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**CONTINUING PROFESSIONAL TRAINING
OF TEACHING STAFF TO ENSURE TRANSFER
OF PEDAGOGICAL INNOVATIONS**

Specialty 531.01 – General Theory of Education

**SUMMARY
of the Doctoral Thesis in Educational Sciences**

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List of abbreviations:

EQF	–	The European Qualifications Framework
CERI	–	The Centre for Research and Innovation in Education
NQF	–	National Qualifications Framework
TOSMC	–	Teachers' Occupational Stress Management Competence
PITC	–	Pedagogical Innovations Transfer Competence
EG	–	Experimental group
CG	–	Control group
OECD	–	Organization for Economic Cooperation and Development
SDG	–	Sustainable Development Goals
SMART	–	Specific, Measurable, Achievable, Relevant and Time-bound
TOS	–	Teachers' Occupational Stress
IT	–	Innovation transfer
ICT	–	Information and Communication Technologies
TIM	–	Innovative Management Technology
PIT	–	Pedagogical Innovations Transfer
EU	–	European Union
GTC	–	Global Teacher Campus
GTI	–	Global Teaching InSights
TALIS	–	Teaching and Learning International Survey
TVET	–	Technical and Vocational Education and Training
UNESCO	–	United Nations Education, Science and Culture Organization

CONCEPTUAL FRAMEWORK OF THE RESEARCH

The relevance and significance of the chosen topic are confirmed by the global trend toward building an innovative society, which has become a major concern for the pedagogical community. The vector of innovation policy refers to identifying mechanisms for consolidating teachers' innovation competences as an indicator of the quality of educational services in general education. In this light, the paradigm of innovation acquires multiple dimensions, involving multi-, inter-, and transdisciplinary approaches, thereby demonstrating the necessity of exploring new knowledge in educational practice. In this regard, "the interest in innovation in education is generated by the multitude of changes occurring in the social sphere, the central idea being the profitability of innovative activity, while the analysis of the innovation process becomes essential in terms of identifying conceptual, methodological, and pragmatic reference points" [15, p. 14].

The challenge that underpins our research relates to the tendency observed within *the European Education Area to develop teachers' research and innovation competences* for science education through activities aimed at fostering students' key competences and through the exchange of good practices in educational innovation within general education. Scholars addressing the issue of innovation transfer identify conceptual and strategic contradictions between continuing professional development and the educational services market emerging in the context of contemporary education: the contradiction between the provisions of educational policy documents promoting research/innovation and the growing interest of teachers, on the other hand, insufficient efforts in implementing pedagogical innovations; as well as the mismatch between the current demands of the educational services market and the procedural difficulties of implementing pedagogical innovations at the level of management strategies for professional development for innovation [9, pp. 17–25].

In line with contemporary requirements for postmodern education, continuous professional development for the pedagogical innovation transfer (PIT) implies the development of pedagogical competences in innovation transfer. However, the scientific essence of continuous training for innovation transfer and the processual nature of PIT remain insufficiently clarified, which suggests that the *continuing professional development of teachers for the transfer of pedagogical innovations is, evidently, an absolutely necessary process*. The tendency to stimulate innovative activity has now become an imperative of the policies of countries engaged in building a knowledge-based society. Innovation has become the core of the *European 2030 Strategy*, as reflected by the European Commission

in Brussels (2019). The horizontal factors that support the transition toward sustainability in the Strategy are: education, science, technology, research, innovation, and digitalization – these also being the essential conditions for achieving a sustainable EU economy capable of meeting the SDGs [11, p. 22].

Within the framework of our research, the European Qualifications Framework (EQF) and the National Qualifications Framework (NQF) stipulate with reference to Level 8 qualification, particularly with regard to the “Responsibility and Autonomy” learning outcomes: *“Demonstrating a high level of authority, innovation, autonomy, scientific and professional integrity, as well as a sustained commitment to the development of new ideas or processes at the forefront of work or study contexts, including in research”* [10, p. 19].

The importance of studying the complex issue of teachers’ continuous professional training for the transfer of pedagogical innovations arises from the novelty of this topic, which has been only marginally explored in the existing research. In the Republic of Moldova, the implementation of the “knowledge triangle” – education, research, and innovation – constitutes an imperative for the country’s development [23, p. 2]. Educational institutions bear the responsibility of fostering and cultivating the spirit of innovation in the younger generation. From this perspective, the *National Program in the Fields of Research and Innovation for 2020-2023* emphasizes that *“it has become indisputable that research and innovation represent the driving force of economic growth and the source of solutions for overcoming the challenges faced by society. The level of development in these fields directly influences both the economic competitiveness of a country and the population’s resilience to the consequences of the changes that humanity is undergoing”* [18, p. 1].

Educational policy documents of the Republic of Moldova, mentioned above and those yet to be presented, contain provisions reflecting the necessity of continuous professional training for teachers in transferring pedagogical innovations: the *Education Code of the Republic of Moldova* [13]; the *Code on Science and Innovation of the Republic of Moldova* [12]; the *National Development Strategy “European Moldova 2030”* [25]; the *Education Development Strategy 2030* [24]; the *Regulation on Adult Continuing Education* [19]; the *Professional Competence Standards for Managerial Staff in General Education* [21]; the *Professional Competence Standards for Teaching Staff in General Education* [22]; and the *Regulation on the Attestation of Teaching Staff in General, Technical Vocational Education, and in Psychopedagogical Support Structures* [20].

Monitoring of research and innovation in the Republic of Moldova, according to the *Code on Science and Innovation of the Republic of Moldova*, is carried out hierarchically and gradually as follows: *the State*, represented by *Public Au-*

thorities, guarantees the functioning and development of research and innovation fields (art. 57); *the Parliament* adopts normative acts, approves distinct funding, and ratifies interstate treaties on cooperation in research and innovation (art. 58); *the Government* approves the National Program, sectoral strategies, and action plans for their implementation, and submits to the Parliament draft normative acts relating to research and innovation (art. 59); the *Central Specialized Body of the State* ensures the development of national policy in the fields of research and innovation (art. 60); *the National Agency for Research and Development* implements the State policy on research and innovation (art. 61); and *the Local Public Authorities* participate in drafting and promoting the State policy in the fields of research and innovation at the regional level (art. 62) [12]. In this regard, V. Cojocaru (2010) notes that “*solving the managerial pedagogical problems of innovation requires researching the essence, structure, classification, and particularities of innovation processes in the field of education*” [15, p. 12].

Framing the topic of research within international, national, inter- and transdisciplinary concerns. A Brief presentation of previous research findings

Internationally, the issue of teacher professional development for pedagogical innovation transfer (PIT) has been addressed by A. Huberman [17]; T. Wagner [29]; C. Bîrzea [8]; E. M. Rogers (2003) [34]; J. P. Bechard, P. Pelletier [31, pp. 1-29]; F. Cros [32, pp. 127-156]; I. B. Avakyan (2018) [35, p. 63-78]; B. A. Slastenin, L. C. Podymova (1997) [37], etc.

