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**THE DEVELOPMENT OF FINANCIAL SKILLS OF THE
STUDENTS IN THE GENERAL EDUCATION**

531.01 THE GENERAL THEORY OF EDUCATION

**THE SUMMARY
of the doctorate thesis in education sciences**

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The thesis has been elaborated within the Doctoral School in Education Sciences, “Ion Creangă” Pedagogical State University of Chişinău.

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The thesis and its summary can be consulted on the webpage of “Ion Creangă” Pedagogical State University of Chişinău (www.upsc.md) and on the webpage of ANACEC (www.cnaa.md).

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CONTENTS

CONCEPTUAL BENCHMARKS OF THE THESIS	4
CONTENT OF THE THESIS	7
GENERAL CONCLUSIONS AND RECOMMENDATIONS	22
BIBLIOGRAPHY	25
ANNOTATION	26
ANNOTATION	28

CONCEPTUAL BENCHMARKS OF THE THESIS

The topicality and importance of the research topic is determined by the low level of awareness of financial education issues in Romania and the Republic of Moldova. The problem of financial knowledge deficit is a global one that also affects Romania and the Republic of Moldova. Studies conducted by Standard & Poor's and the World Bank show that Romania ranks last in the European Union in terms of financial literacy, three quarters of the country's adult population not understanding concepts such as inflation rate, risk diversification or interest. [2]

The study *Financial Literacy of Adults in South East Europe* conducted by OECD in 2020 shows that in Moldova, performance on behaviour and attitude is considerably higher than on knowledge and also the highest across the region, helping make the Moldovan financial literacy score highest in the region overall. Financial knowledge in Romania is particularly low compared to the other countries in the sample. [10]

The description of the situation in the field of research and identification of research problems: The analysis of educational theory and practice in recent decades has shown that concrete actions have been taken to create a unitary pedagogical concept for social and financial inclusion of students.

The scientific research on the situation of financial education at the global level highlights the need to implement training programs for these skills among the population. For example, an international study by the Organization for Economic Co-operation and Development (OECD), published in 2005, looked at the situation of financial literacy in the countries included in the program. The results highlighted the following: in Australia, 67% of respondents indicated that they understood the notion of compound interest, but in the situation where they had to solve a problem using the concept, only 28% demonstrated a good level of understanding of the concept. A British study found that many consumers do not actively seek financial information. The information they receive is accidental, for example, when they pick up brochures from banks or have a casual conversation with a bank employee. [2]

Other studies, such as the **World Bank** [7] or OECD [4], *highlight the economic importance of financial education*. Relatively easy to guess, a poor knowledge in the financial field is associated with poverty, low level of education, belonging to rural areas, work in

subsistence agriculture, a situation presented for the case of Romania by Stănculescu. [5] The author notes that in order to increase the level of financial literacy, it is necessary to raise the quality of education, economic and social development, including through the development and implementation of financial education programs. The analysis of the current situation highlighted **the problem of research**, determined by the need to train students in general education in the field of financial culture, the preparation of educational subjects to make financial decisions. It is also necessary to train entrepreneurship and social integration skills among students from an interdisciplinary perspective.

The aim of the research is to develop and apply the pedagogical model of developing financial skills to students in general education.

The objectives of the research:

1. Identifying the conceptual benchmarks of financial education from an interdisciplinary perspective, in the context of education in Romania.
2. Defining the theoretical-practical aspects of the formation of financial skills in students in general education.
3. The substantiation and elaboration of pedagogical model for developing and evaluation of financial competencies in students in general education.
4. The experimental validation of the pedagogical model of developing and evaluation of financial skills in students in general education.

The research methodology complied with the launched purpose and objectives, the sources involved and included methods: *theoretical* – scientific documentation, theoretical modelling, analysis, generalization, synthesis, deduction; *empirical* – sociometric techniques (survey through questionnaire); *experimental* – psycho-pedagogical experiment, *statistical and mathematical* – methods of analysis and statistical interpretation of data (frequencies, Chi square test of association and interdependence, One Way Anova).

The important scientific problem solved lies in the theoretical-applied argumentation of the development of financial skills in students in general education based on the application of the pedagogical model for the development of financial skills from an interdisciplinary perspective.

The theoretical significance of the paper consists in substantiating the conceptual and methodological landmarks for the implementation of financial education in general education

from a transdisciplinary perspective; training students in a financial culture, preparing educational subjects to make financial decisions, facilitating the process of integration into society and shaping responsible personalities with a developed civic sense.

The applicative value of the paper consists in the widespread use of the pedagogical model for the development of financial skills in students in general education by including it in the CDS (curriculum at the school decision) and/or CDL (curriculum in the local development); the possibility of including the Model in methodological guides and teaching aids for teachers; applying the results in the professional training of teachers to financial education.

The implementation of scientific results was achieved through experimental research within the Technical College of Communications “Nicolae Vasilescu-Karpen” of Bacau, by the valorisation of the theoretical basis, teaching methods and by applying the *Pedagogical model of developing financial skills* through national and international scientific conferences, scientific publications and practical activities with students.

The approval of research results: The research results are reflected in a number of 14 scientific publications: methodological guides, course materials, monographs, including articles published in specialized journals.

