**STATE PEDAGOGICAL UNIVERSITY "ION CREANGA"
FROM CHISINAU**

With the title of manuscript
CZU: 37.015:64 (043.2) =111

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POTENTIAL OF TECHNOLOGY EDUCATION IN TRAINING OF PREADOLESCENTS FOR THE ROLE OF RESPONSIBLE PARENT

Specialty: 531.01. – General theory of education

SUMMARY

of the doctoral thesis in Education Sciences

Chisinau, 2023

The thesis was elaborated within the Education Sciences Doctoral School, State Pedagogical University "Ion Creanga" from Chisinau

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The public defense of the thesis will take place at 28 th february, time 14.00 within the "Ion Creanga" State Pedagogical University from Chisinau, study block 2, Office of the "Educational Sciences" Doctoral School, I. Creangă str. 1, MD-2069

The doctoral thesis and the summary can be consulted at the library of State Pedagogical University "Ion Creanga" (www.upsc.md) and on the website of ANACEC (www.cnaa.md)

The summary was sent to 23.01.2023

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CONTENT

LIST OF ABBREVIATIONS

In Romanian language:

CNC	– National Curriculum Council
ECD	– Criterion evaluation through descriptors
ex.	– example
GC	– Control Group
GE	– Experimental Group
MEC	– Ministry of Education and Research of the Republic of Moldova
ME	– Ministry of Education from Romania
SDG	– Sustainable Development Goals
NGO	– Non-Governmental Organization
PFAV	– Life Skills Training Program
PIR	– Project for Rural Education
rpr	– responsible parent role
UNICEF	– United Nations International Children's Emergency Fund
UPSC	– State Pedagogical University "Ion Creanga" from Chisinau
USARB	– State University "Alecu Russo" from Balti

In foreign language:

ITEA	– International Technology Education Association
UNESCO	– United Nations Educational, Scientific and Cultural Organization

CONCEPTUAL REFERENCES OF THE RESEARCH

The actuality of the theme results from the complexity of educational approaches regarding technological education and the training in this context of preadolescent skills necessary for the effective exercise of the role of responsible parent. Determined by the results of technological processes, the world status of technological culture reflects the values of modernity. Globally, the education has a responsibility to adapt to "the challenges and aspirations of the 21st century, to promote the right kinds of values and skills" and is a top priority because it is "a basic human right and the foundation on which it operates sustainable development" [26, p. 7]. Among the Sustainable Development Goals is ODD 4–UNESCO “Quality Education”, which helps students “to recognize the intrinsic value of education, to analyze and identify their own learning needs necessary for personal development; to recognize the importance of their own skills to improve their lives for when they become adults" [25].

The World Association for Technological Education ITEA (USA) has defined the notion of "technologically competent person"; *The Recommendation of the European Parliament and the Council of European Union* on key competences from the perspective of lifelong learning (2006/962/EC) outlines a "European training profile" for graduates of compulsory education; *The Committee of the Regions* highlights a pilot initiative "Youth on the Move" with the aim of "strengthening performance and raising the general level of quality at all levels of education" (2010) [23]; *The Bruges Communiqué* presents a vision for the education and training of students who "have the opportunity to complete and strengthen their competences for the management of everyday life" are policy documents containing indicators on learning technology education [22].

The educational approaches proposed through the existing curriculum in the discipline "Technological Education" are correlated with the recommendations of the documents from the international, European, national level; updates all important changes at the national level: *Education Code of the Republic of Moldova (2014); National Development Strategy "Moldova 2030", National Strategy for the Sustainable Development of Romania 2030, Horizons 2013–2020–2030; The intersectoral strategy for the development of parenting skills and competences for the years 2016–2022* and other documents that provide through the education system "the preparation of the young generation for the challenges of the future by encouraging innovation, meritocracy, constructive critical thinking, curiosity, conduct and emancipation" [26, p. 22]. From the same perspective, the 2030 Agenda stipulates guaranteeing quality education and promoting lifelong learning opportunities for all students [Ibidem 24].

The importance of studying the training of preadolescents for the role of a responsible parent results from objective 5 of *Europe 2020 Strategy* carried out through the *Framework Program for research and innovation of the European Union "Horizon 2020"*, which leads to the idea of "information and awareness regarding the fair sharing of responsibilities within household and family"; by extrapolation, young

people will be trained for the responsibilities they will have when they become adults [19], [Ibidem 26, p. 38].

The significance of technology education regarding youth responsibility emerges from the definition developed by *UNESCO, 1985* in which "Technology uses knowledge, tools and skills to increase human potential, to solve practical problems, to change our world"[Ibidem 35] and according to the *guide "Technology Education Guide Prepared by The World Council of Associations for Technology Education (WOCATE) for UNESCO Division of Secondary UNESCO" 2003* which states that students "learn to adapt to change, to cope with the forces that influence their future and to participate in control of their future" [5], [25].

Description of the research situation and identification of the research problem. At the international level, philosophical, sociological, psychological and pedagogical research interprets the concept of technological education in a multifaceted manner. Technological education is a dimension of education, but also of the general culture of contemporary man, because technology is understood as science in action, as applied science it is a component of everyday life. The essence and specificity of technological education are reflected in the understandings and visions of researchers Cristea S., Cucos C., Antonesei L., Simonenko V., Matyash A.K, Nevelev V., Zhuchkov D., Gillham P., Seigma D., Desjeux V., Krutetski, J., Lukin N., Babansky Yu. K, Vershlovsky S. and others [21].

In the European space, the problem of the valorization of technological education in the context of preadolescent training advances different interpretations: "opportunities to solve different tasks and activities to satisfy certain needs" (England); "to achieve theoretical and practical understanding in different fields" (France); "represents an intense means of communication about life" (Spain); "to understand a phenomenon" (Italy) [8, pp.12–14].

The concerns of researchers from the Republic of Moldova regarding the structure and evolution of the educational content of the discipline "Technological Education" in the context of the transformations in society since 1989 and up to now are described by: Rusu A. (2011) *referring to the content of the technological education discipline which has a "great role in the formation of the child's personality";* Cojocaru-Borozan M. (2011) referring to the competences of young people as "*results of the formation of the skills and abilities they have, connected to the intelligence quotient*" [6], [7, p. 23]; Bucun N. (2011) identifying *"primary importance for the purpose of forming an integral and autonomous personality";* Secrieru P., Paiu M., Morei E. and Rudic G. (2011) stating that "*it offers all students opportunities to manifest and discover their own person regarding self-realization, self-knowledge of their own potential, related to the creation of new values, new projects from various domains of life*" [13, pp. 93–97]; Cotovițcaia D, Vitcovschii A. (2017-2022) revealing the "*utilization of the creative potential of each student"* and others [23].

In Romania, the technological education is addressed in the researches signed by: Antonesei L (2002) being "*reality exploration process*"; Toma S., Bratean L., Pinta G. (2012) "*contributes to the formation of critical thinking skills and practical skills, in cooperative conditions*" [14]; Litoiu N. (2014) "*stimulates the positive and critical spirit,*

creativity" [1, p. 4];. Constantin R. (2005) "*contributes to the formation of the student's personality, open thinking, integration in the modern world*" [Ibidem 8, pp. 12–16]; Marinescu M., Marcu V. (2003) "*is intended to make the student aware of the ability to choose by himself and not to be chosen*" and other authors.

