in the subject, processes and evaluates the solutions proposed by a student or a group of students.* The situation can take place between the agent and the client. The problem can be posed by suggesting a non-standard situation in which a designer or programmer finds himself. To begin with, students are offered one of the possible problem situations: „rearrangement of the room design with the preservation of cultural elements”, „decoration of the interior space”, „creation of a library”, etc.

The task of the students is to propose an algorithm of actions to solve the problem that has arisen and minimize material costs, as well as preserve elements of cultural heritage, if we are talking about objects included in the list of cultural heritage protected by the state. Students are informed in advance that this problem should be solved in 10-15 minutes, the group is divided into small groups of 3-4 people, each of whom should develop as many ideas as possible. The leaders of these small groups select the best solutions. Ideas can be standard or unusual. Then, the expert teacher evaluates the solutions and justifies possible algorithms for the development of further events.

The main advantage of the method is that it helps to discipline students, giving them both the opportunity to organize work in groups and to carry out individual activities, supported by clear educational and methodological materials. Assessment of work is carried out by awarding points, which allows each student to calculate and evaluate their own capabilities, thus having the opportunity to improve their performance and practice self-assessment.

As for the cooperation strategy (especially role-playing), it plays an essential role in the formation of socio-cultural values. By actively participating in such activities, students learn to appreciate and respect cultural diversity, thus developing their **cultural respect and reflective tolerance**. These activities not only help to understand and appreciate differences between cultures and perspectives, but also allow students to apply fundamental concepts such as ethical responsibility and empathy in their interactions.

Also, by collaborating in role-playing games, students have the opportunity to develop **innovative cooperation** and exercise their **cognitive flexibility** – essential values in today's

professional world. These activities help them learn how to find creative solutions to complex problems, quickly adapt work strategies and understand different perspectives. Ultimately, this method contributes to the formation of more responsible, more open students who are better able to collaborate effectively in a globalized and multicultural environment.

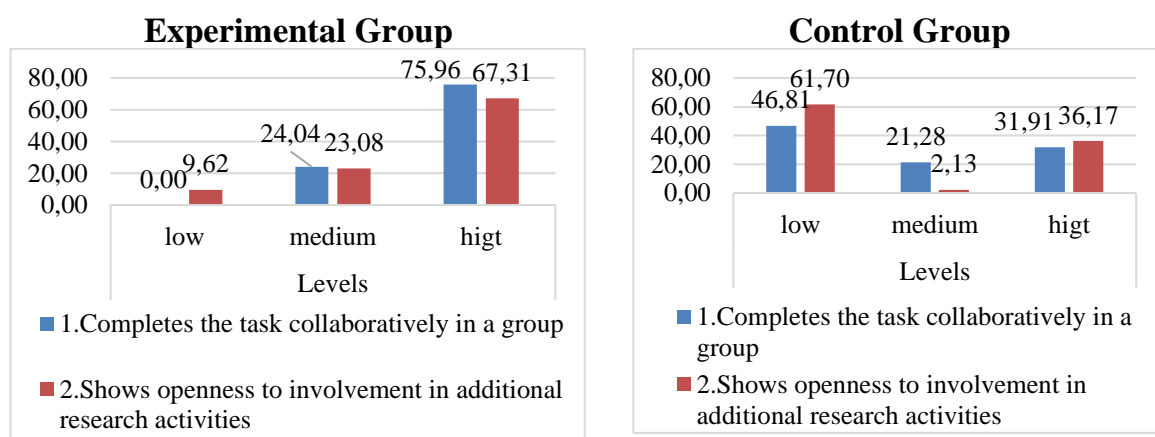
Thus, the results of the pedagogical experiment conducted within the thesis confirmed the research hypothesis, according to which the formation of sociocultural values in the context of engineering students' education will be effective if: the theoretical foundations of sociocultural values are established; the professional training of students is clarified and approached in a paradigmatic way; and the specific way of promoting sociocultural values is determined.