Publications on the topic of the thesis: *“Financial education in Romania”, “The situation of financial literacy among adolescents”, “Transmitting democratic values through the development of social and civic skills among students”, “The development of social and civic skills in school”, “The development social skills, a means of preserving the freedom of the soul in the penitentiary environment ”, “ The development of financial skills in pre-university students”, “The creation and becoming of Bacău County in 7 days – cultural avant-garde”, “Financial education ”, “ Teaching auxiliary – means of efficiency of the instructive-educational process, guide of good practices for streamlining the learning process at the Technical College of Communications “Nicolae Vasilescu-Karpen, Bacau”, "Developing financial skills in school", "The importance of cultivating democratic values in school by developing specific skills", “Models for implementing financial education in schools”, “The portfolio, a way to enhance the student’s creativity”, “Modern methods, modern school”, “Teaching auxiliary – a means of streamlining the instructional-educational process”.*

The volume and structure of the thesis. The thesis contains: introduction, three chapters, conclusions and recommendations, annotation (Romanian, Russian, English), bibliography and annexes.

Key-words: financial education, financial literacy, civic education, entrepreneurship, curriculum, competences, non-formal education

CONTENT OF THESIS

The **Introduction** presents the argumentation of the topicality and importance of the research topic, formulates the purpose, objectives, the scientific research problem, elucidates the theoretical and practical value of the results, indicates the ways of approving the scientific results and summarizes the thesis sections.

The first chapter, **“Conceptual and methodological benchmarks of the formation of financial competencies in students in general education”**, includes fundamental theoretical aspects in the field of Financial Education. The definitions of financial education offered by different authors and different bodies are presented. For example, the definition of financial education established by the OECD in 2005 and endorsed by the leaders of the G20 countries in 2012 refers to: “the process by which consumers of financial products / investors improve their level of understanding of financial products, concepts and risk, so that through objective information, training and / or advice, they can develop the skills and self-confidence needed to be aware of financial risks and opportunities, to make informed decisions, to know where to look for help and to take other effective measures to improve the level of financial well-being. “ [2, p. 10]

It also presents the situation of financial education both internationally and nationally. Focusing on the case of Romania, we recall the analysis of the World Bank, which states the need for a national program for financial education in this country. It is stated that financial education, together with consumer protection, is necessary for the existence of large financial markets that serve the whole population, for improving the efficiency of the retail dimension of the financial market and for ensuring the long-term stability of the financial system. The report names the Romanian Banking Institute as an institution that should collaborate with the Ministry of Education for the development of specific educational programs, mentioning, at the same time, that financial institutions should also play a role in educating their customers.

According to the analysis made by Ciumara, in 2013, in order to identify the extent to which Romanian institutions are involved in the process of financial education of the population, the following results ensue: among the 41 commercial banks and branches of foreign credit institutions operating in Romania, only in the case of 11 institutions (less than 27% of the total) we identified an involvement in the issue of individual financial education. Even of these 11 institutions, several had only a small involvement in this regard, probably only 8 of them having a real and consistent concern (Raiffeisen Bank, The Romanian Commercial, The Royal Bank of Scotland, Volksbank, Transilvania Bank, Carpatica Commercial Bank, Unicredit Ţiriac, ING). [6]

Financial literacy is a key term of this paper, also presented in the first chapter. Financial literacy is the ability to understand how money works in the world: how someone manages to earn or make it, how that person manages it, how the individual invests and how a person donates it to help others. More specifically, it refers to the set of skills and knowledge that allows an individual to make effective and informed decisions, using all his financial resources. The increasing interest in personal finance is currently a major concern for many countries, including Australia, Canada, Japan, the United States and the United Kingdom. [8] In Romania, there is also a special focus on this area, as in 2016, the new framework plan was adopted by the Minister of Education for lower secondary education to be implemented in 2017-2018. Thus, Civic Culture becomes Social Education, and within this discipline the following will be studied: Critical Thinking and Children's Rights (5th grade), Intercultural Education (6th grade), Education for democratic citizenship (7th grade) and Economic and Financial Education (8th and 9th grades). [9]

Also in the first chapter of the paper there were presented the main studies conducted in the field both nationally and internationally. Also, the main theoretical aspects regarding financial competencies were treated in this first chapter. It started from the definition of concepts and the presentation of general aspects and ended with a correlation of social education with financial education. A combination of these elements creates “Financial Education”, which would aim at the intellectual and moral development of the student by developing relationship skills in society and the assimilation of knowledge in the financial field, to support them in making financial decisions.

Raising the level of knowledge in the financial field and developing social skills in young people, from an early age, is considered to be a strategy to improve the living standards of individuals that can lead to the development of the general economy. Having financial knowledge helps individuals make the right financial decisions, manage their own finances and avoid the risk of very high credit debt, which can become a problem from which many seem to escape.

The first chapter ended by formulating some general conclusions regarding the theoretical framework of the research topic.

Chapter 2, “**The pedagogical model for the developing of financial skills in general education students**”, presents the main information regarding the content of the Pedagogical model for the developing of financial skills in general education students. It started from the presentation of its major purpose and continued with the description of its main components. The pedagogical model of skills development was developed in the form of a curriculum at the school’s decision, respectively of an optional subject that was applied to an 11th grade. Also, the main teaching methods that will be adopted in order to apply the optional discipline “Financial Education” were presented.