In the Republic of Moldova, research on PIT and on continuing professional training of teachers falls within the scientific interests of such researchers as V. Cojocaru [14], [15]; A. Afanas [1]; V. Andrițchi [2]; D. Antoci, M. Borozan [30, pp. 53-62]; T. Șova, V. Rusov, L. Cotos [27]; Vl. Guțu [16]; M. Vladu [28]; R. Bezede [7, pp. 125-141], and others.

Teaching staff in general education display a variety of reactions when faced with major organizational innovations, reactions that often depend on personal traits and on the managerial ability to design and carry out effectively this change process. For these reasons, educational institutions encounter multiple difficulties while implementing innovations: *resistance to change, lack of time, cumbersome management of financial and ICT resources, insufficient professional training, ineffective management, poor timing of implementation, and challenges in managing inadequate behaviour*. Teachers do engage in continuing professional development activities, yet there remain multiple shortcomings in current practices.

Based on the above, we may conclude that the importance of studying this issue arises from the **contradictions** recorded between:

- a) challenges of contemporary education regarding the renovation of the educational process and the organizational conditions of teacher training;

- b) increasing demands on teachers posed by the requirements of the modern school and the motivational resources of teachers for the transfer of pedagogical innovations;
- c) need to train the capacity to identify, select and implement pedagogical innovation and the insufficiency of studying the processes of this dimension of the professional culture of teachers;
- d) discrepancy between the effort made by teachers in implementing innovations and the demotivating salary reward.

The solutions identified in the specialized literature do not exhaust the scope of the issues at stake. From our perspective, considering the context, the following **research problem** can be outlined: *What are the theoretical and methodological benchmarks of continuing professional training of teaching staff to ensure transfer of pedagogical innovations in general education?*

Research object: the process of continuing professional training of general education teachers for the transfer of pedagogical innovations.

Research purpose: determining the theoretical and methodological foundations of continuing professional development of general education teachers for the transfer of pedagogical innovations.

Objectives of the investigation:

1. Providing a scientific interpretation of the evolution of operational concepts of research: *continuing professional development, teaching staff, innovation, pedagogical innovation, pedagogical innovations transfer, pedagogical innovations transfer competence* and international and national normative provisions regarding the continuous professional development of teachers for the transfer of pedagogical innovations.
2. Configuring the determinants of the transfer of pedagogical innovations, the pedagogical experiences and the principles for training the competence of transferring pedagogical innovations.
3. Conceptualizing of *the Theoretical Model of Pedagogical Innovations Transfer Competence* in terms of criteria, indicators, descriptors and values.
4. Diagnosing the levels of training in the transfer of pedagogical innovations to teachers.
5. Developing, implementing and experimentally validating *Program for continuing professional training of teachers in general education to ensure pedagogical innovations transfer*.
6. Formulating scientific conclusions and recommendations regarding the continuous professional training of teachers for the transfer of pedagogical innovations.

Research hypothesis: continuing development of teachers for the transfer of pedagogical innovations will be effective if the theoretical and methodolog-

ical benchmarks of continuing professional training of teaching staff to ensure transfer of pedagogical innovations in general education will be developed.

Synthesis of the research methodology and justification of the research methods selected to carry out the research: bibliographic study, theoretical modelling, pedagogical experiment, questionnaire, scientific observation, methods of mathematical processing of experimental data.

The novelty and scientific originality of research is outlined by: establishing conceptual benchmarks regarding the continuous professional training of teachers for the transfer of pedagogical innovations from the perspective of international and national normative provisions; scientific interpretation of the evolution of operational concepts of research: *continuing professional training, teaching staff, innovation, pedagogical innovation, innovations transfer*; conceptualization of *the Theoretical Model of Pedagogical Innovations Transfer Competence*; development of *the Evaluation Grid of pedagogical innovations transfer competence* based on the criteria, indicators, descriptors and values of the competence for the transfer of pedagogical innovations; developing the principles of training the competence for the transfer of pedagogical innovations, turning to advantage the process of experimental application of *the Program for continuing professional training of teachers in general education to ensure pedagogical innovations transfer*.

Research results that contribute to solving an important scientific problem in the field: the scientific interpretation of the evolution of the operational concepts of research: *continuing professional training, teaching staff, innovation, pedagogical innovation, pedagogical innovations transfer, pedagogical innovations transfer competence* and international and national normative provisions involving the continuing professional training of teachers for the transfer of pedagogical innovations; *Theoretical Model of Pedagogical Innovations Transfer Competence*; *Evaluation Grid of pedagogical innovations transfer competence*; criteria, indicators, descriptors and values of the competence for the transfer of pedagogical innovations; principles for the formation of the competence for the transfer of pedagogical innovations; *Program for the continuing professional training of teachers in general education to ensure pedagogical innovations transfer*.

The theoretical significance of the research results from: establishing international and national normative provisions that involve the continuing professional training of teachers for the transfer of pedagogical innovations; scientific interpretation of the evolution of operational concepts of research: *continuing professional training, teaching staff, innovation, pedagogical innovation, pedagogical innovations transfer, pedagogical innovations transfer competence and international and national normative provisions involving the continuing professional training of teachers for the transfer of pedagogical innovations*;

conceptualization of the *Theoretical Model of Pedagogical Innovations Transfer Competence*; development of the *Evaluation Grid of pedagogical innovations transfer competence* (criteria, indicators, descriptors and values) elucidating the principles for the formation of the competence for the transfer of pedagogical innovations; description of the determining factors of the transfer of pedagogical innovations; theoretical synthesis regarding the specifics of continuous training of teachers for the transfer of pedagogical innovations and formulation of new scientific conclusions regarding the continuous professional training of teachers for the transfer of pedagogical innovations.

The applicative value of the research consists in identifying and describing the most relevant pedagogical experiences in training teachers for the transfer of innovations; designing tools for (self-)assessment of the level of *Pedagogical Innovations Transfer Competence* (questionnaire, rating scale); developing, implementing and experimentally validating the *Program for continuing professional training of teachers in general education to ensure pedagogical innovations transfer*, turning to advantage the principles of training the competence for the transfer of pedagogical innovations in educational practice in general education, finding a positive dynamic in the training of the competence for the transfer of pedagogical innovations among teachers in general education and formulating significant scientific conclusions and recommendations for the management of innovation processes in general education of the Republic of Moldova.

The scientific problem solved by the research consists in configuring, theoretically substantiating and validating in educational practice the *Program for Continuing Professional Training of Teachers in General Education to Ensure Pedagogical Innovations Transfer* on an extended sample of experimental subjects, which contributed to: raising the awareness of the teaching staff of pedagogical innovations, raising their interest for their implementation in educational practice; designing and transferring pedagogical innovations; self-evaluation by turning to advantage the criteria, indicators and descriptors of the PITC by teachers and promoting their orientation towards creation, originality and innovation in the learning environment. The social impact of the research lies in the creation of a pedagogical community oriented towards research and innovation of education with effects on the development of investigative skills in students and with real potential for renovation of the educational process in accordance with the provisions of policy documents in the field of teacher professional training.

The implementation of scientific results has been carried out by disseminating them within the framework of national and international scientific and scientific and methodological events and experimentally validated in 5 high schools in the Republic of Moldova: *Lucian Blaga* Theoretical Lyceum from

Bălți, Public Institution *Nicolae Gogol* Theoretical Lyceum from Bălți, *Vasile Alecsandri* Theoretical Lyceum from Chișinău, *Petre Ștefănuță* Theoretical Lyceum from Ialoveni, Public Institution *Mihai Eminescu* Theoretical Lyceum from Fălești.