*When evaluating the effectiveness of the investigative-experimental approach to the formation of sociocultural values in university education*, the results obtained at the formative stage of the pedagogical experiment, aimed at the formation of sociocultural values in students, are presented.

An important compartment in the conduct of the research presents the stage of the control experiment, which aimed to reflect the results obtained after the formative stage of the pedagogical experiment, aimed at the formation of sociocultural values in students.

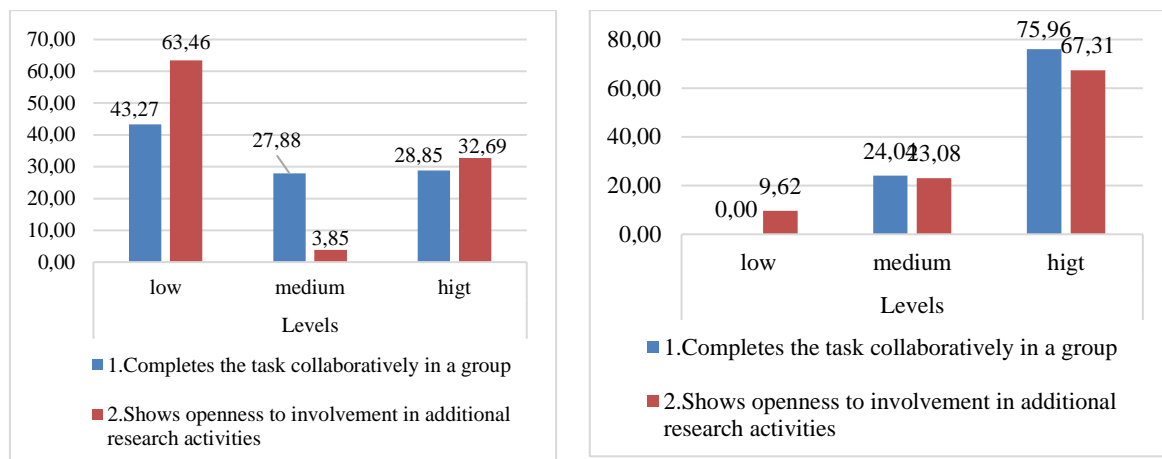
As a result of the evaluation of the results recorded by students on the items in *the observation sheet*, are presented in figures 2., 4. reflect the differences in the values obtained from the experimental group and the control group when evaluating the items. The following figures present the data recorded by students in the comparative plan of the research groups (LE – experimental group; LC – control group), and the representation of the experimental group in the comparative plan of the stages of the pedagogical experiment (observation-control), figures 3. and 5.

The graphs (figure 2.) present the comparative performance of the experimental group (E) and the control group (C) in terms of innovative cooperation, analyzed through two criteria: completing the collaborative task in the group and demonstrating openness to involvement in additional research activities.