The contextualization of the pedagogical model for the formation of financial skills was caused by the following:

- The conceptualization the curriculum in correspondence with the principles of student-centred, child-friendly school;
- The orientation towards a flexible, open, multifunctional curriculum, offered in a diversity of training (in and out of the classroom), able to encourage new approaches, such as personalized curriculum, community learning, etc.;
- The orientation towards a differentiated curriculum, which takes into account very different interests, talents, abilities, styles, conditions and learning contexts;
- The orientation towards an assessment that values life skills.

From a holistic perspective, all components of the Pedagogical Model, regardless of their particularities, are considered systems that have a certain structure. These elements are in determined relations with each other and together form an irreducible unity to the properties of the component parts, starting from the Recommendations of the European Commission and from the analysis of the current needs of the college.

The pedagogical model is conceptualized from an interdisciplinary perspective and aims to develop financial and civic skills, the spirit of initiative and entrepreneurship and mathematical skills to prepare graduates for the integration into the labour market.

Eight key competences have been established at European level, as follows: *Communication in the mother tongue, Communication in foreign languages, Mathematical and basic competences in science and technology, Digital competences, Social and civic competences, Learning to learn, Initiative and Entrepreneurship, Cultural Awareness and Expression.*

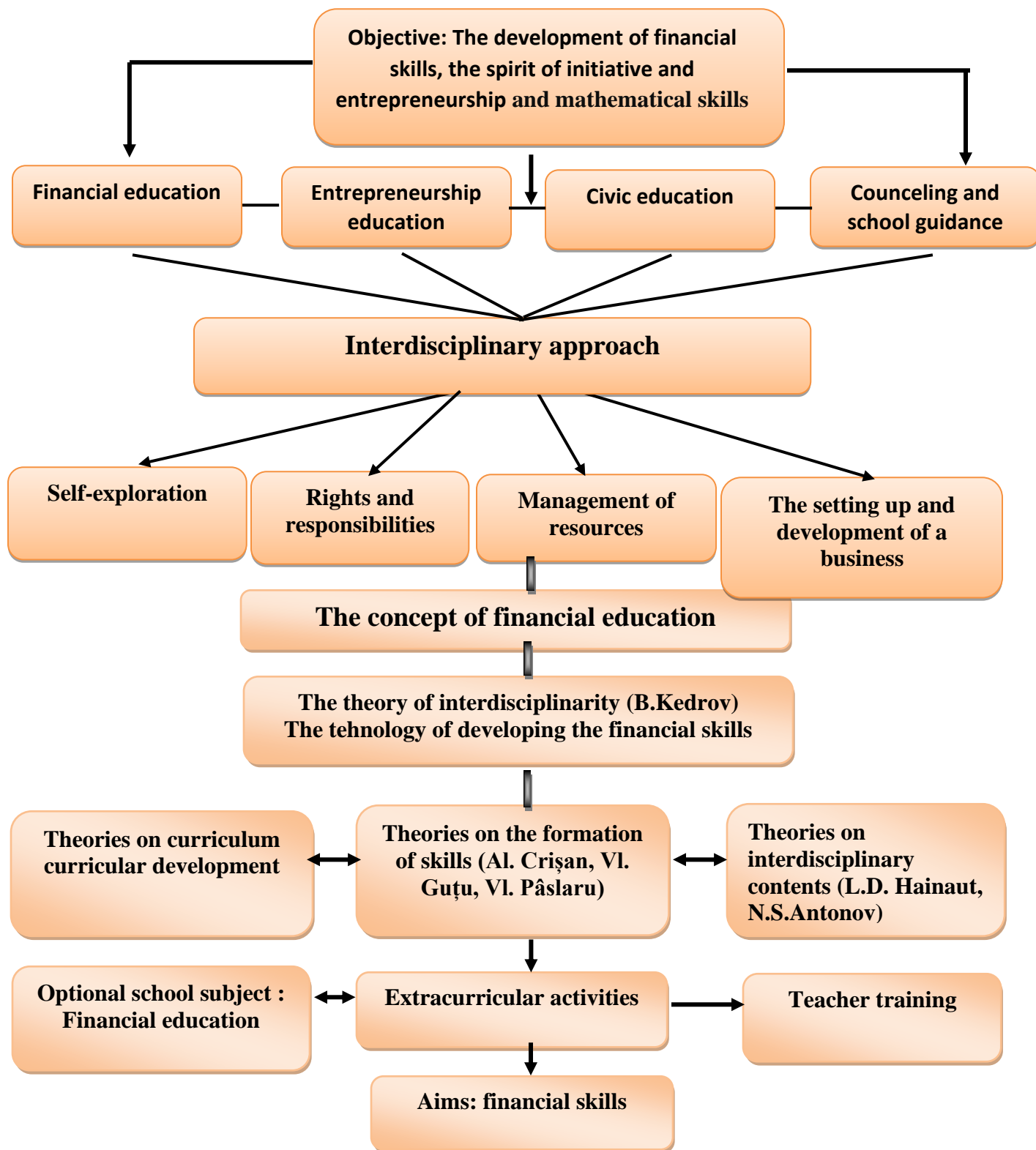
The model of developing financial skills in students in general education is reflected in Fig.1.

Having as a starting point the Curriculum at the school's decision, "Financial Education", approved in 2010, according to the specific needs of the Technical College of Communications "NVK", Bacau, a new Curriculum at the school's decision has been developed which represents an interdisciplinary approach to financial education.