Pedagogical and psychological research on the training of preadolescents for the role of responsible parent demonstrates the open character of the recorded meanings: "the development of a democratic style of raising children and the restructuring of gender roles" (Bodrug-Lungu V., 2017) [2, pp. 39–48]; "redefining the quality of competent and efficient family member and parent achieved through the specific contents of the new educations" (Cuznețov L., 2013) [12, p. 38]; "a preparation for perspective parenting is necessary" (Ovcerenco N., 2014) [20, p. 15]; "parenthood is seen as a unitary complex and transpersonal formation, it includes two people, a mother and a father" [Ibidem 20, p. 23]; "the moral behavior of people can lead to the devaluation of family life and its values" [19, p. 9]; "the formation of the motivation to realize in the future consciously and responsibly in the role of a parent" (Ovcerenco N., 2004) [24]. We also record the approach and definition of the concept of family in the works of researchers: Herseni T.; Stanciulescu E.; Cuznetov L.; Voinea M. A series of relevant and important aspects regarding the education of young people within the family can be found in: Callo T. [3, p. 116]; Cojocaru-Borozan M. [7, p. 172]; Sadovei L. [20, p. 171]; Raduț D.; Cristea S. [9, pp. 99–104]. Parental education is defined as "parenthood support" manifested and addressed in the studies of the researchers: Dumitru I.; Vrasmas E.; Ionescu M.; Sorici O.; Micleușanu Z.; Nelson – Jones R.; Răileanu O.; Saranciuc-Gordea L. Education for parenthood is conceived by specialists in the field as part of moral education and a component of the process of preparing young people and future parents for family life; it is recorded in the researches of sociologists Golod N. G., Laptenco S. F., Harcev A. G., Iancova Z. A., Urlanis V. U., Cernova E. V. [22].

The training of preadolescents for the role of responsible parent is a relevant issue in the context of technological education aimed at "forming the proactive and creative personality" of young people. Preadolescents will actively integrate into adult life, in the social environment; this denotes that technological education contributes to the step-by-step development of a technologically literate personality [16]. The contradictions in the context of preadolescent education are outlined, which demonstrate: (1) the disagreement between contemporary challenges aimed at the appropriateness of the multi-aspect preparation of preadolescents for adult life (including the role of a responsible parent) and the insufficient awareness of the formative potential of technological education in this sense; (2) the uncertainty of training preadolescents to exercise the role of responsible parent and the need to capitalize on the context of technological education by reconsidering the curricular objectives, content and didactic strategies to achieve the desired parenting education. These contradictions led to the formulation of the **research problem**: *What pedagogical conditions can be created to capitalize on the formative potential of the discipline "Technological Education" necessary to train preadolescents for the role of responsible parent?*

The purpose of the investigation consists in the conceptualization, theoretical substantiation and validation of the Pedagogical Model for capitalizing on technological education in the context of training preadolescents for the role of responsible parent.

The training of preadolescents for the role of responsible parent can be ensured if: the theoretical benchmarks of technological education regarding the training of preadolescents as future adults will be established; the criteria and indicators for the degree of preparation of preadolescents will be identified and described; *the Preadolescent Training Program will be developed and experimentally validated through the optional discipline "Life Skills" in the context of technological education.*

The research of objectives have in mind:

1. the determination and scientific interpretation of the theoretical foundations regarding technological education and parenting education;
2. the analysis of the technological education curriculum on the dimension of training preadolescents for the role of responsible parent;
3. establishing the particularities and degree of training of preadolescents for the role of responsible parent;
4. the conceptualization of the Pedagogical Model for capitalizing on technological education in the context of preadolescent training for the role of responsible parent;
5. the development and experimental validation of the Preadolescent Training Program through the optional discipline "Life Skills" in the context of technological education;
6. elaboration of scientific conclusions and recommendations regarding technological education in the perspective of training preadolescents for the role of responsible parent.

Research hypothesis: The training of preadolescents for the role of responsible parent in the context of technological education can be ensured if: the theoretical foundations regarding technological education and parenting education will be scientifically determined and interpreted; the curriculum for the discipline "Technological Education" will be analyzed on the dimension of training preadolescents for the role of responsible parent; the particularities and degree of training of preadolescents for the role of responsible parent will be established; it will be scientifically developed and designed *The pedagogic model for capitalizing on technological education in the context of training preadolescents for the role of responsible parent;* will be developed and experimentally validated *the Training Program for preadolescents through the optional discipline "Life Skills"* in the context of technological education, which will contribute to the preparation of preadolescents for the role of responsible parent through technological education.

The methodology of scientific research is supported by theories, theoretical approaches, models and concepts generated in the context of education sciences, promoted in education policy documents: the fundamental principles of education (Education Code) [5], the National Development Strategy "Moldova 2030", the National Strategy for the Sustainable Development of Romania 2030, Horizons 2013–2020–2030 which contributed to determining the theoretical foundations and methodological benchmarks: the system of ideas favorable to the development of critical thinking (L. Meredith, K. S. Steele, 1995) [24, p. 11]; the concept of creativity and technical creativity (D. Patraşcu, A. Carnauhov, 2015); the technology of technical creativity – the

theory of solving inventive problems (Belous V., Dulgheru, D); problem-based training technology (Dewey J., Mahu I., Mahmutov I., etc.); technology how to develop our creativity (Bouillerce B., Carré E.); pedagogy of cooperation involving a joint development of the activities of adults and children (Shatsky S.T., Sukhomlinsky V.A., Zankov L.V., Ivanov I.P.); the technology of collective creative activity (Volkov P., Ivanov I.P.); the concept of parenthood, motherhood, paternity (Ovcerenco N., 2016) [Ibidem 20, p.128]; strategies for optimizing the parent-child relationship (Bandura A., Calaraș C., etc.); family counseling methodology (Baban A., Șoitu L., Carabet N., etc.); the family education system (Cuznețov L., 2020) [Ibidem 12].

The synthesis and justification of the scientific research methodology involved the use of the following methods: *theoretical* – scientific documentation, analysis and synthesis of the specialized literature, the deduction method for the interpretation and explanation of the results obtained in the research; *experimental* – the pedagogical experiment, the questionnaire, the conversation, the scientific observation, the evaluation sheet, the evaluation grid, the quantitative and qualitative analysis of the experimental results, the mathematical processing of the research results.

THESIS CONTENT

In the Introduction, the actuality and importance of research on the training of preadolescents to exercise the role of a responsible parent is described, the situation in the field being reflected and analyzed and the research problem identified. The aim and objectives of the research, the particularities and degree of training of preadolescents for the role of responsible parent are presented; the synthesis of the research methodology, the implementation and approval of the research results, the volume and structure of the thesis, the summary of the thesis sections are described.

CHAPTER 1. "Theoretical foundations of technological education and parenting education" contains the epistemological study of the problem and highlights the essence and content of the basic concepts: technological education, technological culture, parenting education. Education defines the social values and the psychological, individual requirements necessary for the training and development of the personality of preadolescents on a moral, intellectual, technological, aesthetic, psychophysical level. Among its general dimensions are technology education, which aims to develop students' technological literacy through the ability to use, manage, understand and evaluate technology in general; and the main task is education for work [24, p. 242].

Technological education includes pedagogical education and training activities that contribute to the training of preadolescents for the role of responsible parent by: acquiring and processing information, training capacities and thinking operations, training practical skills, developing special character traits. Element of the sphere of general culture is technological culture, which implies: "going beyond the simple assimilation of knowledge"; technological knowledge and skills needed by preadolescents to benefit from technological progress and rational attitudes applied in everyday life [Ibidem 24, p. 87]. A. K. Nevelev attributed to technological culture the definition of "combination of means, methods, products and experiences of industrial

and technical activities, guided in accordance with the principles of self-preservation and continuous self-development of human society"; explains the "planetary status of technological culture"; highlights "the level of modern technological culture determined not by the level of technical equipment and the organization of the process, but by the results of the impact on the human environment" [17, p. 62].

Preadolescents to be trained for life means being prepared to integrate into an expanding technological universe and operate with technical education, work education, professional education in the development of modern society characterized by the development of the child who becomes an adult and future parent.

Through technological education, preadolescents form the necessary skills to fulfill their maternal/paternal duties; they have the knowledge, skills, attitudes, character traits necessary for a future responsible parent [Ibidem 1, p. 157].