**Figure 2.** Level of innovative cooperation of engineering students in the comparative group plan (LE-LC)

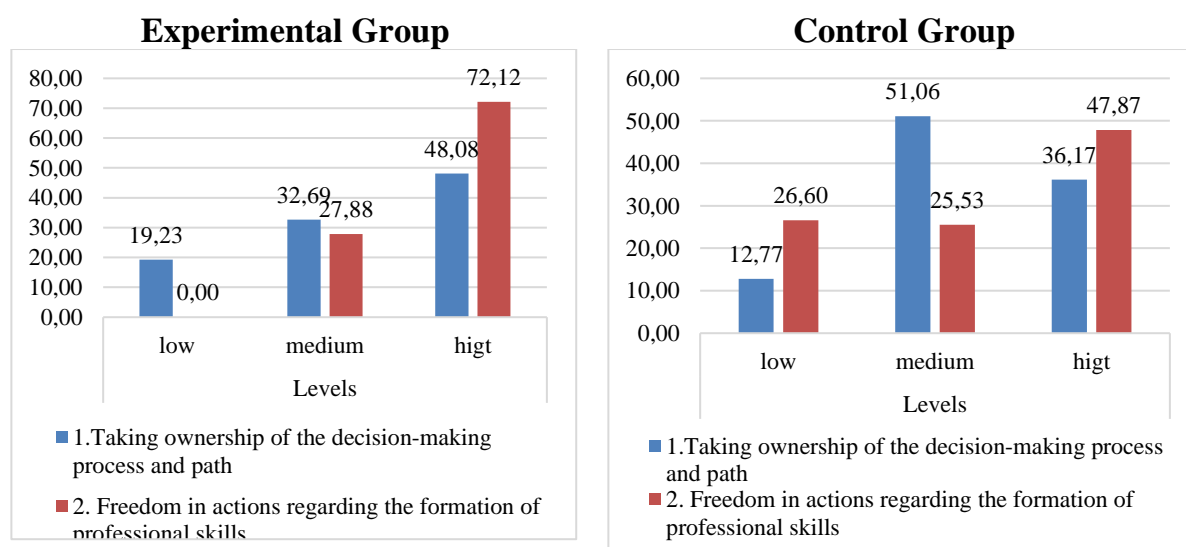
The students in the experimental group, in criterion 1, obtained a high level of cooperation (75.96%) and those with an average level of 24.04%. In criterion 2, the openness to additional activities is also higher (67.31% for high level) compared to students in control group (C), which in criterion 1 for high level is 31.91%, well below the level of the experimental group. The control group, while showing progress, lags behind the experimental group both in terms of collaboration and openness to further work.



**Figure 3.** The level of innovative cooperation of engineering students in the experimental group in the comparative plan of the stages of the pedagogical experiment (observation-control)

The data from the experimental group in the comparative plan of the stages of the observation-control pedagogical experiment represent a high level in both criteria analyzed after the experiment.

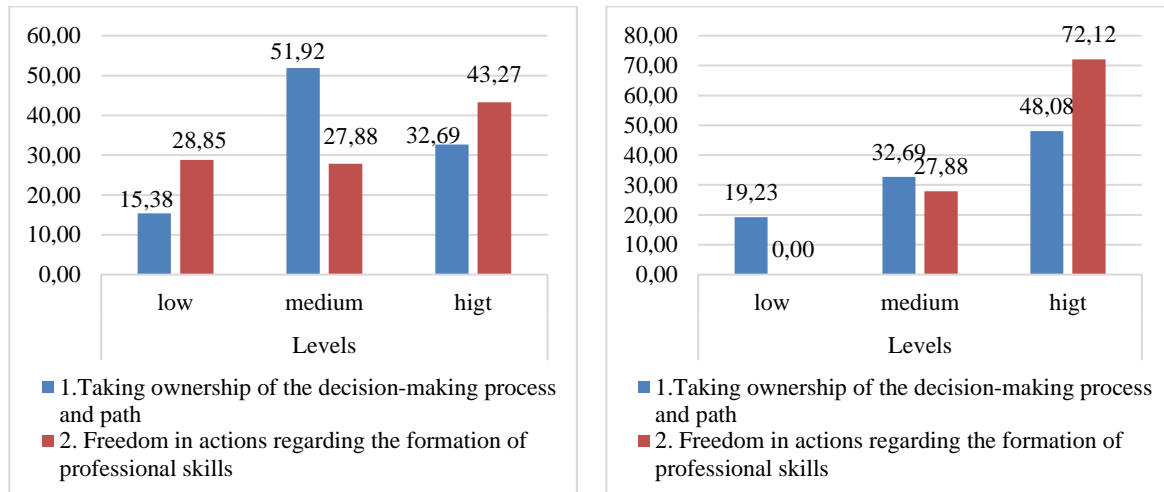
The graphs in the thesis in figure 3.17, comparatively present the performances of the experimental group (E) and the control group (C) in terms of self-development/progressive autonomy, analyzed through two criteria: assuming the decision-making process and path and freedom in actions regarding the formation of professional competencies. The results of the experimental group in criterion 1 represent the majority of students (48.08%) are at the high level, and the other two levels (19.23% and 32.69%) are distributed relatively evenly. In the control group, the distribution is different: 51.06% are at the average level, which suggests a significant difference compared to the experimental group, where there is not so much concentration on the average category.