The curriculum for *Financial Education* is a central curricular offer of optional subjects for high school, for the curricular area Man and society, designed for a time budget of 1 hour per week, during a school year. The discipline can be taught in any of the high school classes, under the conditions of the adequacy of the didactic approach to the age peculiarities of the students.

The school subject *Financial education* is an interdisciplinary approach that aims to develop financial and civic skills, initiative and entrepreneurship and mathematical skills.

The curriculum at the school's decision (CDS) offers the Romanian school the opportunity to configure its own educational offer, which should reflect its own goals, the specific educational philosophy, through the proposals of programs adapted to the learning environment.



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Starting from the training needs and the interests of each class of students, the best decisions can be made regarding the nature of these offers and a capital of projection and methodological adaptation (innovation) is created which will constitute a capital of professional experience and good practices relevant to achieving the quality of the educational act at the school level.

The configuration of this offer involves a continuous, inherent process of improvement and adaptation to the interests of students/parents and of adaption to the changes in the community, through review activities, based on information evaluations, applied methods, contexts and newly created conditions.[3]

In Chapter 3, “Methodological framework for the development of financial skills in general education students”, the general hypothesis of the research is formulated: *Pedagogical model for developing financial skills in general education students* will be effective if:

- It will be built on the holistic approach of financial skills;
- It will be approached from a curricular and interdisciplinary perspective;
- It will be built on interactive teaching technologies.

The third chapter includes experimental research on the development of financial skills in general education students and describes the field, stages, the material and research methods, presents a general feature of the teaching methodology applied in the psycho-pedagogical experiment. According to the research program, a questionnaire survey was developed for general education students to identify the level of financial knowledge. The questionnaire was taken over and adapted according to the imposed model, used in the “School bank” project, initiated by *Child and Youth Finance International*.

Before creating the finding experiment, the pre-testing stage was performed. The questionnaire was pretested on a number of 30 students from the Technical College of Communications “Nicolae Vasilescu-Karpen” of Bacău, randomly.

To test the validity of the questionnaire, the data obtained were entered into the database and the internal consistency coefficient Alpha Cronbach was calculated. The consistency of the questionnaire is very good, because the coefficient obtained is over 0.9.

The questionnaire thus constituted was applied in the ascertainment stage to a number of 240 students from grades IX-XII, within the Technical College of Communications “Nicolae Vasilescu-Karpen” of Bacău, randomly, and to a number of 180 students from the Republic of Moldova. At the end of the questionnaire, the students filled in the gender, the class they belong to and the environment of origin.

The purpose of the questionnaire survey was to identify the level of financial knowledge among adolescents.

The pedagogical experiment was carried out in order to determine the functionality of the *Pedagogical model for the formation of financial skills in students in general education*, which allowed us to validate the theoretical-applied foundations of this process.

The objectives of the pedagogical experiment:

- Identifying the opinions and theoretical-applied knowledge of students regarding financial education;
- Identifying the need to develop and implement a pedagogical model for students in general education, depending on certain criteria;
- The validation of the functionality of the pedagogical model for the formation of financial skills in students in general education;
- The evaluation and interpretation of the results obtained based on the experimentation of the theoretical-applied fundamentals elaborated, structured and capitalized through the functionality of the *Pedagogical Model for the formation of financial skills in students in general education*;
- The systematization of research results and realization of conclusions, predictions and recommendations.

The experimental approach was created and carried out in accordance with the conceptual-phenomenological framework of financial education, with the theoretical and methodological concepts presented in the first two chapters and took place in educational institutions, respectively in the Technical College of Communications “Nicolae Vasilescu-Karpen” of Bacău, Romania, on a stratified sample of 240 students / adolescents, of which 120

students enrolled in theoretical profile and 120 students enrolled in technical profile and on a sample of 180 students from the Republic of Moldova, of which 90 of students from grades X, XI and XII from the service profile and 90 students from grades X, XI and XII from the humanities profile. The students from the service profile are from the Mondustud-art College, and those from the theoretical profile are from the Pro-Success Theoretical High School. Also, it was intended to control several variables that could have intervened in changing the results, thus, the gender variable (Fig. 2 and fig.3) and class level (Fig.4, Fig. 5) were controlled, the subjects being chosen according to these criteria, in equal numbers.

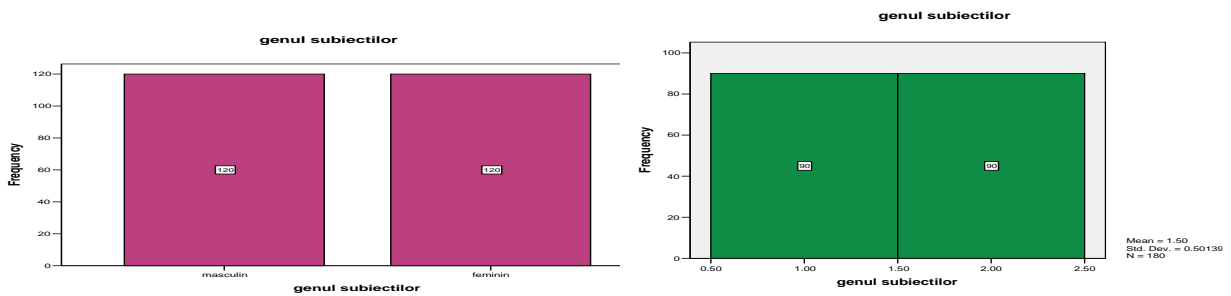


Fig.2. The gender of subjects in Romania Fig.3. The gender of subjects in the Republic of Moldova