The preparation of preadolescents for family life must be started as early as possible, in forms specific to their age and level of understanding, in an organized framework and in a systematic manner, and aims at achieving some psycho-behavioural acquisitions necessary to adopt and exercise the status of parent [22].

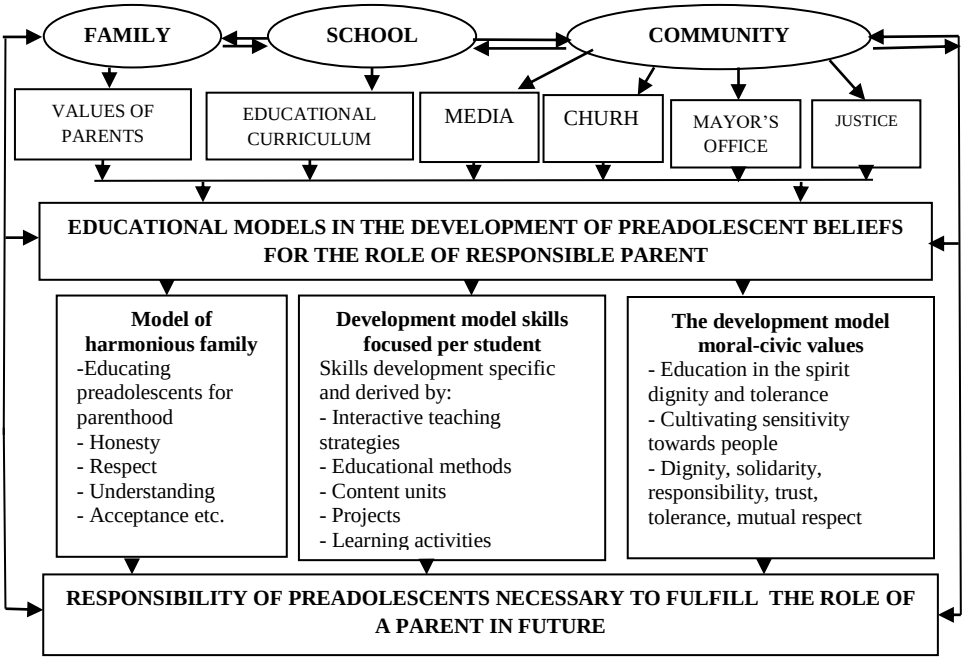

Figure 1. Psychopedagogical implications of the forms of education and educational models in the development of preadolescent beliefs for the role of responsible parent

Following the research done, we developed the scheme *Psychopedagogical implications of the forms of education and educational models in the development of preadolescent beliefs for the role of responsible parent* (Figure 1.) in which are reflected

the family and the community with the largest share of non-formal education and the school with the role of formal education. The involvement of family, school and community in the education of preadolescents contributes to the development of their beliefs for the role of responsible parent. Preadolescents' beliefs for the role of responsible parent (rpr) are: development of specific and derived skills, education in the spirit of dignity and tolerance, cultivation of sensitivity towards people, dignity, solidarity, responsibility, trust, tolerance, mutual respect, defense of the good, of justice. We consider the elements of the subjective dimension of training preadolescents for the role of responsible parent to be important, because through them, young people will develop the personality of the future parent.

The values are what condition and energize the actions of preadolescents, they reside in the quality of the concepts studied, of the people who guide them, contributing to the formation of self-esteem [3]. They serve as a reference for the way of thinking of future responsible parents, are part of their beliefs, determine behaviors, allow the expression of interests and feelings and are acquired during the individual development of each preadolescent.

The role of a responsible parent also involves the development of skills to ensure the basic resources of family members, parents' awareness of the needs of children according to their age [Ibidem 19].

CHAPTER 2. "Pedagogical conditions of the valorization of technological education in the perspective of training preadolescents for the role of responsible parent" includes: analysis of the contents of the discipline "Technological Education" approached from three perspectives (theoretical, practical, concrete-action); the characteristics of the current curriculum for the training of preadolescents for the role of responsible parent; capitalizing on the intra- and interdisciplinary connections of the discipline that offer students the perspective of their training in terms of self-discovery and preparation for an independent life. The specific competences of this discipline contribute to the formation of sustainable development values promoted by the Moldova 2030 National Strategy and the National Strategy for the Sustainable Development of Romania 2030 represented by: economic effectiveness, social equity and environmental balance. The purpose of technological education is to give each student the opportunity to realize his own potential in knowledge, behavior, socialization and development of individual experiences through student-centered learning-active learning that determines the stimulation of creativity, imagination, flexible thinking, skills and capabilities [Ibidem 9, p. 129].

By studying the content of the curriculum of the discipline "Technological Education", the preadolescents develop: logical and action thinking, the ability to solve as many problems as possible in different fields of technology, they know traditional traditions and crafts. Following the evaluation of the curriculum on the dimension of training preadolescents for the role of responsible parent, the following is required: the introduction of specific sub-skills/skills and contents to contribute to the training of preadolescents for the role of responsible parent; the balance between scientific knowledge and the weight of practical activities; the number of hours for carrying out practical activities should be greater than those for theory [10]. The initial examination

of the curriculum of the discipline "Technological Education" leads to the statement that, although at the national and international level there are changes that foresee the modernization of the educational system to respond both to the individual needs of young people and to the demands of society, still the formation of skills through which preadolescents become responsible when they will be parents is not clearly stated among the other sub-skills or derived skills [14]. It is necessary to propose contents at an implicit level, even if teachers promote to a certain extent this responsibility of preadolescents through their deontological conduct. Outstanding psychologists such as Neacșu I., Mitrofan I., Mitrofan N., Golu M., Chelcea S., Stănciulescu E., Șchiopu U., Crețu T., Bonchis E. believe that intellectual development is not "self-development", reason for which instruction and education is based on the observance of moral norms, of social coexistence, feelings of appreciation, esteem and mutual trust. As a result of the bibliographic study and the investigated aspects, we elaborated, scientifically founded and described the *Pedagogical Model for harnessing the potential of technological education in the context of training preadolescents for the role of responsible parent, focused on increasing the level of skills necessary to train preadolescents for the role of responsible parent* (Figure 2.). Next, we propose a synthetic analysis of the components of the elaborated model: the theoretical foundations regarding technological education and parental education are represented by the concepts supported by researchers from the Republic of Moldova and Romania (Cristea S., Doleanu I., Griu N., Goia D., Bulat G., Cuznețov L., Orindaș L., Mitrofan I., Zubenschi E., Carabet N. and other authors) who contributed to the preparation of the young generation through training activities that include educational actions of information, awareness, learning, training, formation of parenting attitudes and practices. These foundations are the basis of the activities carried out by the teaching staff and the design of the disciplinary curriculum [11]. The process of technological education oriented towards the training of preadolescents for the role of responsible parent focuses on students and on the competences that determine the formation and development of the personality of preadolescents through attitudes, knowledge and abilities formed, acquired and developed through disciplinary and transdisciplinary dedication. There is an interdependence relationship between the discipline "Technological Education" and the optional "Life Skills" which can be identified following the activities carried out by preadolescents through a completion or expansion of knowledge from the component disciplines of the common core with those necessary for everyone's life. The good conduct of educational activities is achieved through student-centered strategies and the creation of situations in which students show their responsibility for when they become parents.

The preadolescent competencies for the role of responsible parent enable value creation alongside technological processes and their applications: creativity, critical thinking, communication and cooperation.