**Figure 4.** Level of self-development/progressive autonomy of engineering students in the comparative plan of groups (LE-LC)

For criterion 2, in the experimental group, there is a high concentration (72.12%) on the category with the highest value, which suggests a strong autonomy and a greater degree of

freedom in actions. But in the control group, the distribution is more balanced between the three levels, which suggests less freedom in actions compared to the experimental group. A clearer tendency to assume the process and decisions and to experience a greater degree of freedom in actions is observed in the students in the experimental group, but in those in the control group the values are more balanced, which may suggest less autonomy in the learning and development process.



**Figure 5.** The level of self-development/progressive autonomy of engineering students in the experimental group in the comparative plan of the stages of the pedagogical experiment (observation-control)

The experimental group data at the control stage (figure 5.) at criterion 1 the percentages are distributed more evenly, with a slightly higher tendency towards the 48.08% high level, but at the ascertainment stage the values are much more concentrated at the medium levels. For criterion 2 the subjects in the experimental control group represent the majority at the high level with a value of 72.12%, which suggests a clear dominance of a certain response. In contrast, in the ascertainment experimental group, the distribution is more evenly, with percentages distributed between 28.85%, 27.88%, and 43.27%. Although 43.27% is the highest value, the differences between the groups are less evident than in the control group, indicating a greater diversification of opinions.

The elaborated model that we implemented during the teaching activities includes six guiding principles:

- Innovation in teaching and learning is aimed at initiating intense cooperation between students, teachers and practitioners. During the studies, these actors become innovators who are interested in using academic knowledge and skills in order to solve practical problems and provide new solutions.

- Innovation through practice. Students are given the chance to carry out concrete real-life projects. The projects are as open as possible, and new knowledge will be shared between the participants. The main goal is to inspire the participants to become more innovative. Teaching and learning are based on a methodology and pedagogy that forces the combination of analytical and creative work.

- Real-life projects. Working on real-life projects, which are initiated by students or cooperating business companies, accelerates the learning process. Projects can last from a few hours to a few months. Quick and concrete results inspire to learn more.

- Customer orientation. Students learn to know the needs of users and customers of new products, services and businesses that are initiated and developed. Meeting users and customers in person or virtually, or through other creative methods increases understanding of their problems and needs.
- Collaboration without boundaries. Teaching innovation uses the expertise of a multitude of actors (teachers, supervisors, students, practitioners) in different creative ways. Opening up the innovation process within the team and the course emphasizes the value of diversity of people and ideas, different points of view and creativity.
- Management and reflection. Teachers, students and other cooperating partners learn how to work in diverse teams, how to lead cooperation processes and how to reflect on the innovation process. The main goal is to become more informed about educational strategies that participants can use to guide the innovation process in a desirable direction.

## **GENERAL CONCLUSIONS AND RECOMMENDATIONS**

As a result of the complex study of the educational strategies for the formation of sociocultural values in the students of the engineering study programs, taking into account the purpose and objectives proposed, we have reached the following general conclusions:

1) At the current stage of research, the educational strategies for the formation of sociocultural values in university education have not benefited from a complex study. The study of literature and theoretical approaches to sociocultural values has allowed to elucidate the concept of culture, heritage and sociocultural values that are essential in university education. Educational strategies are a flexible component of the constantly changing university curriculum, defined as a totality of means, methods, forms of organization applied in order to achieve educational goals (Chapter 1).