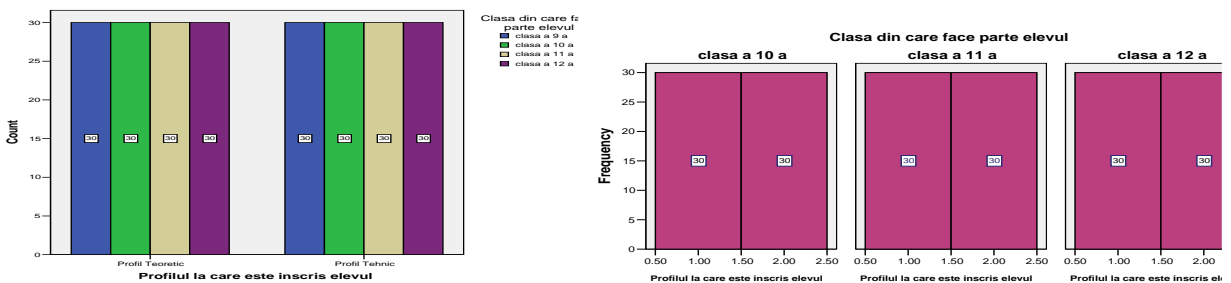


Fig. 4. The frequency of students according to grade and specialisation in Romania

Fig.5. The diagram of students' frequency according to specialization and grade in the Republic of Moldova

The research strategy included various forms, methods, procedures, techniques and investigative tools. In carrying out the investigative approach, the following methods were applied:

- *The scientific documentation* was manifested by reading the bibliographic sources in the field, the information from the specialized sites; ideas, essential fragments were noted and observed, the analysis, essentialisation, comparison of information, generalization, stratification and synthesis of the researched material were performed.
- *The historical method* ensured the chronological study of the investigated phenomenon and allowed us to make a short history of the implementation of financial education, both at national, international and educational level or in other forms of promotion.
- *The questionnaire method* was used to test students' knowledge, attitudes and skills related to the financial field.

The research hypotheses from this experimental stage for both Romania and the Republic of Moldova were the following:

1. There are significant differences between the theoretical and technical students in terms of knowledge of personal rights and a proactive attitude.
2. There are significant differences between the technical and theoretical students in terms of financial knowledge.
3. There are significant differences between the technical and theoretical students in terms of money management skills.
4. There are significant differences between the technical and theoretical students in terms of the intention to start a business.

Starting from these hypotheses, after completing the questionnaires by the subjects and after collecting the answers, we built a database that we analysed in SPSS. To use the appropriate tests, we checked the normality of the distribution, using the Kolmogorov-Smirnov test for each scale. Depending on the result of the Kolmogorov-Smirnov test, parametric (when the distribution was normal) and non-parametric (when the distribution was not normal) tests were applied.

The results obtained from the statistical analyses performed on students from the Republic of Moldova highlight the following: students who are enrolled in the theoretical profile do not have significantly less knowledge than students who are enrolled in the technical profile in terms of level of financial knowledge, personal rights and a proactive attitude, as well as a lower level of personal understanding.

Also, a higher money management capacity is observed in the students from the technical profile, compared to those from the theoretical profile.

The intention to start a business appears mainly to the students from the technical profile. The fact that they are familiar with practicing a trade, having in the background the experience of internships, gives them confidence and models of success. Statistical analyses performed on students in Romania highlighted the following results (we present only statistically significant results): *students enrolled in the theoretical profile have a lower level of knowledge about their rights* and skills to identify their national affiliation, to value their own people, compared to students who are enrolled in the technical profile.

Regarding *the knowledge in the financial field*, the statistical analyses revealed *a higher level of students from the technical profile*, compared to the students from the theoretical profile, there being a statistical interdependence between the two variables.

The ability to manage money is demonstrated at *a higher level by technical students*.

It has not been proved to be a direct link between the profile of the student and the entrepreneurial spirit, the differences identified not being statistically significant. On the other hand, regarding the civic spirit, respectively the students' initiative to get involved in social companies of voluntary type, the statistical analyses highlight a higher involvement of students from technical profile in social campaigns, compared to students enrolled in theoretical profile.

As can be seen, in three of the four dimensions, students enrolled in the theoretical profile have lower results. These results can be explained based on the fact that technical students go through specialized disciplines that include content that overlaps with that of Financial Education. For example, in the technological pathway, within the Technical College of Communications "Nicolae Vasilescu-Karpen", from Bacau, there are the following professional qualifications: *Computer technician operator, telecommunications technician, automation technician, automotive electrician technician, electrical installation technician, technician in economic activities*. [1]

Comparing the two studies, we notice that in both countries those who have a lower level of financial knowledge and a lower ability to manage money are students who belong to a theoretical education program.

This similar situation gives us the opportunity to choose the experimental group on which the pedagogical model of developing financial skills will be applied. As a result, having as variable the availability of the experimental subjects, the students from the “Nicolae Vasilescu-Karpen” Technical College of Communications of Bacau will be chosen.

