

MSC 2020**International Scientific and Practical Conference «MAN. SOCIETY.
COMMUNICATION»****FINANCIAL GAME AS EFFECTIVE DEVELOPMENT FORM OF
FINANCIAL LITERACY COURSE**

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Abstract

The article is devoted to the issues of mastering the course of financial literacy by students of general educational institutions (on the example of educational institutions of the Novgorod region, Russian Federation). Official statistics and the results of surveys conducted by the authors of the target population group allowed us to conclude that the level of financial literacy in Russia is not high enough in comparison with the leading European countries. The authors proposed a new form of acquiring knowledge and skills in the field of finance - through conducting a financial game, based on the results of the analysis of the existing teaching methods and programs of the financial literacy course in Russia. Its effectiveness has been confirmed in practice: the results of entrance and exit testing of participants and survey data are presented. The article provides a brief description of the rules of the proposed financial game, its basic concept. The authors have determined the optimal conditions for the educational environment of the institution for the financial game, but at the same time, they have proposed options for optimization for the specific capabilities of the general education institution. Particular attention is paid to those aspects of the game, thanks to which the participants acquire the key knowledge and skills necessary for the successful mastering of the course. In addition, recommendations are proposed for the conduct of the game in organizations for the recreation of children and their recovery, in organizations for orphans and children left without parental care.

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Keywords: Educational environment, educational process, finance, financial game, financial literacy

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1. Introduction

In the modern world, education is faced with the most important task - to provide students with relevant knowledge and skills, including those that can become a sufficient basis for self-education in the future. This is necessary, since human life is constantly changing, which is largely due to the emergence of new technologies. If we turn to statistical data, we can note the rather low levels of digital, financial and legal literacy of the population of Russia in comparison with the leading countries of Europe (Bongini et al., 2018). For example, the financial literacy index of the Russian population is 12.12 points out of 21, and good knowledge in the field of finance is mainly shown by the population over the age of 30 (Medved, 2018). One of the mechanisms for increasing these indicators is the introduction of new subjects into the curricula of general education institutions. In addition, it implements an important principle of modern quality education - compliance with the challenges of society.

Nowadays, financial literacy is not limited only to a person's ability to keep track of their income and expenses. Financial literacy is a set of knowledge, competencies of a person and attitudes in the field of financial behavior, which allow improving financial situation and the quality of life. In addition, the degree to which they understand terms and events in the sphere of finance depends on the level of financial literacy of a person.

A high level of financial literacy of a person presupposes the ability to effectively manage personal finances not only in the short term, but also in the long term, taking into account the changes taking place in the world in general and in the state in particular. Thus, teaching the basics of financial literacy should provide an opportunity for students to acquire the knowledge and skills necessary for later life.

2. Problem Statement

A course in financial literacy has been taught since 2016 in educational institutions of Russia. The course program was developed by the Ministry of Education and Science of the Russian Federation (since 2018, the Ministry of Education of the Russian Federation) together with the Ministry of Finance of the Russian Federation and the Central Bank of the Russian Federation. Weeks of financial literacy, championships and olympiads in financial literacy are held for students of general education institutions, as well as for students of higher educational institutions as part of the implementation of this joint project; educational materials are regularly published. These measures are included in the Strategy for Improving Financial Literacy in the Russian Federation for 2017-2023, which was approved by the Order of the Government of the Russian Federation dated September 25, 2017 No. 2039-r. (Order of the Government of the Russian Federation, 2017).

2.1. Analysis of foreign experience in teaching financial literacy course

The introduction of the financial literacy course in the programs of educational organizations in Europe happened much earlier, for example, in France - back in 2003, if we compare with foreign experience. In Europe, the course includes theory on the following topics: money and family relationships, organization of joint family budget management, personal insurance, consumer lending, mortgages,

retirement planning, inheritance and transfer of property, the securities market and investments (Ben, 2016). After studying the theoretical material on each of the topics, several practical sessions are expected, in which problem solving and role-playing games are provided. It is important to note that sufficient attention is paid to mastering the course: it is not considered less important than other subjects (Grass et al., 2017).