2) Through the multitude of definitions of educational strategies, it was helped to specify the significance of sociocultural values as a series of actions oriented towards optimal design for the purpose of training specialists, correlated with educational means involving the valorization of sources for creating interactive situations of professional training, oriented towards the training of students. Thus, sociocultural values have been defined as a source of integral and competitive personality development in the context of sustainable education by substantiating the concepts of cultural heritage in the training of specialists in university education (Chapter 1).

3) In order to identify strategies for the formation of sociocultural values, a methodology was developed that was used in the pedagogical experiment. We note that educational strategies for the formation of sociocultural values involve educational activities that engage the student in a motivated personal effort, conducting a process of acquisition and transfer of knowledge, ensure the participation of all students in the intended activity, depending on the level and potential of each (Chapter 2).

4) From the perspective of the concept of education for sustainable development was examined the process of change and transformation in university education necessary for the training of specialists, change agents for sustainability. In this context, educational strategies, learning techniques and activities and their role in facilitating the transfer to education for sustainable development in higher education institutions have been described. Based on the above, we have developed some recommendations on educational strategies to achieve transformations at the educational level, as well as the pedagogical model for the formation of sociocultural values in university education (Chapter 2).

5) The pedagogical experiment on the recognition of the potential of sociocultural values as sources of sustainable development of the university training process was capitalized. In contemporary education, the idea of the need for interactive learning in higher education institutions that places the student at the center of the pedagogical relationship is a fundamental principle. It was observed that interactive group methods are characterized by interaction between participants and their personalities, stimulating active learning and generating visible results. This type of interactivity facilitates the identification of the student with the learning situation in which he is involved, which makes him the master of his own change and development. Thus, it supports the development of students' collaborative skills, skills essential for both their personal life and future professional activity (Chapter 3).

6) Based on the accumulated materials and the pedagogical experiment conducted, the algorithm for the application of educational strategies for the formation of sociocultural values as part of education for sustainable development was determined. It is noted that each interactive method has both advantages and disadvantages, and their success largely depends on the chosen time for application. The role of the teacher is to make the necessary decisions and to select the most appropriate methods, taking into account the characteristics of the student collective within the educational institution. The mentor is responsible for identifying the most appropriate solutions for instructional-educational problems (Chapter 3).

7) We note that the selection and organization criteria of the educational training strategies are aimed at streamlining learning, motivating the cognitive interest of students for their use in communication at the level of authentic relationships. Training practice has shown that there are no educational strategies recommended exclusively for the formation and promotion of sociocultural values, most research suggests the use of a wide range of sustainable teaching methods. We believe that it is important for teachers to design university teaching activities with the aim of forming sociocultural values, being necessary to increase awareness of the weight of sociocultural values through various participatory activities. The design of educational strategies for the activities of study disciplines for the training of students is ensured by the indicators of efficiency of methods in university education (Chapter 3).

8) The results of the pedagogical experiment confirmed the actuality of the research, validated the conception of the investigation on the sociocultural values formed in the educational process in students, the veracity being guaranteed by the methodological basis of the initial parameters and the use of the research methodology, in accordance with the purpose and objectives proposed; the continuous nature and the possibility of repetition/exercise of activities, which allow the execution of quantitative and qualitative analysis of the data of the experiment. We note that in the process of the experiment the students demonstrated that they can face challenges in various situations, in this regard, the diagnoses made within the university teaching activity led to the idea that the students did not initially have formed sociocultural values. Thus, the need arose for an experimental investigation centered on the application of educational strategies for the formation and promotion of sociocultural values (Chapter 3).

9) Pedagogical experiment demonstrated the possibility and necessity of applying educational strategies for training and promotion in university education: the principles of use have been validated in compliance with the stages in the training process, being recognized as quality indicators of teaching-learning-evaluation in university education. At the same time, the set of activities carried out through educational strategies for promotion in university education capitalises on and fosters the development of socio-cultural values in students (Chapter 3).