These findings, together with the statistical results obtained from the ascertaining experiment, demonstrate the need to implement the pedagogical model of developing financial skills in students from the theoretical profile, specialization Social Sciences, 11th grade. These classes were chosen because the results of the hypothesis with number 10, respectively “*There are significant differences depending on the class and profile of the student in terms of level of financial knowledge*” highlighted the fact that **of the 120 students enrolled in the theoretical profile**, 30 are in the 10th grade. Of the 30 ninth grade students, **23 (or 30.3%) have a low level of financial knowledge**, and 7 (or 15.9%) have a high level of financial knowledge. Of the 30 students in the 10th grade, **23 (or 30.3%) have a low level of financial knowledge**, and 7 (or 15.9%) have a high level of financial knowledge. In the 11th grade, of the 30 students, 22 (or 28.9%) have a low level of financial knowledge and 8 (or 18.2%) have a high level of financial knowledge. 8 out of 30 students in the 12th grade have a low level of financial knowledge, while 22 or 50% have a high level of financial knowledge.

Therefore, the students from the 10th grade registered a lower level of financial knowledge, which requires the application of the pedagogical model in the next school year, on the same subjects.

In order to avoid the intervention of confounding variables in the present research, we will choose the same subjects that we will subject to the formative experiment as follows: we will create an experimental group and a control group.

Considering the fact that within the “N.V.K” College there are two classes of Theoretical Profile, the specialization Social Sciences, we allow ourselves to distribute each of them in a different group, the table below being illustrative.

Table1. The distribution of classes in the two participating groups

Experimental group	G1 (11 th grade A)
Control group	G2 (11 th grade B)

During the finding phase, both classes were included in the experiment. This time, in order to avoid the maturation effect, we chose one of them to constitute the control group, on which the pedagogical model of developing financial skills will not be applied.

In this case we have an experimental design pre-post test of non-equivalent groups. The curriculum at the school's decision, "Financial Education", was applied during an entire school year, respectively in the school year 2016-2017, in the 11th grade, theoretical profile class, specialization Social Sciences.

In order to avoid the problems of internal validity that may occur and that are connected to the subjects, the purpose of completing the optional subject "Financial Education", in the 11th grade, was kept secret, in the publicly displayed schedule being called "CDŞ". The same name was kept for the optional subject that applies to the parallel class.

Indeed, this measure does not present a maximum safety control regarding the effect of contamination, but this aspect can be considered as a limitation of the present research.

The optional subject "*Financial Education*" was taught by a teacher qualified in teaching Social and Human disciplines and the aim was to constantly follow the methodological suggestions present in the curriculum.

The formative experiment was conducted for one school year, respectively 8 calendar months, except for holidays and the days off from school.

This experiment is a classic experiment, because it is performed in its natural environment, in our case it is about the class. The table below illustrates how to perform the standard experiment, called the classic experiment:

Table 2. The classic experiment model

	The finding stage	The training stage	The control stage
Experimental group	<i>Pre-test</i> Dependent variable	<i>Intervention</i> Independent variable	<i>Post-test</i> Dependent variable
Control group	<i>Pre-test</i> Independent variable	-	<i>Post-test</i> Dependent variable

The purpose of the formative experiment was to develop financial skills by introducing optional subjects to students in general theoretical education.

Research objectives:

- Designing, organizing and carrying out didactic approaches to develop financial skills in students from a theoretical profile;
- The use of appropriate methods and techniques in the organization of teaching activities that stimulate the active and interactive involvement of the child in the learning and training process;
- Recording, monitoring and comparing the results obtained by the students from the experimental groups with those of the students from the control groups;
- The analysis of the influences exerted by applying this optional subject;

General hypothesis:

- *The introduction of the optional “Financial Education”, in the 11th grade, by the capitalisation of a modern, interactive didactic vision, determines the development of students’ financial skills.*

Specific hypotheses:

1. There are significant differences between the students in the experimental group and those in the control group in terms of knowledge of personal rights and a proactive attitude.
2. There are significant differences between the students in the experimental group and students in the control group in terms of financial knowledge, in the sense that students in the experimental group will score higher compared to students in the control group.
3. There are significant differences between the students in the experimental group and those in the control group in terms of money management skill.
4. There are significant differences between the students in the experimental group and those in the control group in terms of the intention to start a business.
5. There are significant differences between the students in the experimental group and those in the control group in terms of the perception of having the skills to start a business.

6. There are significant differences in the level of knowledge regarding the personal rights of 11th grade students, depending on the time of testing, in the sense that those belonging to the experimental group will have a higher level of knowledge of personal rights and manifesting a proactive attitude.
7. There are significant differences in the level of financial knowledge of 11th grade students, depending on the time of testing, in the sense that those belonging to the experimental group will have a higher level of financial knowledge.
8. There are significant differences in the money management skill of 11th grade students depending on the time of testing, in the sense that those belonging to the experimental group will demonstrate a higher money management skill.
9. There are significant differences in the intention of 11th grade students to start a business, depending on the time of testing, in the sense that those in the experimental group have a higher frequency in terms of the intention to start a business.
10. There are significant differences in the perception of having the skills to start a business of 11th grade students, depending on the time of testing, in the sense that those belonging to the experimental group will demonstrate a positive perception of having the skills needed to start a business.