2.2. Analysis of the effectiveness of the existing course of financial literacy in Russia

The system for improving the financial literacy of the Russian population is constantly being improved. If we consider the program of the course on financial literacy for students of general education institutions, then quite a lot of new methodological developments have appeared since 2016 that can be used in teaching; the number of participants in events in this area is increasing every year, but the learning outcomes still cannot be considered satisfactory (Fedorova, 2017). This thesis can be confirmed by the results of a study conducted in the Novgorod region in 2020. Target group is young people aged 15 to 21: high school students of general education institutions, students of higher educational institutions and vocational education institutions. All of them, in one form or another, have mastered a course in financial literacy. The study involved 100 respondents from Veliky Novgorod and the administrative centers of districts of the Novgorod region. The participants had to answer 27 questions that related to the practical application of the knowledge available for study in the framework of the financial literacy course. According to the survey results, only 57% of respondents keep records of their finances on an ongoing basis (mainly in special applications). When it was possible to choose several options, respondents were asked to indicate those financial services that are most difficult to understand. Thus, the most difficult thing for respondents to understand is investment products - 59%. Deposits, investments and microloans are difficult to understand for 25% and 24% of survey participants, respectively, loans - for 20%, insurance - for 28%. As a result, 71% of respondents note that there is a need to improve the level of financial literacy. Thus, there is a problem of insufficiently effective mastering of the financial literacy course by students of general education institutions.

3. Research Questions

The main questions formulated in the work and acting as research objectives are the following:

3.1. Identification of factors that impede the most effective development of the financial literacy course by students of educational institutions

3.2. Identification of factors that impede the most effective development of the financial literacy course by students of educational institutions

4. Purpose of the Study

The purpose of the study is to propose a form of mastering the course of financial literacy for educational institutions, which will improve the efficiency of the process of mastering the course, minimizing the possible influence of the above factors.

5. Research Methods

An experiment was carried out in a general educational institution of the Novgorod region to confirm the hypothesis that in order to increase the efficiency of mastering the course of financial literacy, it is most expedient to organize the educational process in the form of a game. It was attended by students of the 10th grade (52 people) and the administration of a general educational institution.

The experiment took place in several stages. Initially, students were tested on financial literacy. The topics, knowledge of which was tested in the tests, coincided at the beginning and at the end of the experiment to obtain reliable information. Then a financial game was organized for the students, which took place during the week. The topics the game was aimed at corresponded to the topics the knowledge of which was tested by tests. After the final testing, the process of collecting feedback from the participants of the experiment was organized; the mechanisms were analyzed for adapting the game for conducting in other institutions.

6. Findings

Of course, it is important to note that the existence of this problem is not due to the lack of high-quality methodological and reference materials or the lack of formation of an educational environment functioning effectively, but a number of other reasons, which will be considered below. The conducted research in the Novgorod region made it possible to identify the following factors that hinder the most effective development of the financial literacy course by students of general education institutions.

Firstly, as mentioned earlier, the financial literacy course was introduced into the curriculum of general educational institutions not so long ago, therefore, many consider it a less important subject than others. The time allotted for mastering the course by high school students is used for additional lessons in preparation for the Unified State Exam (for grades 10 and 11) or for the General State Exam (for grades 9).

Secondly, one of the factors reducing the effectiveness of course development is the insufficient competence of teachers. This problem is especially relevant for educational institutions in districts where there is a shortage of teaching staff (Rubtsova & Sycheva, 2018). Teaching a course in financial literacy presupposes knowledge of modern trends, constant monitoring of changes taking place in society, broadcasting successful experience. All this makes high demands on the competencies and knowledge of the teacher who can teach the course (Gurov & Khamzina, 2019).

Thirdly, the effective development of the financial literacy course is hindered by the personal disinterest of students, which is most often due to the standard organization of the educational process (Fedorova, 2017). It is impossible to realize one of the main goals of introducing a financial literacy course into the program - the acquisition of the most important knowledge and competencies by students for a successful existence in the modern world with this approach.

If we consider the generally accepted organization of the process of mastering the course of financial literacy, then it should be noted that the theory prevails over practice, which basically boils down to solving problems on the topics covered by the course (Tolkacheva, 2019). Most students cannot immediately apply knowledge in real life, and solving problems does not allow them to form the competencies they need in the future, without which it is difficult to master new and correspond to changes. In other words, students

do not gain personal experience; they do not form their own attitudes of financial behavior. An experiment carried out in one of the educational institutions of the Novgorod region made it possible to confirm the hypothesis: the educational process should be organized in the form of a game in order to increase the efficiency of mastering the course of financial literacy. In addition, the effectiveness of this form does not decrease as a result of the action of factors that negatively affect the development of the course in the standard form, which fully corresponds to the purpose of the study. Further, the results of the experiment will be presented, which will justify this conclusion and a description of the concept of the proposed financial game.