Publications related to the topic of the thesis: 15 scientific papers: 3 articles published in specialized scientific journals from the National Register of specialized journals included in the List of databases accepted by ANACEC, 12 articles in collections of international and national scientific events.

Thesis structure: introduction, 3 chapters, general conclusions and recommendations, bibliographic sources and annexes.

Key concepts: continuing professional training, teaching staff, innovation, pedagogical innovation, transfer of innovations.

THESIS CONTENT

The introduction includes a synthesis of scientific ideas regarding the topicality and importance of the research topic, description of the scientific context in the targeted field and argumentation of the research problem; the purpose and objectives of the research, the research methodology, scientific novelty and originality, the theoretical significance and applicative value of the investigation, the scientific problem solved in the research, the implementation and approval of the research results, the volume and structure of the thesis.

Chapter 1. “Theoretical foundations regarding continuing professional development of teachers and the transfer of innovations” describes the history of continuing professional development of teachers.

The phased analysis of this concept allows the author to highlight clear landmarks regarding changes in the perspective and functions assigned to continuing education in the process of professionalizing the teaching career.

Table 1. Evolution of continuing education at the international level

Stage	Period	Key features	Forms
Post-war stage: centralized training and formal professional development	1950–1970	- Expanding training networks to meet the massive demand for teachers - Emphasis on the transmission of standardized methodologies - Training planned and delivered by central authorities	- Regional centres for postgraduate training (e.g. France, Germany, UK) «In-service» courses at university level (e.g. the USA)
The diversification and decentralization stage	1970–1990	- Adaptation to national and institutional specificities - The emergence of alternative, local forms of training - Increasing the involvement of non-state actors (universities, NGOs)	- Communities of Practice (Finland) - Pedagogical mentoring - Professional development programs in schools (Canada)

Stage	Period	Key features	Forms
The stage of professionalization and academic recognition	1990–2010	• Recognition of continuing education as a validated professional process • Link to professional assessment and mobility • Introducing the portfolio and master's programs	• Master's programs dedicated to working professionals • Skills assessment and career plans • International partnerships for professional mobility
The stage of digitalization and reflective autonomy	2010–Present	• Digitalized, personalized and continuing training • Access through MOOCs, platforms, professional networks • Emphasis on educational leadership, reflective practices, and collaborative learning • Data-based policies and pedagogical evidence	• MOOCs and educational platforms (Coursera, ed. X, School Education Gateway) • Digital communities, professional learning networks, coaching, mentoring

This chapter also provides clear explanations of definitions, theories, models, paradigms and determining factors of the transfer of pedagogical innovations.

Pedagogical innovations transfer is a holistic process that is constantly evolving, depending on changes in society. Researcher Ph. Perrenoud proposes the classic scheme of innovation transfer (Figure 1).

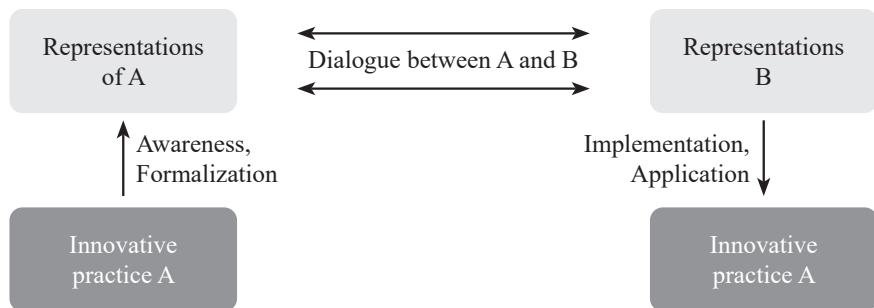


Figure 1. The “classical” scheme of innovation transfer [33, p. 19-27]

The scientific content of the chapter includes the analysis of the provisions of international (EU, Germany, France, Great Britain, Spain, Italy, Portugal, Romania) and national normative acts that involve the continuing professional training of teachers for PIT and develops a system of ideas regarding PIT management in general education, based on distinct stages.

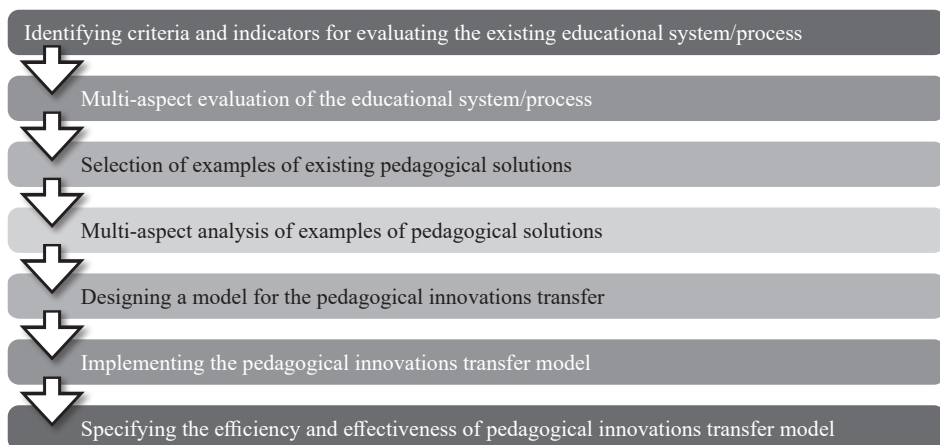


Figure 2. Algorithm for implementing pedagogical innovations transfer
(after P. I. Pidkasistyy and N. A. Vorobyeva) [36]

From the above, we can deduce that success in the transfer of pedagogical innovations depends on multiple factors, starting with pedagogical motivation, teacher’s creativity, the level of development of personal and professional qualities, and continuing with the influence of organizational culture, possible institutional barriers.

Chapter 2. “Methodology of continuing professional training to stimulate pedagogical innovations transfer” presents international and national pedagogical experiences with reference to the training of teachers for PIT in formal-nonformal and informal contexts.

Table 2. Formal-nonformal-informal in the professional training of teachers for the achievement of PIT

Formal education activities	Non-formal education activities	Informal education activities
General, vocational and higher education institutions		Scientific libraries
Public and private institutions or organizations that provide education services and vocational training programs, provisionally authorized or accredited		Scientific, scientific and methodological events
Enterprises or organizations that offer their own employees vocational training programs, provisionally authorized or accredited		Professional blogs
-	Scientific centres and laboratories	Scientific and/or professional volunteering
-	Institutions offering extracurricular activities	Individual research
-	Cultural institutions	-
-	Scientific and/or educational associations	-
-	Non-governmental organizations	-

The content of the chapter includes the description of the original elements of the research.

Theoretical model of pedagogical innovations transfer competence includes the following values structured into three components: the attitudinal component – motivation for the implementation of pedagogical innovations, availability for the transfer of pedagogical innovations, resilience in the process of transferring pedagogical innovations; the actional component – planning the transfer of pedagogical innovations, monitoring the implementation of pedagogical innovations, reflective estimation of the effects of the pedagogical innovations transfer; the cognitive component – scientific and methodological preparation for educational innovation.