Research variables:

- **The independent variable:**
 - The introduction of the optional subject: “*Financial Education*”
- **Dependent variables:**
 - the knowledge of rights and attitudes
 - the level of financial knowledge
 - money management skills
 - the intention to set up a business

The applied research took place within the Technical Communication College “Nicolae Vasilescu-Karpen” of Bacău, Romania, during the school year 2016-2017.

The sample of subjects used in the formative experiment stage consists of a sample of 30 students on whom the pedagogical model is applied and 30 students on whom the pedagogical model is not applied, constituting the control group. The before-and-after method was used in order to avoid errors.

At the base of the didactic research was a **methodological system** composed of: the pedagogical experiment, the method of systematic observation, the method of tests, the method of self-observation, the method of analysing the students' portfolios / products.

The pedagogical model was applied as follows: one hour per week, for 35 weeks, about 35 hours of training in the field of financial education, in total.

In order to identify the differences between the two classes included in the experiment, respectively 11th grade A and 11th grade B of theoretical profile, Social Sciences specialisation, the knowledge questionnaire initially applied in the ascertainment stage was applied.

Starting from the hypotheses presented above, after completing the questionnaires by the subjects and after collecting the answers, we built a database that we analysed in SPSS. Statistical analyses highlighted the effectiveness of the pedagogical model on increasing the level of knowledge and on the development of financial skills among students.

GENERAL CONCLUSIONS AND RECOMMENDATIONS

The research includes one of the topics of major interest to society, taking shape since 2007, following the statement presented by the European Commission, which promotes the importance of financial education at all ages, in order to increase the quality of life of citizens and reduce the risk of social and financial exclusion.

Starting from the analysis, specification, determination and interpretation of the theoretical and experimental aspects, but also from the data obtained in the pedagogical experiment, their quantitative and qualitative processing, we can conclude the following:

- The issue has been investigated both locally and nationally, in Europe and worldwide. The analysis of the theoretical basis and of the studies carried out by the researchers in the field highlighted the real need to implement solutions in order to develop financial skills, starting from the local level, addressing, in particular, the existing problems within the college where the experiment will be performed.
- The in-depth analysis of financial education has contributed to clarifying Romania's situation regarding the ways and forms in which financial education is carried out, both formally and informally, and which are the organisations that deal specifically with this issue. The implications of commercial banks in educating the population in the financial field were also highlighted.
- The situation of financial education in the general education system was analysed and the existence of school curricula addressing this issue was identified. The novelty of this paper is to adapt what already exists by adding new content that contributes to the development of students' financial skills, in order to develop more skills suggested by the European Commission.
- The synthesis of the experiment data demonstrated the veracity of the interdisciplinary approach in the process of developing financial skills in general education students, as well as confirming the effectiveness of pedagogical model for developing *financial skills* in general education students, from a curricular and interdisciplinary perspective, built on interactive teaching technologies.
- The developed pedagogical model following the carried out analyses was taught to an 11th grade, the time allocated to it being one hour per week, for 35 weeks. There

predominated practical applications, self-evaluation, inter-evaluation of results, promoting students' autonomy and critical thinking; real-life examples, problematization, simulation and case studies also predominate. Emphasis was also placed on teaching the theoretical basis, but more emphasis was placed on the application of theoretical aspects.

- The elaboration and substantiation of the *Pedagogical model for the formation of financial skills* ensured the experimental approach started over a period of one year (35 weeks). The model, which combines the theoretical-applied landmarks of Financial Education, has proven to be efficient, functional, and open to completion and development.
- The results of the pedagogical experiment demonstrated the efficiency of the application of the discipline "Financial Education". The re-evaluation of the students highlighted a higher level of financial knowledge and skills developed in them. During the school year, there was a permanent concern to promote involvement in educational projects that address the issue and in volunteering activities.
- The educational perspective in Romania would be the elaboration of a National Curriculum for general education, focused on a system of competencies, which would require competencies in the professional training of teachers for the social and financial inclusion of students.

Thus, the research results confirmed the solution of the **scientific problem of major importance**, which focused on the theoretical-applied argumentation of the development of financial skills in students in general education based on the application of the *Pedagogical Model for developing financial skills*, from an interdisciplinary perspective.

In line with the synthesis and conclusions made, we make the following **recommendations**:

1. Promotion of financial education at formal, non-formal and informal level.
2. Implementation of the Optional Curriculum on financial education for students and young people from the perspective of key competences for sustainability.
3. Promoting financial education through informal education: media, Radio, TV, etc.
4. Initial and continuous training of teachers for financial education.

5.The introduction of the optional subject “Financial Education” in the coming years, both to the theoretical profile and to the other existing profiles in the school where the experiment was conducted.

6.Promoting the school curriculum thus constituted to be taken over and included in the package of optional subjects and by the other colleges from Bacău County and not only;

7.Non-formal promotion of financial education by carrying out the educational project ***“Social and financial education of young people - The key to success!”***;

8.The possibility of adapting the school curriculum by adding new content and recently developed learning activities remains open – it is important to keep pace with the development of current financial services, as it is an area in continuous change and development.

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ADNOTARE

Remus Emanoil-Cazacu

Dezvoltarea competențelor financiare la elevii din învățământul general

Teză de doctor în pedagogie generală, Chișinău, 2021

Structura tezei: introducere, 3 capitole, concluzii și recomandări, bibliografie din 116 de titluri, 33 anexe, 153 pagini de text bază, 19 figuri, 5 tabele. Rezultatele obținute și conținuturile de bază ale lucrării sunt publicate în 14 publicații științifice.