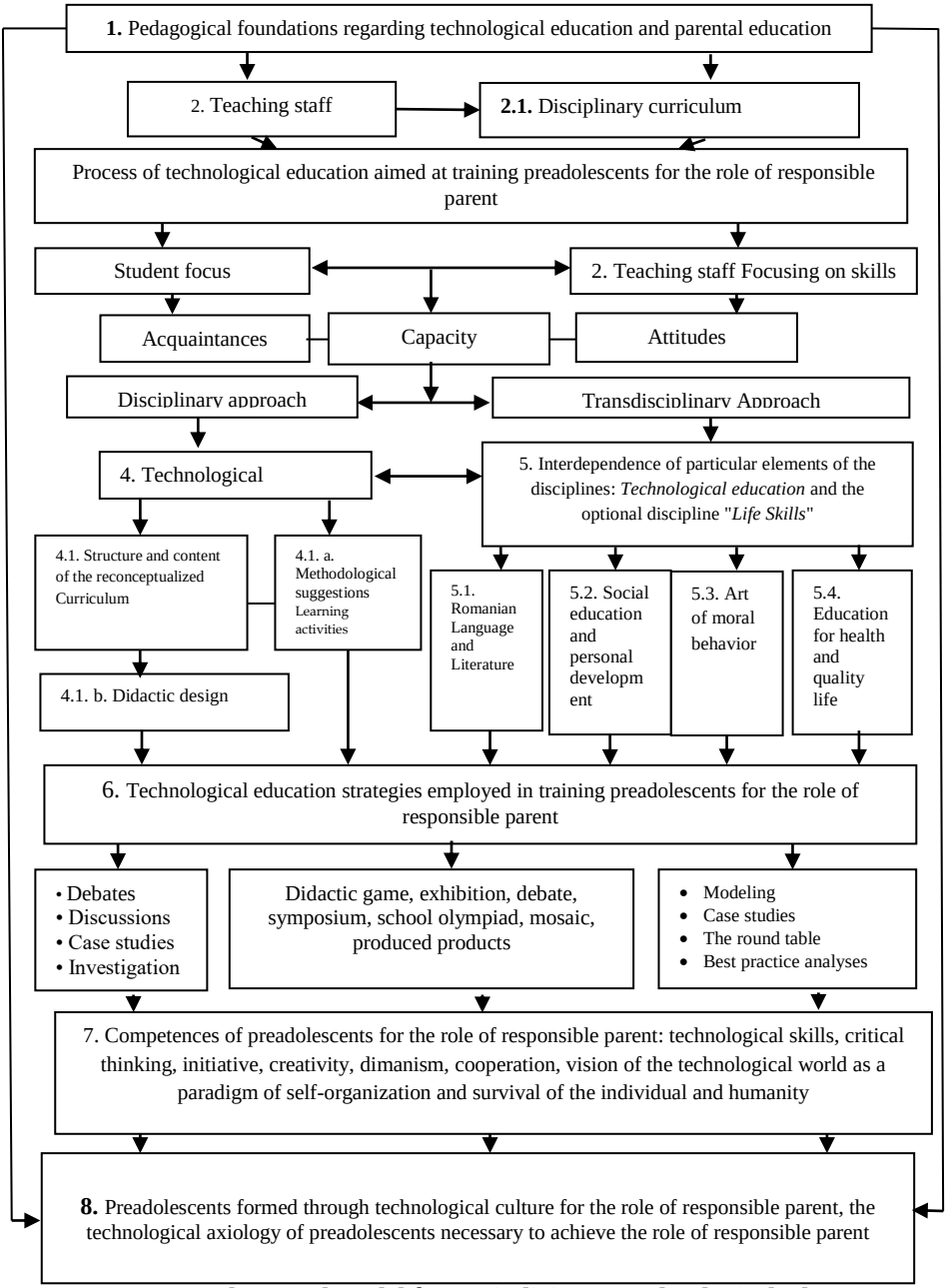

Figure 2. Pedagogical model for capitalizing on technological education in the context of training preadolescents for the role of responsible parent

Preadolescents form their axiological competence, through learning, following the application of various mechanisms (conditioning, reward, punishment, imitation and identification phenomena) [4, p. 8]. Axiological competence prepares preadolescents for successful integration into social life and aspiration towards values.

In conclusion, the pedagogical model for capitalizing on technological education in the context of training preadolescents for the role of responsible parent includes compulsory school subjects and optional subjects, extracurricular activities, the collaboration of school units with the family and the community. All the acquired knowledge, the practical applications made contribute to solving the problems determining the education of preadolescents for the role of responsible parent [Ibidem 3, p. 171]. In the head 3 we describe the methodology of the valorization of the Pedagogical Model of technological education in the context of training preadolescents for the role of responsible parent, necessary as a theoretical premise for the design and implementation of the Training Program for preadolescents through the optional discipline "Life Skills" in the context of technological education.

CHAPTER 3. „The experimental framework of capitalizing the potential of technological education in the training of preadolescents for the role of responsible parent" presents the research design of the training of preadolescents for the role of responsible parent and the comparative results of the experimental implementation of the Training Program for the role of preadolescents for the role of responsible parent through the optional discipline "Life Skills" in the context of technology education. The experimental research carried out in the period 2018-2021 relied on knowledge about the responsibility of preadolescents for when they will become parents. The design of the research was conceived by developing the tools necessary to determine the level of knowledge of students in the discipline "Technological Education" regarding the responsibility for the role of parent, to inform parents about the particularities of education at the age of preadolescents and the need to clarify the essence of the role of responsible parent , and the involvement of teachers in raising awareness of the values of technological culture and training preadolescents for the role of responsible parent through models of didactic activities oriented in this sense. The pedagogical experiment includes the pre-test stage that took place in the 2018-2019 school year and consisted of applying the questionnaire to 102 students from the VIIth grade and 33 parents. Through the applied questionnaires, we aimed to know the opinions of the subjects regarding the role and importance of technological education in the training of preadolescents for the role of responsible parent and to identify their individual problems/difficulties from the answers to the applied questionnaire. The result obtained was the correction, completion and development of the practical skills that preadolescents need when they become parents. The individual survey allowed us to establish the causes of the difficulties that arise regarding the fact that technological education contributes to a certain extent to the training of preadolescents for the role of parent; the problems that parents perceive in educating their children, in communicating and relating with them; the expectations and impact of family members on the training of preadolescents for everyday life. The observation stage of the pedagogical experiment was aimed at evaluating the level of knowledge of the students in the discipline "Technological Education" regarding the

responsibility for the role of parent. The subject group consists of 57 students, of which 26 students make up the experimental group and 31 students make up the control group. This stage allowed us to determine the degree of preparation of preadolescents for the role of responsible parent, using the evaluation grid made up of indicators specific to the criteria proposed to be measured.

Experimental group | Control group

1. Family's healthy diet
2. Quality of the family's clothing
3. Capitalizing on natural resources while preserving popular family traditions
4. Creating manual things necessary for the home
5. Making products from natural materials for different occasions
6. Developing a taste for beauty by making decorative objects
7. Execution of simple agricultural works
8. Confident and responsible use of digital technologies for learning, a future workplace
9. Execution of fabric fragments
10. Necessary objects in every household

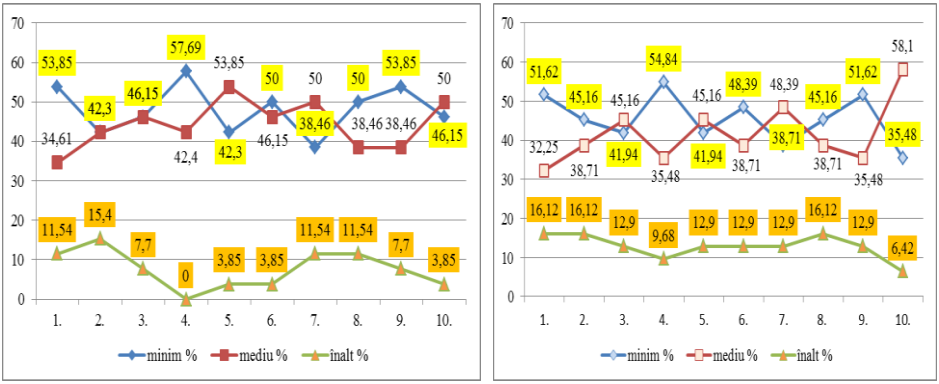

Figure 3. Preadolescents' degree of preparation for the role of responsible parent (finding stage)

The results recorded by preadolescents (students) argue their low level of preparation for the role of responsible parent. The high degree of preparation for the role of a responsible parent of the preadolescent in the experimental group is recorded in the criterion of the *quality of the family's clothing* (15.4%, the high level of the GE, compared to 16.12% of the GC); *the family's healthy diet and the confident and responsible use of digital technologies for learning, a future job* (11.54%, the high level of GE, compared to 16.12% of GC) and *performing simple agricultural work* (11, 54%, the high level of GE, compared to 12.9% of GC); *execution of fabric fragments* (7.7%, the high level of GE, compared to 12.9% of GC) etc.