In this multidisciplinary scientific approach, we determined the theoretical landmarks of sociocultural values as the most appropriate ones in the formation of sociocultural values in university education, contributing to diversity and social integration, through the elaboration,

implementation, experimental valorization of the pedagogical model of formation of sociocultural values in university education, including the identification of educational strategies of formation of sociocultural values in university education on the theoretical dimension and from the perspective of professional integration of students on the applicative dimension. Integrating sociocultural values into the professional training of technical students not only improves their technical skills, but also develops their social responsibility, empathy and ability to collaborate effectively in a diverse society.

### **RECOMMENDATIONS based on research and general conclusions:**

**Researchers in the field** – continuing scientific research by expanding the issues addressed in the field of sociocultural values, conducting an extensive comparative study on the formation of sociocultural values in university education in EU countries.

**University teaching staff** – permanent documentation on new methodologies for the formation and promotion of socio-cultural values; teachers' awareness of the significance of sociocultural values in a contemporary society; implementing the model of formation of sociocultural values through educational training strategies in higher education institutions in the Republic of Moldova; development of an online platform, where the methodology based on educational strategies for training/promoting sociocultural values will be implemented; creating a university environment conducive to the formation of students' professional qualities; developing relationships between participants in the educational act focused on sociocultural values; development of course materials and notes, methodological guides for the continuous training of teachers in the formation of educational strategies for the formation of sociocultural values.

**For students in higher education institutions** – developing students' skills for education through and for heritage; self-motivation for the use of modern technologies in studying the values of cultural heritage; self-training for the study of sociocultural values; participation in extracurricular activities; documentary visits to museums, exhibitions; active participation in scientific and cultural events to promote excellence in education and research. Training students through the proposed educational strategies contributes to professional growth as specialists, and as responsible citizens, able to contribute to a more sustainable society.



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**ADNOTARE**  
**Victoria DANILA**

**Strategii educaționale de formare a valorilor socioculturale la studenții programelor de studii ingineresti, Teză de doctor în științe ale educației, Chișinău 2025**

**Structura tezei include:** introducere, trei capitole, concluzii generale și recomandări, bibliografie din 284 surse, adnotare (în română, engleză, rusă), lista abrevierilor, 169 pagini, 22 de tabele, 31 figuri, 6 anexe. Publicații la tema tezei: 19 lucrări științifice.

**Cuvinte-cheie:** valori socioculturale, patrimoniu, strategii educaționale, învățământ universitar, educație durabilă, curriculum universitar, competențe, model pedagogic, transfer de cunoștințe.

**Scopul cercetării:** determinarea reperelor teoretice ale strategiilor educaționale privind dezvoltarea valorilor socioculturale, elaborarea și validarea Modelului pedagogic de formare a valorilor socioculturale ale studenților programelor de studii ingineresti.

**Obiectivele cercetării:** studiul abordărilor teoretice ale valorilor socioculturale prin elucidarea conceptelor de valoare, patrimoniu, cultură, cultură organizațională; conceptualizarea rolului valorilor socioculturale, ca factor esențial în dezvoltarea profesională a personalității competitive, în cadrul educației durabile; elaborarea Modelului pedagogic de formare a valorilor socioculturale ale studenților programelor de studii ingineresti; valorificarea rezultatelor aplicării Modelului pedagogic de formare a valorilor socioculturale ale studenților programelor de studii ingineresti; elaborarea concluziilor generale și a recomandărilor metodologice privind aplicarea strategiilor educaționale de formare a valorilor socioculturale, a studenților programelor de studii ingineresti.

**Noutatea și originalitatea științifică** constă în conceptualizarea sistemului de valori socioculturale, definite de elemente ale patrimoniului și culturii în formarea profesională a studenților la programele de studii ingineresti; elaborarea și validarea Modelului pedagogic de formare a valorilor socioculturale ale studenților programelor de studii ingineresti în perspectiva valorificării strategiilor educaționale în procesul de formare universitară.