Cuvinte-cheie: educație financiară, alfabetizare financiară, educație civică, educație antreprenorială, curriculum la decizia școlii, competențe, educație nonformală.

Scopul cercetării constă în elaborarea și aplicarea *Modelului pedagogic de formare a competențelor financiare* la elevii din învățământul general.

Obiectivele cercetării: identificarea reperelor conceptuale privind particularitățile educației financiare; identificarea nivelului de cunoștințe din domeniul educației financiare în rândul elevilor din învățământul general, în funcție de profil și nivelul de clasă, și stabilirea necesității elaborării și implementării *Modelului pedagogic de formare și dezvoltare a competențelor financiare* prin interpretarea datelor înregistrate; aprobarea experimentală și evaluarea eficienței *Modelului pedagogic de formare a competențelor financiare*.

Noutatea și originalitatea științifică a cercetării constă în faptul că a avut ca punct de plecare recomandările diferitelor organisme internaționale, fiind o temă de actualitate și de interes internațional. Plecând de la acestea, s-a realizat argumentarea teoretico-aplicativă a dezvoltării competențelor financiare la elevii din învățământul general, în baza aplicării *Modelului pedagogic de dezvoltare a competențelor financiare*.

Problema științifică importantă soluționată rezidă în argumentarea teoretico-aplicativă a dezvoltării competențelor financiare la elevii din învățământul general, în baza aplicării *Modelului pedagogic de dezvoltare a competențelor financiare*.

Semnificația teoretică a lucrării constă în fundamentarea reperelor conceptuale și metodologice pentru implementarea educației financiare în învățământul general; formarea la elevi a unei culturi financiare, pregătirea subiecților educaționali pentru a adopta decizii cu caracter financiar, înlesnirea procesului de integrare în societate și conturarea unor personalități responsabile, cu simț civic dezvoltat.

Valoarea aplicativă a lucrării rezidă în utilizarea pe scară largă a *Modelului pedagogic de dezvoltare a competențelor financiare* la elevii din ciclul liceal prin includerea acestuia în CDS și/ sau CDL; posibilitatea includerii modelului în ghiduri metodologice și suporturi didactice pentru diriginți.

Implementarea rezultatelor științifice s-a realizat prin intermediul cercetării experimentale din cadrul Colegiului Tehnic de Comunicații „Nicolae Vasilescu-Karpen”, din Bacău, prin valorificarea bazei teoretice, a metodelor didactice și prin aplicarea *Modelului pedagogic de formare a competențelor financiare*, prin intermediul conferințelor științifice naționale și internaționale, a publicațiilor științifice și a activităților practice cu elevii.

ANNOTATION

Remus Emanoil Cazacu

The development of financial skills of the students in the general education

Doctorate thesis in General Pedagogy, Chisinau, 2021

The structure of the thesis: introduction, 3 chapters, conclusions and recommendations, bibliography from 116 titles, 33 add-ons, 153 pages of text, 19 illustrations, 5 tables. The results obtained and the basal contents of the study have already been published in 14 scientific publications.

Key-words: financial education, financial literacy, civic education, entrepreneurship, curriculum, competences, non-formal education.

The aim of the research: consists of the collaboration and the application of the pedagogical model of building up financial abilities of the students in the pre-university teaching system.

The objectives of the research: the identification of conceptual bench-marks regarding the particularities of financial education; the identification of the level of knowledge in the financial field among the students in the pre-university education, taking into consideration the profile and the level of the classroom and the establishment of the necessity of the elaboration and the implementation of the pedagogical model of building-ups and the development of financial skills by interpreting the registered data, the experimental approbation and the evaluation of the efficiency of the pedagogical model of shaping financial skills.

The novelty and the scientific originality of the research consists in the fact that it had as a starting point the recommendation of different international institutions, due to the fact that it is a contemporary subject and of international interest. Starting with this idea, the theoretical – applicative argumentation of the development of financial abilities of the students of the pre-university education was realized with the help of the implementation of the educational model of the development of financial skills.

The important scientific problem solved resides in the theoretically-applied argumentation of the development of financial skills of the students in the pre-university

education, în this basis of the application of the pedagogical model of development of financial skills.

The theoretical signification of the thesis consists in the fundament of conceptual and methodological bench-marks for the implementation of financial education in the pre-university education; the shaping of a financial culture among the students, the preparation of the educational subjects to adopt decisions with financial character, the easement of the process of integration în the society and the shaping of responsible personalities with a development of civic sense.

The applicative value of the thesis resides in the practice on a large scale of the pedagogical model of the cultivation of financial skills among high school students, by including it în CDS and/ or CDL; the possibility of inclusion of the model in methodological guides and educational supports for head-teachers.

The development of scientific results were realized through the experimental research in The Technical College "Nicolae Vasilescu Karpen", Bacau, by the exploitation of the theory, of different teaching methods and by the application of the "Pedagogical model of shaping financial abilities" by scientific conferences and practical activities with students.

CAZACU EMANOIL REMUS

**THE DEVELOPMENT OF FINANCIAL SKILLS OF THE
STUDENTS IN THE GENERAL EDUCATION**

531.01 THE GENERAL THEORY OF EDUCATION

THE SUMMARY

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