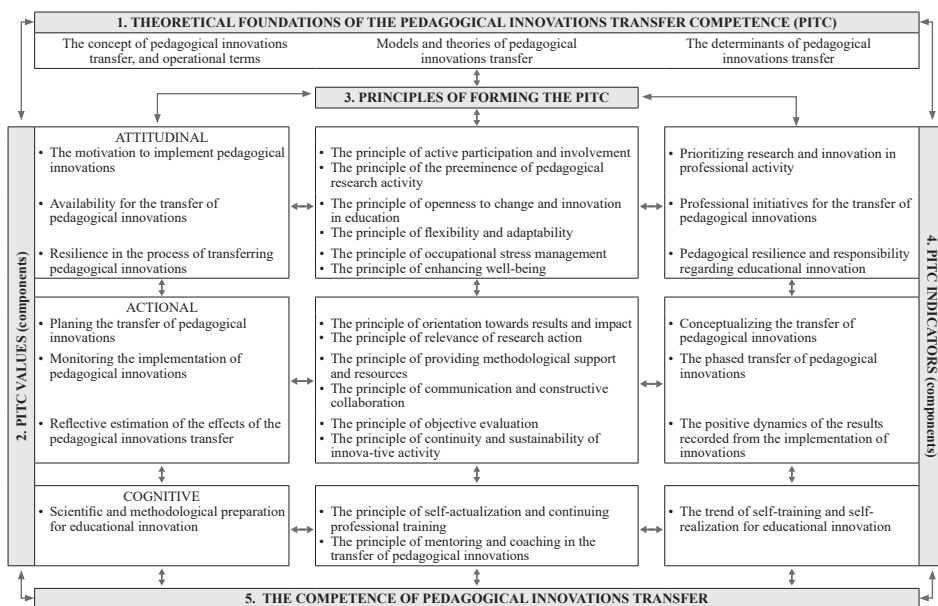


Figure 3. Theoretical model of pedagogical innovations transfer

Normative reference points for developing the Theoretical Model of PITC are determined by the qualification levels based on learning outcomes, held by teachers, according to the EQF and the NQF.

The methodological reference points used to develop the PITC Theoretical Model are based on theories and concepts related to innovations, innovation transfer, and the profile of the innovative teacher (qualities, traits) promoted by well-known researchers in the field.

Evaluation grid for the transfer of pedagogical innovations competence proposes an evaluative framework structured on three major components – at-

titudinal, actional and cognitive – each detailed by specific criteria, behavioural indicators, qualitative descriptors and values expressed in professional personality traits. This holistic approach allows us to identify the real level of motivation, availability, resilience, planning, monitoring, reflective estimation and scientific and methodological preparation for the transfer of pedagogical innovations.

Principles of developing the competence of transferring pedagogical innovations were elucidated following the analysis of the principles of researchers in economics, psychopedagogy (English-speaking, Russian, Romanian space), including from the Republic of Moldova. We believe that PITC training will be effective if the following principles are respected: active participation and involvement, the pre-eminence of pedagogical research activity, openness to change and innovation in education, flexibility and adaptability, occupational stress management, enhancement of well-being, orientation towards results and impact, relevance of research action, provision of methodological support and resources, communication and constructive collaboration, objective evaluation, continuity and sustainability of innovation activity, self-actualization and continuing professional training, mentoring and coaching in the transfer of pedagogical innovations.

Chapter 3. “The experimental framework of continuing professional training of teachers to ensure the transfer of innovations in general education” presents data resulting from the experimental study to determine the level of PITC training among teachers in general education.

The experimental sample was representative, consisting of 244 subjects (teachers), divided into two independent groups of equal size: the experimental group (EG) – 122 subjects – and the control group (CG) – 122 subjects.

Table 3. Design of experimental research

Components	Attitudinal			Actional			Cognitive
Research variables	Motivation for implementing pedagogical innovations	Availability for the transfer of pedagogical innovations	Resilience in the process of pedagogical innovations transfer	Planning the transfer of pedagogical innovations	Monitoring the implementation of pedagogical innovations	Reflexive estimation of the effects of pedagogical innovations transfer	Scientific and methodological preparation for educational innovation
Sample	Total 244 subjects, of which EG – 122 subjects, CG – 122 subjects						
Research methodology							
Experimental stages	Achievement period	Research methods and tools					
Finding	March 2022	1) Teacher opinion survey on barriers in the PIT process					

Components	Attitudinal			Actional			Cognitive
Research variables	Motivation for implementing pedagogical innovations	Availability for the transfer of pedagogical innovations	Resilience in the process of pedagogical innovations transfer	Planning the transfer of pedagogical innovations	Monitoring the implementation of pedagogical innovations	Reflexive estimation of the effects of pedagogical innovations transfer	Scientific and methodological preparation for educational innovation
Finding	October 2022 – February 2023		2) Self-assessment questionnaire on the level of PITC 3) Statistical methods and tools: Student's <i>t</i> -test; 4 standard tests (Kolmogorov–Smirnov, Kolmogorov–Smirnov (Lilliefors), Shapiro – Wilk and Anderson- Darling); Levene's test, Brown- Forsythe test.				
Training	March 2023 – March 2024		4) Set of 10 forms for observing the PITC training process. 5) Continuing professional training program for general education teachers to ensure pedagogical innovations transfer.				
Control	April 2024 – May 2024		6) PITC training level evaluation scale 7) Statistical methods and tools: Student's <i>t</i> -test; 4 standard tests (Kolmogorov–Smirnov, Kolmogorov–Smirnov (Lilliefors), Shapiro – Wilk and Anderson– Darling); Levene's test, Brown- Forsythe test.				

At the **finding stage** of the pedagogical experiment, we **aimed to** determine the level of PITC. The analysis of the results recorded by teachers from EG and CG highlighted insignificant differences between the subject groups.

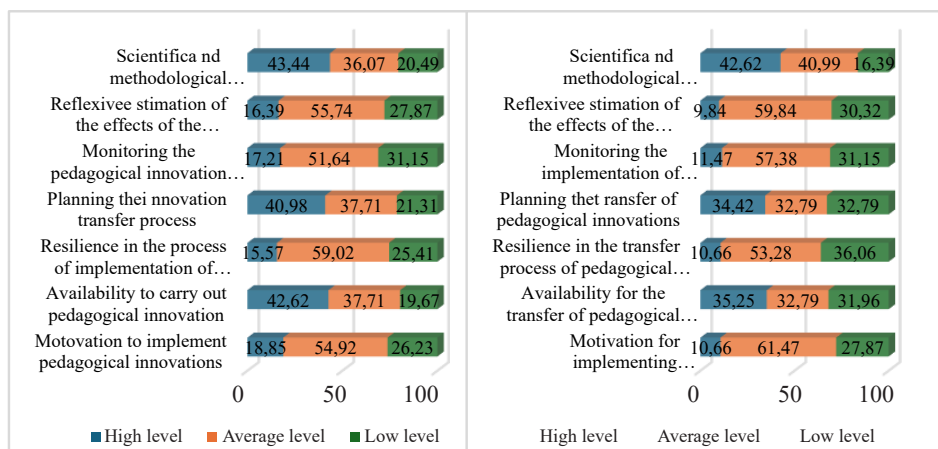


Figure 4. Levels of formation of PITC values (finding, EG-CG)

In Figure 5 we generalized the data and presented the level of PITC.