**Rezultatele obținute care au contribuit la soluționarea problemei științifice** includ dezvoltarea unui concept integrat al valorilor socioculturale în cadrul programelor de studii ingineresti, bazat pe elemente definitorii ale patrimoniului și culturii. Acestea au fost fundamentate prin cercetări teoretice și empirice, conducând la elaborarea și validarea unui Model pedagogic inovativ, ce facilitează formarea valorilor socioculturale ale studenților.

**Semnificația teoretică a cercetării** se referă la consolidarea teoretică a noțiunilor de valori socioculturale; patrimoniu cultural; strategii educaționale; educație durabilă; determinarea tipurilor de strategii educaționale cu aplicații în formarea valorilor socioculturale la studenți; descrierea referențialului de formare a valorilor socioculturale pentru o educație durabilă a studenților programelor de studii ingineresti.

**Valoarea aplicativă a cercetării** este justificată de stabilirea strategiilor de formare a valorilor socioculturale; validarea componentelor Modelului pedagogic de formare a valorilor socioculturale ale studenților programelor de studii ingineresti, elaborat și propus spre implementare; validarea rezultatelor experimentale ale procesului de formare a valorilor socioculturale la studenții programelor de studii ingineresti în baza etapelor experimentului pedagogic.

**Implementarea științifică a rezultatelor** s-a realizat prin cercetări teoretice prezentate în cadrul conferințelor științifice și studii experimentale, desfășurate cu studenții programelor de studii ingineresti din cadrul Universității Tehnice a Moldovei și al Universității Libere Internaționale din Moldova.

## ANNOTATION

Victoria Danila

### **Educational strategies for training sociocultural values in engineering students, Doctoral thesis in educational sciences, Chisinau 2025**

**The structure of the thesis includes:** introduction, three chapters, general conclusions and recommendations, bibliography from 284 sources, annotation (in Romanian, English, Russian), list of abbreviations, 169 pages, 22 tables, 31 figures, 6 annexes. Publications on the topic of the thesis: 19 scientific papers.

**Keywords:** sociocultural values, heritage, educational strategies, university education, sustainable education, university curriculum, competencies, pedagogical model, knowledge transfer.

**Research purpose:** determining the theoretical benchmarks of educational strategies regarding the development of sociocultural values and developing and validating the Pedagogical Model for the formation of sociocultural values of students of engineering study programs.

**Research objectives:** study of theoretical approaches to sociocultural values by elucidating the concepts of value, heritage, culture, organizational culture; conceptualization of the role of sociocultural values, as an essential factor in the professional development of competitive personalities, within sustainable education; development of the Pedagogical Model for training sociocultural values, of students of engineering study programs; capitalization of the results of the application of the Pedagogical Model for training sociocultural values of students of engineering study programs; development of general conclusions and methodological recommendations regarding the application of educational strategies for training sociocultural values of students of engineering study programs.

**Scientific novelty and originality** consists of conceptualizing the system of sociocultural values, defined by elements of heritage and culture in the professional training of students in engineering study programs; developing and validating the Pedagogical Model for training sociocultural values of students in engineering study programs in the perspective of capitalizing on educational strategies in the university training process.

**The results obtained that contributed to solving the scientific problem** include the development of an integrated concept of sociocultural values within engineering study programs, based on defining elements of heritage and culture. These were substantiated by theoretical and empirical research, leading to the development and validation of an innovative pedagogical model, which facilitates the formation of students' sociocultural values.

**The theoretical significance** of the research refers to the epistemological consolidation of the notions of sociocultural values; cultural heritage; educational strategies; sustainable education in knowledge and promotion as sources of professional development; theoretical identification of the types of educational strategies existing in the formation of sociocultural values in students; development of a pedagogical model for the formation of sociocultural values; description of the axiological reference in the engineering field.