6.1. Results of an experiment confirming the effectiveness of the proposed financial game

Students were given a test before the financial game consisting of 25 questions, which were aimed at testing general knowledge on the following topics: personal finance, banking products, insurance, business fundamentals, and the financial system of the Russian Federation. The test contained both theoretical and practical tasks. The maximum score for the test is 25, one point for the correct answer to a question. The same system of knowledge testing was provided after the financial game. According to the results of preliminary testing, the most difficult topics for students turned out to be: banking products, insurance, the financial system of the Russian Federation, since 38 students out of 52 could not score more than 2 points for each of these topics. If we analyze the statistics on other topics, then only 11 participants received the maximum score on the topic “Personal finance”, and only 5 on the topic “Fundamentals of entrepreneurship”. These results also cannot be called satisfactory.

The test results after the financial game showed that 49 out of 52 students successfully mastered the course: they scored at least 4 points for each topic. The students took less time to complete the test after the financial game: they coped faster with solving situational problems, and the answers to theoretical questions did not cause the previous difficulties. Comparison of the test results before and after the financial game allows us to conclude about the effectiveness of this form of mastering the financial literacy course. Thus, it seems appropriate to describe the concept of the proposed financial game.

6.2. Financial game concept

The goal of the financial game is to gain knowledge, to develop competencies and attitudes in the field of financial behavior, which will further improve financial situation and improve the quality of life. The game provides various roles for students, which they choose on their own. This allows them to set a goal for themselves, and then find the means to achieve it, taking into account the obligations and responsibilities that arise (Snider, 2018).

One lesson is enough to explain the rules of the game. Recommended number of participants is more than 20. Each participant in the financial game is issued a game bank card, which contains the following data: last name, first name, patronymic, individual number, which contains the class number (number or number and letter) and the student's serial number in the class list. Initially, all game participants have an equal amount of game currency on the card. All operations are taken into account by the organizers. Game participants must fill out a google form containing the following fields to perform a transaction: code of the

recipient of funds, code of the sender of funds, reason. Statistics are kept for each participant in the game and for the types of operations.

The financial game simulates the financial system of the state, consisting of the following elements:

- households;
- entrepreneurial community;
- commercial banks;
- insurance organizations;
- Central Bank, government bodies (Yang et al., 2018).

Each participant in the game can choose one or several spheres, consistent with each other, for the activity in the game, depending on the goal. The exception is the element of the system "Central Bank, government bodies", whose work is supported by a teacher teaching a financial literacy course and representatives of the administration of a general education institution. This element of the system is responsible for the additional emission of game currency (the decision is made based on the statistics of operations) and for organizing government orders in the game. State order is a task from the administration of an educational institution or from a teacher (for example, holding a festive event or quiz). An auction is held in the financial game in order to determine which of the students will fulfill the state order, only the cost of the order does not increase, but decreases. It is important to note that the fulfillment of the state order is one of the main forms of mastering theoretical knowledge by students (Chaiphath, 2019). Activity within the household involves the use of opportunities that are provided by other elements of the system in the game. The activity as an employee in game organizations of other elements is possible. If one or more students decide to fulfill government orders or provide services in the game (for example, the services of a photographer, designer, journalist, etc.), it is necessary to register as an individual entrepreneur or enterprise through the government authorities. It also allows the teacher to regulate the activity in the game: if the provision of a service is contrary to the charter of a general education institution, registration may be refused. The enterprise is created for a specific purpose, the earned game money is distributed among the members of the enterprise in proportion to their initial investment. Events and the schedule for the provision of services by enterprises are issued in electronic form in the form of a calendar, to which all participants in the game have access. The game provides for several commercial banks and insurance organizations. In addition, students can create their own organizations, but this opportunity is not realizable when conducting a financial game during the week. Initially, there are three commercial banks in the game, the conditions of lending and opening deposits in which are different: the interest varies depending on the degree of risk. The scenario of the game involves the closure of one of the banks, so students are given complete information about each bank, which will allow them to make the necessary calculations to minimize the risk of losing money (Swiecka et al., 2020). The same is offered for insurance companies.

The winners are awarded in nominations, as well as an auction of prizes is held from a general education institution to increase the interest of students in completing the financial game. The presence of various nominations makes it possible for students not to set the only goal in the game - the accumulation of money (Zokaityte, 2016).

As stated earlier, participating in the proposed financial game allows students to explore several of the main topics that have been tested for knowledge. In the future, it is planned to develop a system of financial games for each specific block of the financial literacy course.

6.3. Recommendations for conducting a financial game in organizations for the recreation of children and their recovery, as well as in organizations for orphans and children left without parental care

The proposed concept of a financial game can be successfully implemented not only in educational institutions, but also in organizations for children's recreation and their recovery, as well as in organizations for orphans and children left without parental care (Vieira et al., 2017). The following recommendations should be taken into account to do this:

- optimize the period during which a financial game is held in the organization;
- select options for government assignments and prizes in the game that match the capabilities of the organization;
- if the participants do not have gadgets, provide another communication option to record operations in the game.