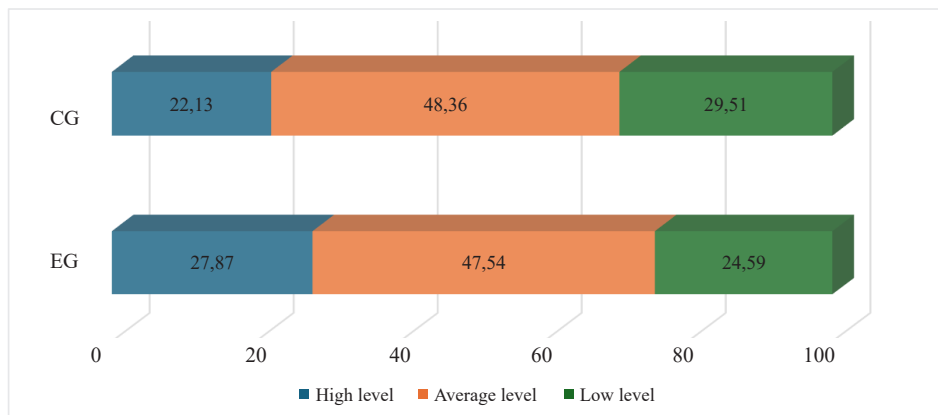


Figure 5. Levels of PITC training among teachers (finding, EG-CG)

The average level of training of PITC demonstrated a professional lifestyle open to change and acceptance of innovations in the educational field.

The results obtained during the diagnostic phase of the pedagogical experiment supported the theoretical and methodological framework of the study. Consequently, they validated the need for a pedagogical intervention focused on developing teachers' competence in integrating educational innovations. Systematic monitoring was identified as the most effective method for optimizing this process within general education.

At the training stage of the pedagogical experiment, we aimed to develop, implement and experimentally validate the *Continuous Professional Training Program for General Education Teachers to ensure pedagogical innovations transfer*.

The methodological reference points of the training program have been deduced from the values of the pedagogical innovations transfer competence, promoted by the international, national and institutional normative and regulatory documents described in the introduction to the thesis.

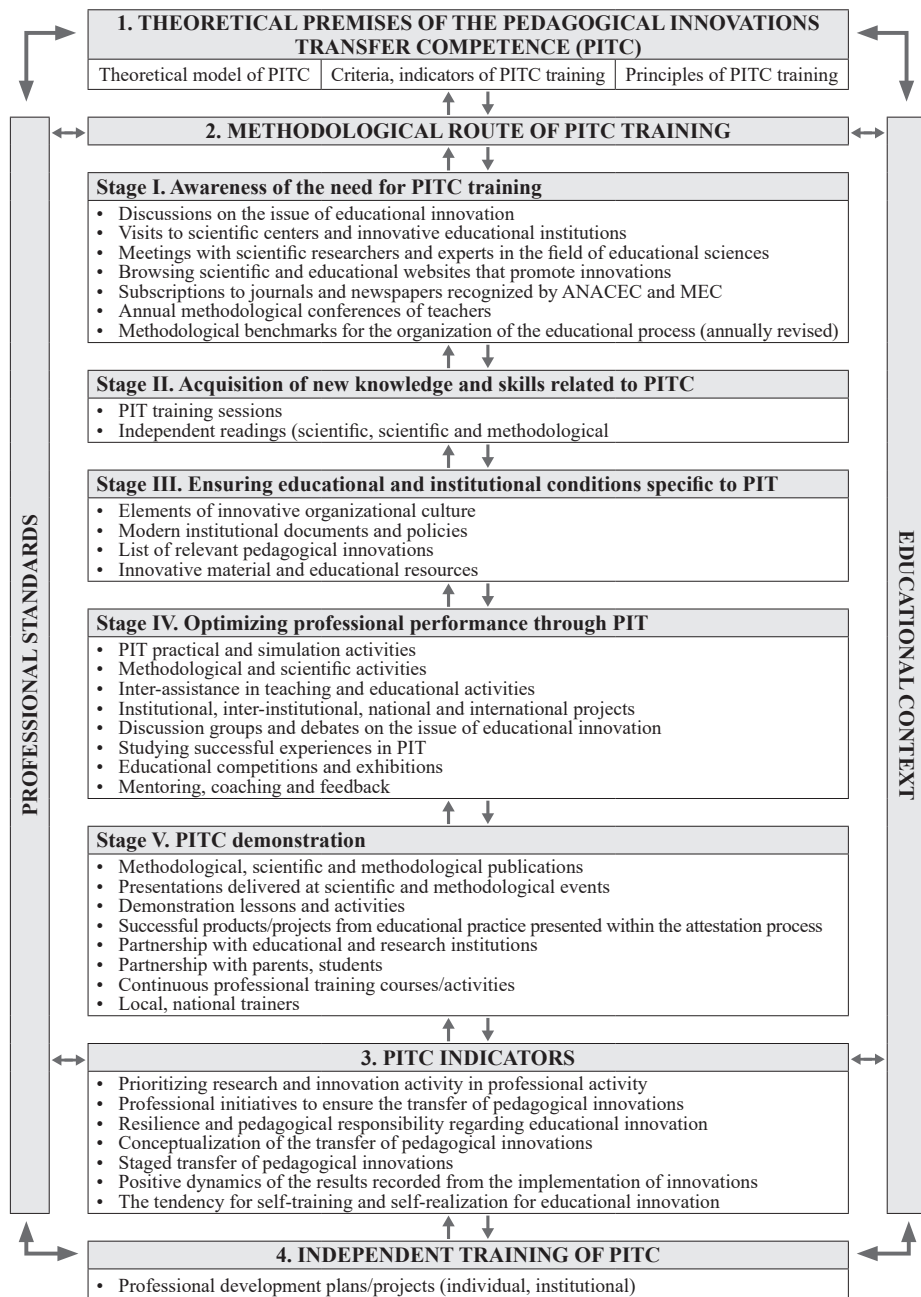


Figure 6. Program for Continuing Professional Training of Teachers in General Education to Ensure Pedagogical Innovations Transfer

The topics for PITC training sessions have been elaborated by correlation with the research variables. The total number of hours and the schedule of the PITC training sessions were coordinated with the managers of the educational institutions involved in the pedagogical experiment.