**The applied value of the research** is justified by determining sociocultural values; establishing strategies for the formation of sociocultural values; validation of the components of the Pedagogical Model for the formation of sociocultural values of students of engineering study programs, developed and proposed for implementation; validation of the experimental results of the process of forming sociocultural values in students of engineering study programs based on the stages of the pedagogical experiment

**The scientific implementation** of the results was achieved through theoretical research presented at scientific conferences and experimental studies, conducted with students of engineering study programs at the Technical University of Moldova and the Free International University of Moldova.

## АННОТАЦИЯ

Виктория Данила

**Образовательные стратегии для формирования социокультурных ценностей у студентов инженерных программ, Докторская диссертация в области педагогических наук, Кишинев 2025**

**В структуру диссертации входят:** введение, три главы, общие выводы и рекомендации, библиография из 284 источников, аннотация (на румынском, английском, русском языках), список сокращений, 169 страницы, 22 таблица, 31 рисунков, 6 приложения. Публикации по теме диссертации: 19 научных работ.

**Ключевые слова:** социокультурные ценности, наследие, образовательные стратегии, университетское образование, устойчивое образование, университетская учебная программа, навыки, педагогическая модель, трансфер знаний.

**Цель исследования** определение теоретических ориентиров образовательных стратегий развития социокультурных ценностей, а также разработка и обоснование педагогической модели формирования социокультурных ценностей студентов инженерных специальностей.

**Задачи исследования:** изучение теоретических подходов к социокультурным ценностям путем выяснения понятий ценности, наследия, культуры, организационной культуры; концептуализация роли социокультурных ценностей как важнейшего фактора профессионального развития конкурентоспособных личностей в рамках устойчивого образования; разработка педагогической модели формирования социокультурных ценностей у студентов инженерных специальностей; использование результатов применения педагогической модели для формирования социокультурных ценностей у студентов инженерных специальностей; разработка общих выводов и методических рекомендаций по применению образовательных стратегий формирования социокультурных ценностей студентов инженерных специальностей.

**Научная новизна и оригинальность** заключается в концептуализации системы социокультурных ценностей, определяемых элементами наследия и культуры в профессиональной подготовке студентов инженерных образовательных программ; разработка и обоснование Педагогической Модели формирования социокультурных ценностей студентов инженерных образовательных программ в перспективе валоризации образовательных стратегий в процессе вузовской подготовки. **Полученные результаты, способствовавшие решению научной проблемы,** включают разработку комплексной концепции социокультурных ценностей в рамках программ инженерного образования на основе определения элементов наследия и культуры. Они были подтверждены теоретическими и эмпирическими исследованиями, что привело к разработке и обоснованию инновационной педагогической модели, способствующей формированию социокультурных ценностей учащихся.

**Теоретическая значимость** относится к теоретическому закреплению представлений о социокультурных ценностях; культурное наследие; образовательные стратегии; устойчивое образование; определение типов образовательных стратегий с применением в формировании социокультурных ценностей у обучающихся; описание справочника по формированию социокультурных ценностей для устойчивого образования студентов инженерных образовательных программ.

**Прикладная ценность** исследования обоснована определением социокультурных ценностей; апробация компонентов Педагогической модели формирования социокультурных ценностей студентов инженерных специальностей, разработанных и предлагаемых к внедрению; апробация экспериментальных результатов процесса формирования социокультурных ценностей у студентов инженерных специальностей на основе этапов педагогического эксперимента.

**Научная реализация результатов** достигнута посредством теоретических исследований, представленных на научных конференциях, и экспериментальных исследований, проведенных со студентами инженерных программ Технического университета Молдовы и Международного свободного университета Молдовы.



**DANIŁA VICTORIA**

**EDUCATIONAL STRATEGIES FOR TRAINING SOCIOCULTURAL  
VALUES IN ENGINEERING STUDENTS**

**Specialty 533.01 University Pedagogy**

Summary of the doctoral thesis **in Educational Sciences**

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