Careful examination of the experimental data leads to the conclusion that at the ascertainment stage there are minimal differences between the results of GE and GC, which proves that students need to develop their skills in certain proportions according to the knowledge, abilities and skills that will be developed through through the

discipline "Technological Education"; fact that challenged us to design training activities for preadolescents for the role of responsible parent.

Comparative results regarding the effectiveness of the Preadolescent Training Program for the role of responsible parent through the optional discipline "Life Skills"

The program was designed to train preadolescents to take responsibility for the role of parent. At the training stage, we started the process aimed at the methodological orientation of preadolescents, parents and teachers, which has as an epistemological benchmark the pedagogical model for capitalizing on technological education in the context of training preadolescents for the role of responsible parent. *The objectives at the training stage and the control stage of the research* assumed the comparative evaluation of the degree of preparation of preadolescents for the role of responsible parent; initiation into the issue of developing the role of a responsible parent through the discipline "Technological Education"; holding thematic discussions with parents and teachers regarding the preparation of preadolescents for the role of responsible parent; description of the stages of training and te level of knowledge/abilities/attitudes/beliefs regarding the education of responsibility for the role of parent of preadolescents.

The training program for preadolescents for the role of responsible parent through the optional discipline "Life Skills" in the context of technological education includes components that will be described next.

Stage I. "Development of the Curriculum of the optional discipline "Life Skills" aims to initiate the development of preadolescents for the role of responsible parent through the discipline "Technological Education"; the formation of autonomous and creative personalities by developing intellectual and practical skills through the proposed content units (Figure 3).

The curriculum for the optional discipline "Life Skills" represents a curriculum offer at the decision of the school for the VIIth grade, has a pronounced integrated character, includes 10 contents in its structure and was carried out during the 2019-2020 academic year. The purpose of the detailed analysis of the learning units, which make up the optional "Life Skills" curriculum, is to identify aspects as conceptual and methodological support in order to highlight the potential of technological education in training preadolescents for the role of responsible parent.

The didactic design of the technological education activities consisted in identifying from each learning unit the criterion that highlights the competence developed in preadolescents for the role of responsible parent. At the end of each teaching activity, students participate in discussions based on an application received. According to the answers elaborated by the students, they are aware that the "Technological Education" discipline contributes to their training for adult life, respectively as a responsible parent.

After completing each learning unit, the students are evaluated according to the developed evaluation sheets, in order to determine the level of skills according to the established criterion, to clarify the attitudes and parental education practices necessary for when they will become responsible parents.

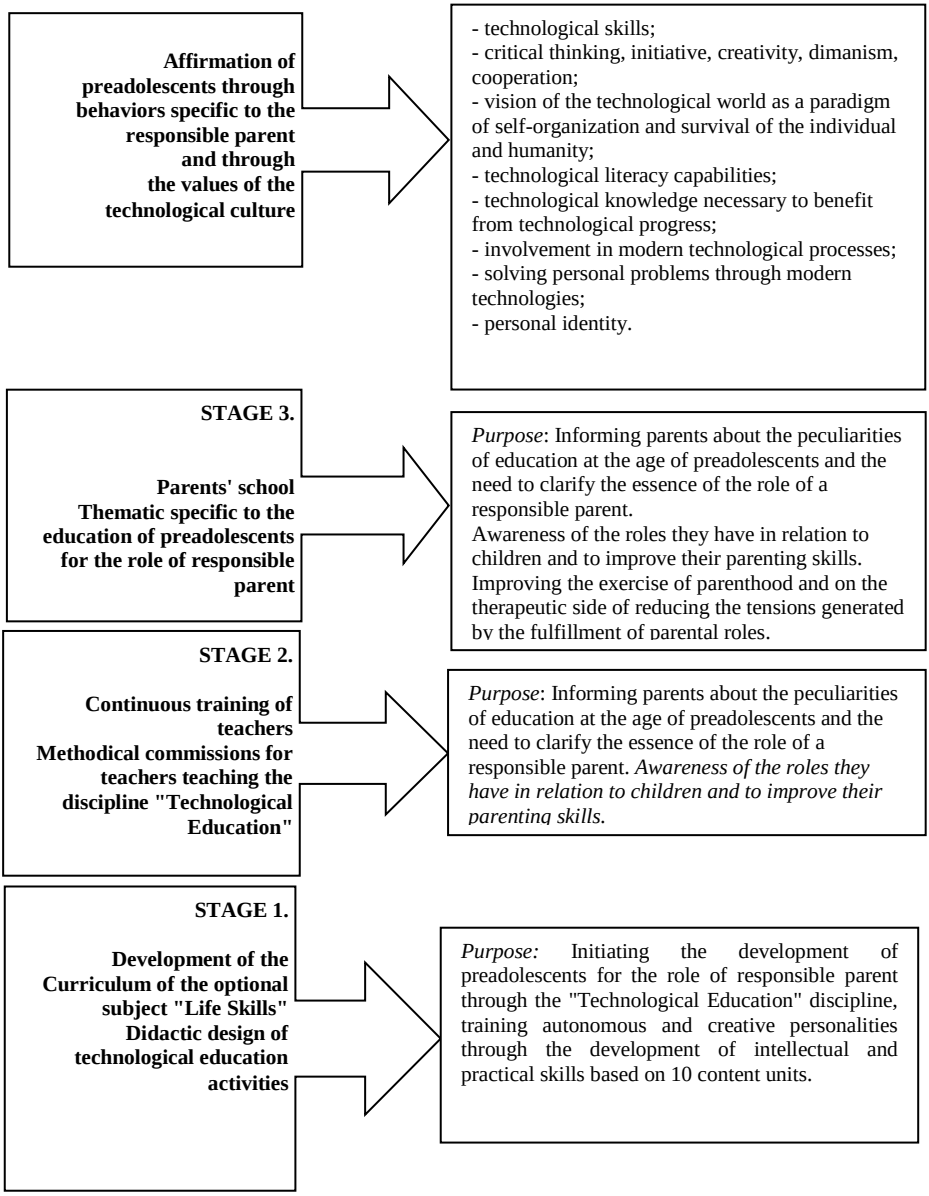

Figure 3. Preadolescent training program for the role of responsible parent through the optional discipline "Life Skills"

The training program for preadolescents for the role of a responsible parent through the optional discipline "Life Skills" was applied in 2019-2020 to a sample of 61 subjects: 26 preadolescent students (7th grade of the "Costache Negruzzi" National College Iasi), 25 parents and 10 teaching staff who make up the methodological committee for teachers who teach the discipline "Technological Education".

Stage II. "The continuous training of teachers who teach the discipline "Technological Education" includes two thematic seminars, designed and carried out with the teachers who form the methodical commission for the discipline "Technological Education", with the aim of raising the awareness of teaching staff regarding the importance of technological education in the training of preadolescents for the role of responsible parent. These meetings provided the trainees with knowledge of the issue of training preadolescents for the role of responsible parent and the importance of involving teachers in the training of preadolescents for the role of responsible parent by strengthening the skills they must have when they become parents. By conducting the thematic seminars, the behavior of preadolescents was highlighted by capitalizing on learning situations aimed at training them for the role of responsible parent referred to in table 4.