Table 4. Topics of PITC training sessions

No. d/o	Research variables	Topics of PITC training sessions	No. of hours	
			DC	IS
Attitudinal component			18	72
1.	Motivation for implementing pedagogical innovations	Motivational factors of pedagogical innovations transfer	6	24
2.	Availability for the transfer of pedagogical innovations	Professional openness to change and innovation in education	6	24
3.	Resilience in the process of pedagogical innovations transfer	Emotional balance and positive orientation of innovative teaching staff	6	24
Actional component			18	72
4.	Planning the transfer of pedagogical innovations	The path of pedagogical innovation	6	24
5.	Monitoring the implementation of pedagogical innovations transfer	Strategies for implementing pedagogical innovations	6	24
6.	Reflexive estimation of the effects of the transfer of pedagogical innovations	The effects of the transfer of pedagogical innovations	6	24
Cognitive component			6	24
7.	Scientific and methodological preparation for educational innovation	Professional self-actualization for educational innovation	6	24
TOTAL			42	168
			210	

By the end of the training activities, the teachers involved in the pedagogical experiment developed *individual professional development plans*, which aimed to continuously improve pedagogical skills, adapt to new trends in education and integrate innovations into the educational process.

At the **control stage** of the pedagogical experiment, we **aimed** to conduct a comparative study of the level of PITC a result of the implementation of *the Continuing Professional Training Program for General Education Teachers to Ensure Pedagogical Innovations Transfer*.

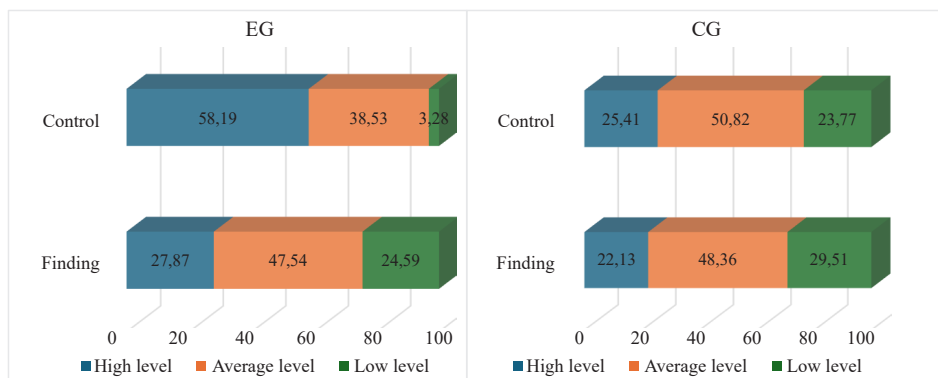


Figure 7. Comparative results of PITC training levels among teachers (finding-control, EG-CG)

The descriptive difference between the two stages indicates an increase in the average scores after the intervention (Table 5). To assess whether this difference is statistically significant, the paired samples *t*-test was applied.

Table 5. Descriptive statistics of the experimental group (finding and control)

Indicator	GE (finding)	GE (control)
Average	2.03	2.55
Fashion	2	3
Standard deviation	0.73	0.56
Variant	0.53	0.32
Asymmetry coefficient	-0.05	-0.76
Courtesy	-1.08	-0.44

The positive dynamics of experimental data demonstrate the effectiveness of the *Continuing Professional Training Program for General Education Teachers to Ensure Pedagogical Innovations Transfer*.

GENERAL CONCLUSIONS AND RECOMMENDATIONS

1. The theoretical and applied study presented in this thesis provides arguments regarding the management of continuous professional development of teachers for PIT and allows for an assessment of the achievement of the research purpose and objectives. The scientific approach, as projected, implemented, and elucidated in the study, establishes the theoretical and methodological foundations of continuous professional development of teachers in general education for PIT-foundations that represented the core aim of the research.

2. The analysis and synthesis of theoretical precepts on PIT management enabled a scientific interpretation of the evolution of the operational concepts of the investigation (continuing professional training, teacher, innovation, pedagogical innovation, pedagogical innovations transfer competence, transfer of innovations) (Chapter 1, 1.1), as well as a description of international and national normative provisions concerning continuous professional development of teachers to ensure pedagogical innovations transfer (Chapter 1, 1.2) [5, pp. 22–36]. The arguments provided confirm the importance of this scientific inquiry and justify the necessity of determining the theoretical and methodological foundations of continuing professional development of teachers in general education to ensure PIT. They also emphasize the need to identify a coherent system of pedagogical and managerial actions aimed at developing PIT competence (PITC), while encouraging the discovery of new research dimensions in this area.
3. Based on the analysis of prior research, the study identified and described the determining factors of pedagogical innovation transfer [4, pp. 7–13]: *exogenous factors of resistance to innovation* (environment resistance to change, incompetence of external agents, lack of teachers' trust, insufficient connection between theory and practice, inadequate scientific grounding, and conservatism); *endogenous factors of resistance* (unclear objectives, lack of incentives for innovators, uniformity of approach, compulsory nature of education, insufficient investment in research, problems in measuring results, lack of models, passivity); *restrictive factors of resistance* (structuring of staff and services, hierarchies and status differences, refusal motivated by the desire to maintain equilibrium, refusal based on acquired competence, refusal due to conformity and social ignorance, and refusal caused by lack of information) (Chapter 1, 1.3).
4. From the perspective of the challenges generated by teachers' insufficient preparation for PIT, the analysis of national and international pedagogical experiences regarding teacher training for PIT (Chapter 2, 2.1), together with theoretical and methodological documentation, led to the development of the *Theoretical Model of Pedagogical Innovations Transfer Competence*, including criteria, indicators, descriptors, and values of PITC (summarized in the *Evaluation Grid of pedagogical innovations transfer competence* (Chapter 2, 2.2) – as well as the principles underpinning PITC development (Chapter 2, 2.3) [6, pp. 151-165].
5. The pedagogical experiment, conducted on a representative sample of 244 subjects (teachers in general education) divided into two independent groups, generated scientific conclusions on the challenges of continuing profession-

al development of teachers for PIT. The study highlighted *the defective connection between the scientific community and educational institutions, which hinders the transfer of pedagogical innovations, the adoption of new teaching technologies by teachers, and the creation of employment opportunities* [3, pp. 16 -18]. The research underlined the importance of collaboration between teaching and managerial staff, university professors, and trainers – collaboration grounded in innovative ideas, professionalism, openness to change, and commitment to professional and educational responsibilities. To this end, a specific research methodology was elaborated and applied, facilitating the diagnosis of three levels of PITC development (Chapter 3, 3.1). The managerial approach to fostering innovative orientation in pedagogical practice, within current conditions of societal, cultural, and educational development, is thus determined by the need for continuous professional development of teachers for PIT. This requires the renewal of instructional design, the innovative use of educational technologies in general education institutions, and the amplification of teachers' motivation to apply pedagogical innovations.

6. For the training stage of the experiment, the *Continuing Professional Training Program for Teachers in General Education to Ensure the Transfer of Pedagogical Innovations* [26, pp. 59-68] was elaborated, implemented, and experimentally validated. It was theoretically grounded in the *Theoretical Model of PITC, the Evaluation Grid of PITC, and the principles of PITC development*. The comparative evaluation of data from the control stage of the pedagogical experiment confirmed the research hypothesis, attesting to the effectiveness of continuous professional development activities for teachers in the field of PIT (Chapter 3, 3.2, 3.3).
7. ***The scientific problem resolved by this research*** lies in the design, theoretical substantiation, and validation in educational practice of a *Continuing Professional Training Program for Teachers in General Education to Ensure Pedagogical Innovations Transfer*, applied to an extended sample of experimental subjects. This contributed to: raising teachers' awareness of pedagogical innovations and fostering interest in their implementation in educational practice; the design and transfer of pedagogical innovations; teachers' self-assessment based on PITC criteria, indicators, and descriptors; promoting creativity, originality, and innovation in the learning environment. The social impact of the research resides in the creation of a pedagogical community oriented toward research and innovation in educational practice, with developmental effects on students' investigative competences and a real potential for renewing the educational process, in line with policy documents on teacher professional development.

RECOMMENDATIONS:

- *To researchers in the field:* investigation of the impact of national and international policies on the implementation of the “knowledge triangle” (education-research-innovation) in the Republic of Moldova.
- *To program designers in teacher training:* integration of content related to pedagogical innovation transfer (PIT) into the curricula and professional training courses; development of partial qualification/micro-credit programs (5 ECTS/10 ECTS) addressing PIT, in line with the postmodern educational context.
- *To school leadership and management:* ensuring methodological support and the necessary resources for PIT in educational practice; creating and maintaining a stimulating and collaborative environment for the continuous development of the school’s human capital, with a view to promoting innovation; identifying and supporting individuals capable of generating innovative ideas; implementing mechanisms for objective monitoring and evaluation of PIT within the educational institution; ensuring continuity and sustainability of innovative activities; and promoting mentorship and coaching in the PIT process.
- *To teaching staff:* identifying individual continuous professional development needs and coordinating them with school management; managing professional growth in accordance with professional competence standards; and actively engaging in pedagogical innovation within the education system.

Directions for Further Research. The study opens perspectives for deepening and expanding the management of continuous professional development of teachers for pedagogical innovation transfer:

- Studying the psychosocial dimension of teachers’ resistance to innovations;
- Application of the Theoretical Model of Pedagogical Innovations Transfer Competence in other national contexts and across different educational systems;
- Establishing connections between PITC and digital, communication, educational leadership competences;
- Exploring digital technologies in developing PITC among teachers in general and higher education;
- Organizational models for fostering innovation in schools;
- Ensuring the durability and sustainability of innovation transfer into teaching practice;
- Strategies for personalizing continuing professional development programs according to the innovative axiological profile of teachers;
- Considering the impact of inter-institutional collaboration (general and higher education) on the effective transfer of pedagogical innovations;

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Summaries in scientific collections

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ADNOTARE BALAN Aurelia

„Formarea profesională continuă a cadrelor didactice pentru transferul de inovații pedagogice”

Structura tezei include: introducere, trei capitole, concluzii generale și recomandări, bibliografie din 250 de surse, adnotare (română, engleză), concepte-cheie în limbile română și engleză, lista abrevierilor, 144 pagini de text de bază, 38 de tabele, 29 figuri, 15 anexे.

Publicații la tema tezei: 15 lucrări științifice: 3 articole în reviste științifice de specialitate din Registrul Național al revistelor de profil incluse în Lista bazelor de date acceptate de către ANACEC, 12 articole în culegeri ale manifestărilor științifice internaționale și naționale.

Concepte-cheie: formare profesională continuă, cadru didactic, inovație, inovație pedagogică, transfer de inovații pedagogice, competență de transfer al inovațiilor pedagogice.

Domeniul de studiu: Teoria generală a educației.

Scopul cercetării: determinarea fundamentelor teoretice și metodologice ale formării profesionale continue a cadrelor didactice din învățământul general pentru transferul de inovații pedagogice.

Obiectivele investigației: interpretarea științifică a evoluției conceptelor operaționale ale cercetării: *formare profesională continuă, cadru didactic, inovație, inovație pedagogică, transfer de inovații pedagogice, competență de transfer al inovațiilor pedagogice* și a prevederilor normative internaționale și naționale referitoare la formarea profesională continuă a cadrelor didactice pentru transferul de inovații pedagogice; configurarea factorilor determinanți ai transferului de inovații pedagogice, a experiențelor pedagogice și a principiilor de formare a competenței de transfer al inovațiilor pedagogice; conceptualizarea *Modelului teoretic al competenței de transfer al inovațiilor pedagogice* în termeni de criterii, indicatori, descriptori și valori; diagnosticarea nivelurilor de formare a competenței de transfer al inovațiilor pedagogice la cadrele didactice; elaborarea, implementarea și validarea experimentală a *Programului de formare profesională continuă a cadrelor didactice din învățământul general pentru transferul de inovații pedagogice*; formularea concluziilor științifice și a recomandărilor referitoare la formarea profesională continuă a cadrelor didactice pentru transferul de inovații pedagogice.

Noutatea și originalitatea științifică a cercetării se conturează din: stabilirea reperelor conceptuale privind formarea profesională continuă a cadrelor didactice pentru TIP din perspectiva prevederilor normative internaționale și naționale; interpretarea științifică a evoluției conceptelor operaționale ale cercetării: *formare profesională continuă, cadru didactic, inovație, inovație pedagogică, transfer de inovații pedagogice, competență de transfer al inovațiilor pedagogice*; conceptualizarea *Modelului teoretic al competenței de transfer al inovațiilor pedagogice*; elaborarea *Grilei de evaluare a competenței de transfer al inovațiilor pedagogice în baza criteriilor, indicatorilor, descriptorilor și valorilor* competenței de transfer al inovațiilor pedagogice; elaborarea principiilor de formare a competenței de transfer al inovațiilor pedagogice valorificate în procesul aplicării experimentale a *Programului de formare profesională continuă a cadrelor didactice din învățământul general pentru transferul de inovații pedagogice*.

Rezultate obținute ce contribuie la soluționarea unei probleme științifice importante în cercetare se referă la: interpretarea științifică a evoluției conceptelor operaționale ale cercetării – *formare profesională continuă, cadre didactice, inovație, inovație pedagogică, transfer de inovații pedagogice, competență de transfer al inovațiilor pedagogice* și a prevederilor normative internaționale și naționale care implică formarea profesională continuă a cadrelor didactice pentru transferul de inovații pedagogice; *Modelul teoretic al competenței de transfer al inovațiilor pedagogice*; *Grila de evaluare a competenței de transfer al inovațiilor pedagogice*; criteriile, indicatorii, descriptorii și valorile competenței de transfer al inovațiilor pedagogice; principiile de formare a competenței de transfer al inovațiilor pedagogice; *Programul de formare profesională continuă a cadrelor didactice din învățământul general pentru transferul de inovații pedagogice*.

Semnificația teoretică a cercetării rezultă din: stabilirea prevederilor normative internaționale și naționale care implică formarea profesională continuă a cadrelor didactice pentru transferul de inovații pedagogice; interpretarea științifică a evoluției conceptelor operaționale ale cercetării – *formare profesională continuă, cadru didactic, inovație pedagogică, transfer de inovații pedagogice*; conceptualizarea *Modelului teoretic al competenței de transfer al inovațiilor pedagogice*; elaborarea *Grilei de evaluare a competenței de transfer al inovațiilor pedagogice* (criterii, indicatori, descriptori și valori); elucidarea principiilor de formare a competenței de transfer al inovațiilor pedagogice, descrierea factorilor determinanți ai transferului de inovații pedagogice; sinteza teoretică privind specificul formării continue a cadrelor didactice pentru transferul de inovații pedagogice și formularea concluziilor științifice noi referitoare la formarea profesională continuă a cadrelor didactice pentru transferul de inovații pedagogice.