Table 4. Values noticed by preadolescents following the debates during the thematic seminars

Thematic seminars	Values observed in preadolescents
Need to study technological education in a contemporary context	• Improving the school activity of preadolescents • Involvement of preadolescents in group activities/projects • Careful handling of work tools by preadolescents • Showing attention and respect for explanations and demonstrations given to preadolescents • Increasing the level of knowledge by preadolescents • Demonstrating interest in carrying out practical work and the availability to continue the activity of preadolescents and in the family • Appreciation and awareness that everything they acquire/learn/perform in these school years will form the basis of preadolescent training as a future parent
Parents' attitude towards children's experiences	

Stage III. "Parents' school" includes activities to inform parents about the particularities of education at the age of preadolescents; the need to clarify the role of responsible parent; awareness of parents' roles in relation to children; improving parenting skills; improving the exercise of parenthood and on the therapeutic side, reducing the tensions generated by the fulfillment of parental roles.

The parents' school was realized through the extracurricular educational project "I want to know" in which 25 willing parents participated. As part of the educational project, four free discussion sessions were held with the parents of the class in which

topics related to both the school activity of preadolescents and their involvement in household activities were discussed. The activities carried out contributed to the awareness of the essence of the role of studying technological education in order to become a responsible parent, the awareness of the training of practical skills and the specification of the skills necessary for this important socio-familial role. Also, parents have realized the importance of this "new education" necessary for preadolescents who will become responsible adults. Meetings/meetings with parents remain the main way of communication between the teacher and parents, stimulating them to be aware of their responsibilities as educators in their own family. At the end of the training program, the following were observed:

- raising students' awareness of the impact of technological culture in the family and society;
- increasing the receptivity of parents, children with a view to education for tomorrow's life and by respecting family values;
- the need for the permanent formation of educational awareness and the skills necessary for the future parent;
- the efficient and systematic organization of the education of preadolescents in order to optimize the relationships between them;
- optimization of communication and cooperation between students and groups of students;
- the motivation for capitalizing on the physiological and psychological potential of each child's family members, considering the improvement of their quality of life;
- the motivation of preadolescents to capitalize on the cultural heritage of their families.

Through the training program we had the opportunity to transmit a set of knowledge regarding technological education; to capitalize on the need to train preadolescents for future adult life, to change the attitude and conduct of family members in relation to the study of school subjects. During the course of the educational activities, I was able to observe and determine the aspects that require correction in the family-school relationship, sometimes the lack of work materials constituted negligence on the part of the parents.

The efficiency of the Training Program for preadolescents through the optional discipline "Life Skills" results from the comparison of the data between the observation and validation of the experimental group of students, which shows the increase in the values of the degree of preparation of the students for the role of a parent responsible for the high level (*quality of family's clothing* - from 15.4% to 46.15%; *performing simple agricultural work* – 11.54% to 46.15%; *healthy family nutrition* – from 11.54% to 42.3%; *using with confidence and responsibility of digital technologies for learning, a future job* – from 11.54% to 38.46%) and for the middle level (*healthy family nutrition* – from 34.61% to 38.46%), but also the decrease significant data for the low level (*execution of simple agricultural works* – from 57.69% to 19.23%).

Starting from the specificity and complexity of the research problem, we considered it appropriate and logical to analyze the potential of technological education in the training of preadolescents for the role of responsible parent based on the comparison of the results obtained at the ascertainment and validation stages.

Next, the experimental results obtained at the control stage are presented in comparison with the results obtained at the observation stage of the experiment. The repeated application of the evaluation grid revealed results with a significantly increased level of the potential of technological education in training preadolescents for the role of responsible parent.

The comparative analysis of the experimental data of GE and GC of preadolescents, obtained at the validation stage of the training program, demonstrates the increase of values for the degree of preparation for the role of responsible parent (Fig. 4).

1. The family's healthy diet;
2. The quality of the family's clothing;
3. Capitalizing on natural resources in preserving popular family traditions;
4. Creation of manual things necessary for the home;
5. Making products from natural materials for different occasions;
6. Developing the taste for beauty by making decorative objects;
7. Execution of simple agricultural works;
8. Using digital technologies for learning with confidence and responsibility;
9. Execution of fabric fragments;
10. Necessary objects in every household.

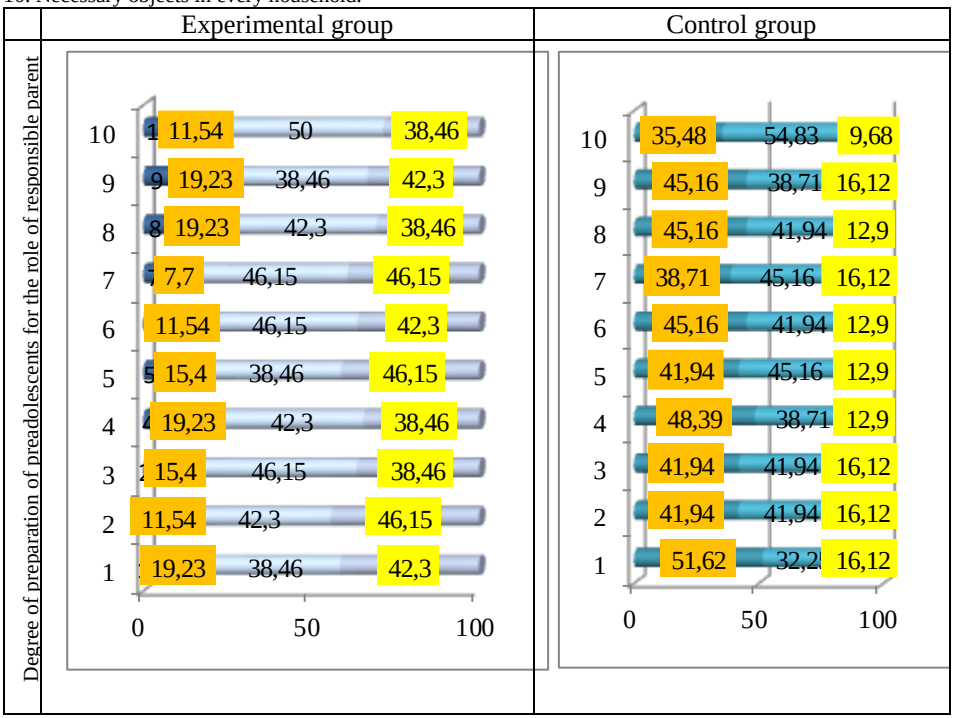

Figure 4. Preadolescents' level of preparation for the role of responsible parent (validation stage)

A significant increase was recorded in the values corresponding to the criteria: *execution of simple agricultural works and quality of family's clothing* (46.15%, the high level of the GE, compared to 16.12% of the GC); *making products from natural materials for different occasions* (46.15%, high level of GE, compared to 12.9% of GC); *execution of fabric fragments and healthy family eating* (42.3%, the high level of GE, compared to 16.12% of GC); *developing a taste for beauty by making decorative objects* (42.3%, the high level of GE, compared to 12.9% of GC); *capitalizing on natural resources in preserving the popular traditions of the decorative family* (38.46%, the high level of GE, compared to 16.12% of GC); *decorative and responsible use of digital technologies for learning, a future job and creating manual things necessary for the home* (38.46%, the high level of GE, compared to 12.9% of GC); *items needed in each household* (38.46%, the high level of GE, compared to 9.68% of GC).