Valoarea aplicativă a investigației constă în: identificarea și descrierea celor mai relevante experiențe pedagogice de formare a cadrelor didactice pentru transferul de inovații; conceperea instrumentelor de (auto)evaluare a nivelului de formare a competenței de transfer al inovațiilor pedagogice (chestionar, scală de evaluare); elaborarea, implementarea și validarea experimentală a *Programului de formare profesională continuă a cadrelor didactice din învățământul general pentru transferul de inovații pedagogice*, valorificarea în practica educațională din învățământul general a principiilor de formare a competenței de transfer al inovațiilor pedagogice, constatarea unei dinamicii pozitive în formarea competenței de transfer al inovațiilor pedagogice la cadrele didactice din învățământul general și formularea unor concluzii științifice și recomandări semnificative pentru managementul proceselor inovative în învățământul general din Republica Moldova.

Implementarea rezultatelor științifice a fost realizată prin diseminarea acestora în cadrul manifestărilor științifice și științifico-metodice naționale și internaționale și validate experimental în 5 licee din Republica Moldova: Liceul Teoretic „Lucian Blaga” din municipiul Bălți, Instituția Publică Liceul Teoretic „Nicolae Gogol” din municipiul Bălți, Liceul Teoretic „Vasile Alecsandri” din municipiul Chișinău, Liceul Teoretic „Petre Țefănucă” din orașul Ialoveni, Instituția Publică Liceul Teoretic „Mihai Eminescu” din orașul Fălești.

ANNOTATION

BALAN Aurelia

“Continuing Professional Training of Teaching Staff to Ensure Transfer of Pedagogical Innovations”

The structure of the thesis includes: introduction, three chapters, general conclusions and recommendations, bibliography of 250 sources, annotation (Romanian, English), key concepts in Romanian and English, list of abbreviations, 144 pages of basic text, 38 tables, 29 figures, 15 annexes.

Publications on the topic of the thesis: 15 scientific papers: 3 articles in specialized scientific journals from the National Register of specialized journals included in the List of databases accepted by ANACEC, 12 articles in collections of international and national scientific events.

Key concepts: continuing professional training, teachers, innovation, pedagogical innovation, pedagogical innovations transfer, pedagogical innovations transfer competence.

Field of study: General Theory of Education.

Research purpose: determining the theoretical and methodological foundations of continuing professional training of general education teachers to ensure the transfer of pedagogical innovations.

Objectives of the investigation: scientific interpretation of the evolution of operational concepts of research: *continuing professional training, teaching staff, innovation, pedagogical innovation, transfer of pedagogical innovations, competence of transfer of pedagogical innovations* and international and national normative provisions relating to the continuing professional training of teachers for the transfer of pedagogical innovations; configuring the determinants of the transfer of pedagogical innovations, the pedagogical experiences and the principles for training the competence of transferring pedagogical innovations; conceptualizing of the *Theoretical Model of Pedagogical Innovations Transfer Competence* in terms of criteria, indicators, descriptors and values; diagnosing the levels of training in the transfer of pedagogical innovations to teachers; developing, implementing and experimentally validating the *Program for continuing professional training of teachers in general education to ensure pedagogical innovations transfer*; formulating scientific conclusions and recommendations regarding the continuous professional training of teachers for the transfer of pedagogical innovations.

The novelty and scientific originality of the research is outlined by: establishing conceptual benchmarks regarding the continuous professional training of teachers for the transfer of pedagogical innovations from the perspective of international and national normative provisions; scientific interpretation of the evolution of operational concepts of research: *continuing professional training, teaching staff, innovation, pedagogical innovation, innovations transfer*; conceptualization of the *Theoretical Model of Pedagogical Innovations Transfer Competence*; development of the *Evaluation Grid of pedagogical innovations transfer competence* based on the criteria, indicators, descriptors and values of the competence for the transfer of pedagogical innovations; developing the principles of training the competence for the transfer of pedagogical innovations, turning to advantage the process of experimental application of the *Program for continuing professional training of teachers in general education to ensure pedagogical innovations transfer*.

Research results that contribute to solving an important scientific problem in the field: the scientific interpretation of the evolution of the operational concepts of research: *continuing professional training, teaching staff, innovation, pedagogical innovation, pedagogical innovations transfer, pedagogical innovations transfer competence* and international and national normative provisions involving the continuing professional training of teachers for the transfer of pedagogical innovations; *Theoretical Model of Pedagogical Innovations Transfer Competence*; *Evaluation Grid of pedagogical innovations transfer competence*; criteria, indicators, descriptors and values of the competence for the transfer of pedagogical innovations; principles for the formation of the competence for the transfer of pedagogical innovations; *Program for the continuing professional training of teachers in general education to ensure pedagogical innovations transfer*.

The theoretical significance of the research results from: establishing international and national normative provisions that involve the continuing professional training of teachers for the transfer of pedagogical innovations; scientific interpretation of the evolution of operational concepts of research: *continuing professional training, teaching staff, innovation, pedagogical innovation, pedagogical innovations transfer, pedagogical innovations transfer competence* and international and national normative provisions involving the continuing professional training of teachers for the transfer of pedagogical innovations; conceptualization of the *Theoretical Model of Pedagogical Innovations Transfer Competence*; development of the *Evaluation Grid of pedagogical innovations transfer competence* (criteria, indicators, descriptors and values) elucidating the principles for the formation of the competence for the transfer of pedagogical innovations; description of the determining factors of the transfer of pedagogical innovations; theoretical synthesis regarding the specifics of continuous training of teachers for the transfer of pedagogical innovations and formulation of new scientific conclusions regarding the continuous professional training of teachers for the transfer of pedagogical innovations.

The applicative value of the research consists in identifying and describing the most relevant pedagogical experiences in training teachers for the transfer of innovations; designing tools for (self-)assessment of the level of *Pedagogical Innovations Transfer Competence* (questionnaire, rating scale); developing, implementing and experimentally validating the *Program for continuing professional training of teachers in general education to ensure pedagogical innovations transfer*, turning to advantage the principles of training the competence for the transfer of pedagogical innovations in educational practice in general education, finding a positive dynamic in the training of the competence for the transfer of pedagogical innovations among teachers in general education and formulating significant scientific conclusions and recommendations for the management of innovation processes in general education of the Republic of Moldova.

The implementation of scientific results has been carried out by disseminating them within the framework of national and international scientific and scientific and methodological events and experimentally validated in 5 high schools in the Republic of Moldova: *Lucian Blaga* Theoretical Lyceum from Bălți, *Public Institution Nicolae Gogol* Theoretical Lyceum from Bălți, *Vasile Alecsandri* Theoretical Lyceum from Chișinău, *Petre Ștefănuță* Theoretical Lyceum from Ialoveni, *Public Institution Mihai Eminescu* Theoretical Lyceum from Fălești.

BALAN Aurelia

**CONTINUING PROFESSIONAL TRAINING OF TEACHING STAFF
TO ENSURE TRANSFER OF PEDAGOGICAL INNOVATIONS**

Specialty 531.01 – General Theory of Education

SUMMARY

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