The training program for preadolescents through the optional discipline "Life Skills" ensured the positive dynamics of values for the degree of preparation of preadolescents for the role of responsible parent. The degree of preparation of preadolescents for the role of responsible parent was evaluated by the values of the technological culture, namely:

- technological skills (demonstrates students' involvement during activities, attitude and attention to practical work performed);
- critical thinking, initiative, creativity, dynamism, cooperation (preteens manage to analyze and prioritize the information received, apply it in practice and become responsible for the results of their activity);
- vision of the technological world as a paradigm of self-organization and survival of the individual and humanity (demonstrates the formed ability to reflect on the environment, to formulate and solve some problems based on the acquired knowledge);
- technological literacy capabilities and technological knowledge (demonstrates the skills, knowledge and understanding needed to use the technological notions and practical skills trained);

Briefly, we can state the following:

• The implementation of the pedagogical model that includes the theoretical and applied foundations aimed at the potential of technological education in the training of preadolescents for the role of responsible parent determined the increase in the level of competence formed through the evaluation criteria and preparation of preadolescents for adult life.

• The results obtained at the control stage allow the validation of the efficiency and functionality of the pedagogical tools used, namely the research model and design designed in accordance with the purpose, hypothesis and objectives of the research.

As a result, the implementation of *Pedagogical Model for the valorization of technological education on the coordination of the training of preadolescents for the role of responsible parent*, which includes the theoretical-applicative foundations, contributed to the evolutionary modification of the level of skills developed in preadolescents for when they will become parents and ensured the increase capabilities and the quality of the activities that will be carried out during the technological education classes and directly increasing personal efficiency as a future parent.

GENERAL CONCLUSIONS AND RECOMMENDATIONS

1. The theoretical study of the formation of the responsibility of preadolescents for the role of responsible parent through the study of the discipline "Technological Education" determined the *examination of the theoretical and methodological foundations of technological culture in secondary education*. Technological education is the discipline that represents the "open door to tomorrow's society" and aims to train preadolescents with intellectual capacities, affective dispositions and practical skills by assimilating technological knowledge, with the aim of facilitating autonomous behavior to adapt to the technological specifics of everyday life – behavior necessary for the life of an adult or responsible parent [18].

2. The theoretical analysis of the studies on the peculiarities of preadolescents allowed us to establish that they show interest in their own person; persistence in solving problems; they are objective towards the study stages and their own training. According to the researchers, the problems in the parents' lives, the atmosphere in the family, the methods of education have a great influence on the psychological state, the development of the nervous system, and the education of preadolescents in general. In the current conditions of the development of the education system, as stipulated in the Education Code, learning takes place throughout life with the aim of "training or developing skills from a personal, civic, social and professional perspective" and is the result of "daily activities related to the activities carried out in the school environment and the family environment" [5] (Chap. 1, 1.1).

3. From the perspective of the issues generated by the potential of technological education in the training of preadolescents for the role of responsible parent, through theoretical documentation, *the investigation led to the determination of the epistemological foundations regarding the technological culture of preadolescents, described through scientific approaches (psychological, sociological and pedagogical), were scientifically interpreted technological education and parenting education and the skills necessary to meet the basic needs of life as a responsible parent were highlighted* (Chap. 1, 1.1, 1.2 and 1.3).

4. The description and analysis of the content of the curriculum in the discipline "Technological Education" generated the need for the exact specification of theoretical knowledge, practical applications, which integrate the determining factors of the personality development of preadolescents and considering the particularities of the age of preadolescence, *aspects of the formation of the personality of preadolescents necessary for adaptation for when they will become responsible parents*. It was found experimentally that preadolescents pay special attention to the skills they have acquired, a fact that emphasizes the need to study technological education for the formation of parental responsibility in young people (Chap. 2, 2.1, 2.2).

5. The scientific reconsideration of the objectives of technological education, the analytical and synthetic study of the content of the curriculum, of the theories regarding parenting education, of the principles of technological education, affirmed at the level of UNESCO, of the studies of different researchers in the field *contributed to the elaboration, scientific foundation and valorization of Pedagogical model for the*

valorization of technological education based on the training of preadolescents for the role of responsible parent, structured in vectors (psycho-physiological, motivational and social), from which the indicators and criteria for evaluating the degree of preparation of preadolescents for the role of responsible parent. We present the evaluation criteria below: the family's healthy diet; the quality of the family's clothing; capitalizing on natural resources in preserving popular family traditions; creation of manual things necessary for the home; making products from natural materials for different occasions; developing the taste for beauty by making decorative objects; execution of simple agricultural works; the confident and responsible use of digital technologies for learning, a future workplace; execution of fabric fragments; items needed in every household. For each evaluation criterion, indicators were identified that reflect the competences of preadolescents to become a responsible parent.

Behaviors are divided into three domains: *cognitive* (thinking, memory and other intellectual capacities), *affective* (feelings, interests, attitudes, values: the will to receive, directed or preferential attention, the will and satisfaction of responding), *psychomotor* (manual skills, complexes and technical skills) (Chap. 2, 2.3).

6. The pedagogical experiment designed and carried out on a stratified sample consisting of preadolescent students, teachers and parents of *generated scientific conclusions regarding the problem of responsibility for parenting of preadolescents in the context of the valorization of the study of technological education and highlighted the importance of the education of preadolescents for the role of a responsible parent.* For the needs of the research, the research methodology was developed and applied which allowed the evaluation of the preadolescents' degree of preparation for the role of future parent (Chap. 3, 3.1).

7. For the training stage of the pedagogical experiment, *the Training Program for preadolescents for the role of responsible parent through the optional discipline "Life Skills" in the context of technological education was developed and experimentally validated,* theoretically based on the *Pedagogical Model for capitalizing on technological education in the context of preadolescent training for the role of responsible parent*. The comparative evaluation of the experimental data at the validation stage allowed the conclusion about the effectiveness of the knowledge and practical activities carried out in technological education and the actions to inform teachers and parents about the potential of technological education in training preadolescents for the role of parent. Parents became aware of the need to study technological education for the responsibility of children, to know the particularities of education at the age of preadolescents, to clarify the essence of the role of a responsible parent; awareness of the roles they have in relation to children and involvement in improving parental skills; reducing the tensions generated by the fulfillment of parenting roles.

Through the formative evaluation, it is found: the awareness of the students regarding the impact of the technological culture in the family and society; increasing the receptivity of parents, children with a view to education for tomorrow's life and by respecting family values; the need for the permanent formation of educational awareness and the skills necessary for the future parent. *The scientific problem solved in the*

research consists in clarifying the structure and scientific content of the pedagogical foundations of the training of preadolescents for the role of responsible parent within the Conceptual Model and the experimental validation of the *Training Program of preadolescents for the role of responsible parent through the optional discipline "Life Skills" in the context of technological education* that ensured the dynamics of the values of technological culture, a fact that constitutes proof of the effectiveness of the targeted program (Chap. 3, 3.2, 3.3).

RECOMMENDATIONS:

To the creators of the disciplinary curriculum: the design at the teleological and technological level of the methodological framework necessary for the preparation of preadolescents for the role of responsible parent reflected in the modules or contents.

For teachers: designing educational activities for training and strengthening the technological skills necessary to prepare preadolescents for life as an adult/responsible parent.

For preadolescents: self-education for knowledge and valorization of assimilated knowledge by studying technological and family education in the context of the pre-adolescent community.

For parents: review and evaluation of the education promoted in the family and society, the involvement of children in family activities, the transmission of traditional and cultural values in the family.

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ADNOTARE

Rotaru Ioana Corina

Potențialul educației tehnologice în formarea preadolescenților pentru rolul de părinte responsabil, teză de doctor în științe ale educației, Chișinău, 2023

Structura tezei conține: introducere, trei capitole, concluzii generale și recomandări, bibliografie din 280 de surse, adnotare (română, engleză), concepte-cheie în limbile română, engleză, lista abrevierilor, 150 pagini de text de bază, 45 de tabele, 10 figuri, 11 anexe.

Publicații la tema tezei: 20 lucrări științifice.

Cuvinte-cheie: educație tehnologică, preadolescent, educație pentru parentalitate, familie, cultură tehnologică, responsabilitatea preadolescenților pentru parentalitate.

Scopul cercetării constă în conceptualizarea, fundamentarea teoretică și validarea Modelului pedagogic de valorificare a educației tehnologice pe coordonata formării preadolescenților pentru rolul de părinte responsabil.

Obiectivele cercetării vizează: determinarea și interpretarea științifică a fundamentelor teoretice privind educația tehnologică și educația pentru parentalitate; analiza curriculumului la educația tehnologică pe dimensiunea formării preadolescenților pentru rolul de părinte responsabil; stabilirea particularităților și a gradului de formare a preadolescenților pentru rolul de părinte responsabil; conceptualizarea Modelului pedagogic de valorificare a educației tehnologice pe coordonata formării preadolescenților pentru rolul de părinte responsabil; elaborarea și validarea experimentală a *Programului de formare a preadolescenților prin disciplina opțională „Abilități de viață"* în contextul educației tehnologice; elaborarea concluziilor științifice și a recomandărilor privind educația tehnologică în perspectiva formării preadolescenților pentru rolul de părinte.

Noutatea și originalitatea științifică a cercetării este confirmată prin abordarea teoretico-practică multidimensională a culturii tehnologice în formarea preadolescenților pentru rolul de părinte responsabil; determinarea fundamentelor teoretice privind educația tehnologică și educația pentru parentalitate; descrierea particularităților și stabilirea gradului de formare a preadolescenților pentru rolul de părinte responsabil; dezvăluirea evoluției semnificațiilor științifice ale conceptelor operaționale ale cercetării; conceptualizarea Modelului pedagogic de valorificare a educației tehnologice pe coordonata formării preadolescenților pentru rolul de părinte responsabil.

Rezultatele științifice obținute în cercetare contribuie la soluționarea unei probleme științifice importante în cercetare care vizează: fundamentele pedagogice ale formării preadolescenților pentru rolul de părinte responsabil, structurate în Modelul pedagogic de valorificare a educației tehnologice pe coordonata formării preadolescenților pentru rolul de părinte responsabil, în baza căruia a fost elaborat *Programul de formare a preadolescenților prin disciplina opțională „Abilități de viață"* și validat experimental în instituții publice de învățământ general, rezultatele științifico-practice care au contribuit la dezvoltarea teoriei generale a educației.

Semnificația teoretică a cercetării rezultă din stabilirea și interpretarea științifică a tendințelor actuale ale educației tehnologice în formarea preadolescenților pentru rolul de părinte responsabil în contextul educației pentru parentalitate, clarificarea semnificației științifice a culturii tehnologice; elaborarea indicatorilor și a criteriilor de evaluare a preadolescenților pentru rolul de părinți responsabil; elaborarea și aplicarea metodologiei de evaluare a gradului de pregătire a preadolescenților pentru exercitarea rolului de părinte responsabil și elaborarea concluziilor științifice și a recomandărilor privind educația tehnologică în perspectiva formării responsabilității preadolescenților.

Valoarea aplicativă a lucrării constă în crearea condițiilor pedagogice necesare în vederea formării preadolescenților pentru rolul de părinte responsabil prin: expertiza curriculumului la educația tehnologică; elaborarea și validarea experimentală a *Programului de formare a preadolescenților prin disciplina opțională „Abilități de viață" în contextul educației tehnologice*, conceptualizat în baza *Modelului pedagogic de valorificare a educației tehnologice pe coordonata formării preadolescenților pentru rolul de părinte responsabil*; stabilirea particularităților dezvoltării personalității preadolescenților și interpretarea științifică a dinamicii pozitive a responsabilităților parentale în contextul educației tehnologice.

Implementarea rezultatelor științifice s-a realizat prin validarea experimentală a condițiilor pedagogice de valorificare a educației tehnologice în perspectiva formării preadolescenților pentru rolul de părinte responsabil la Colegiul Național „Emil Racoviță" și Colegiul Național „Costache Negruzzi" Iași, prin intermediul predării cursului opțional „Abilități de viață", dezbateri tematice.

ANNOTATION

Rotaru Ioana Corina

The potential of preadolescent technology education for responsible parenting,

Doctoral thesis in educational sciences, Chisinau, 2023

Thesis structure: introduction, three chapters, general conclusions and recommendations, bibliography 280 sources, 11 annexes, 150 basic text pages, 10 figures and 45 tables. Acquired results have been published in 20 scientific works.

Keywords: technology education, preadolescent, parenting education, family, technology culture, preadolescent responsibility for parenting

Research purpose: consists in the conceptualization, theoretical substantiation and validation of the pedagogical model for capitalizing on technological education on the coordination of preadolescent training for the role of responsible parent.

Research objectives aim at: the determination and scientific interpretation of the theoretical foundations of technological education and education for parenting; the analysis of the curriculum in technological education on the dimension of preadolescent training for the role of responsible parent; establishing the particularities and the degree of formation of preadolescents for the role of responsible parent; conceptualizing the pedagogical model for capitalizing on technological education on the coordination of pre-adolescent training for the role of responsible parent; elaboration and experimental validation of the Preadolescent Training Program through the optional discipline „Life Skills" in the context of technological education; elaboration of scientific conclusions and recommendations on technological education in the perspective of training preadolescents for the role of responsible parent.

Scientific novelty and originality of the research is confirmed by the multidimensional theoretical-practical approach of technological culture in the training of preadolescents for the role of responsible parent; determining the theoretical foundations of technological education and education for parenting; description of the particularities and establishment of the degree of formation of preadolescents for the role of responsible parent; revealing the evolution of the scientific meanings of the operational concepts of research; conceptualization of the pedagogical model for capitalizing on technological education on the coordination of preadolescent training for the role of responsible parent.

The obtained research results contribute to solving an important scientific problem, whose research aims at: the pedagogical foundations of preadolescent training for the role of responsible parent, structured in the Pedagogical Model for capitalizing on technological education on the coordination of preadolescent training for the role of responsible parent, based on which the training of preadolescents through the optional discipline „Life skills" and experimental validation in public general education institutions, results that contributed to the development of the general theory of education.

Theoretical significance of the research results from the scientific establishment and interpretation of current trends in technology education in the training of preadolescents for the role of responsible parent in the context of parenting education, clarification of the scientific significance of technology culture; developing indicators and evaluation criteria for preadolescents for the role of responsible parents; elaboration and application of the methodology for assessing the degree of preparation of preadolescents for the exercise of the role of responsible parent and elaboration of scientific conclusions and recommendations on technological education in the perspective of forming the responsibility of preadolescents.

Practical value of the work consists in creating the pedagogical conditions necessary for the training of preadolescents for the role of responsible parent through: curriculum expertise in technological education; elaboration and experimental validation of the Preadolescent Training Program through the optional discipline „Life Skills" in the context of technological education, conceptualized based on the Pedagogical Model for capitalizing on technological education on the coordination of preadolescent training for the role of responsible parent; establishing the particularities of the development of preadolescent personality and in the scientific interpretation of the positive dynamics of parental responsibilities in the context of technological education.

Implementation of the scientific results: was achieved by experimental validation of pedagogical conditions for capitalizing on technological education in the perspective of training preadolescents for the role of responsible parent within „Emil Racoviță" National College and „Costache Negruzzi" National College in Iasi, by teaching the optional course „Life Skills", debates themed.

ROTARU Ioana Corina

POTENTIAL OF TECHNOLOGY EDUCATION IN TRAINING OF PREADOLESCENTS FOR THE ROLE OF RESPONSIBLE PARENT

Specialty: 531.01. – General theory of education

SUMMARY

of the doctoral thesis in Education Sciences

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Aprobat spre tipar Formatul hârtiei 60 x 84 1/16
Hârtie ofset. Tipar ofset Tiraj: 40 ex.
Coli de tipar: 2.0

Tipografia SC „Garomond Studio" SRL, str. I. Creangă, 1