7. Conclusion

Carrying out a financial game in a general education institution made it possible to increase the efficiency of the process of mastering the financial literacy course. The obtained result is fully consistent with the purpose of the study, since the effectiveness of the financial game does not decrease under the influence of the factors established earlier.

First, the administration of the general education institution is involved in the financial game, which controls the process. This eliminates the use of financial literacy class hours for other subjects.

Secondly, the financial game is conducted according to the proposed rules, which makes it possible not to impose too high requirements on the competence of the teacher, which means that this form of mastering the course becomes available to all educational institutions.

Thirdly, the financial game is a non-standard form of mastering the course, which increases the involvement of students in the educational process. The experiment showed that they are interested and take an active part in the game. The results of testing on the topics of the course after the financial game confirm that the participants have acquired new knowledge and competencies in the field of finance; they have formed attitudes of financial behavior. In addition, the concept of the game involves the acquisition of key soft-skills by the participants: teamwork, leadership, communication (it is necessary to communicate with the school administration, teachers, and classmates and primary school students) (Financial Literacy Standards and Teaching Best Practices, 2020).

It is important to note that the financial game is integrated into the educational process without interfering with the study of other subjects. All interaction provided for in the game is realized during financial literacy lessons or during breaks. Some of the activities within the game refer to extracurricular activities that students have the opportunity to usefully spend.

Thus, it seems appropriate to recommend mastering the course of financial literacy in the form of a financial game. The flexible concept of the proposed game allows adapting it to the capabilities of the educational environment of the institution, while maintaining the effectiveness of the course development process.

References

- Ben, J. M. (2016). Pedagogy of Financial Education among College Students. *Economics and Culture*; 13(2), 23-34. <https://doi.org/10.1515/jec-2016-0017>
- Bongini, P., Iannello, P., & Rinaldi, E. E. (2018). The challenge of assessing financial literacy: alternative data analysis methods within the Italian context. *Empirical Res Voc Ed Train* 10, 12. <https://doi.org/10.1186/s40461-018-0073-8>
- Chaiphath, C. (2019). Improving Financial Literacy of Undergraduate Students with Supplementary Financial Lessons: A Case of Practical Economics for Daily Life. *TEM Journal*, 8(2), 492-497. <https://doi.org/10.18421/TEM82-24>
- Fedorova, O. A. (2017). Obrazovatel'naya sreda razvitiya lichnostnogo potentsiala podrastayushchego pokoleniya [The educational environment for the development of the personal potential of the younger generation]. *Sovremennyye naukoymkiye tekhnologii* [Modern high technologies], 9, 151-155.
- Financial Literacy Standards and Teaching Best Practices. (2020). <https://www.financialeducatorsCouncil.org/>
- Grass, T. P., Petrishchev, V. I., & Krashennnikova, A. E. (2017). Osobennosti formirovaniya finansovoy gramotnosti podrastayushchikh pokoleniy v SSHA i Kanade [Features of the formation of financial literacy of the younger generations in the USA and Canada]. *Vestnik KGPU imeni V.P. Astaf'yev* [Bulletin of the KSPU named after V.P. Astafiev], 2(40), 11-17.
- Gurov, V. N., & Khamzina, E. V. (2019). Finansovaya gramotnost' rukovoditelya obrazovatel'noy organizatsii kak instrument effektivnogo upravleniya obshchey shkoly, funktsioniruyushchey v neblagopriyatnykh sotsial'nykh usloviyakh [Financial literacy of the head of an educational organization as an instrument of effective management of a general school operating in unfavorable social conditions]. *Mir nauki, kul'tury, obrazovaniya* [The world of science, culture and education], 3(76), 148.
- Medved, I. V. (2018). K voprosu o finansovoy gramotnosti shkol'nikov [On the issue of financial literacy of schoolchildren]. *Problemy sovremennogo pedagogicheskogo obrazovaniya* [Problems of modern teacher education], 58(4), 166-170.
- Order of the Government of the Russian Federation. (2017). "On the Approval of the Strategy for Improving Financial Literacy in the Russian Federation for 2017-2023" of 09.25.2017 No. 2039-r. Retrieved May 17, 2020, from <https://www.garant.ru/products/ipo/prime/doc/71675558/>
- Rubtsova, O. L., & Sycheva, I. A. (2018). Finansovaya kompetentnost' pedagoga kak element formirovaniya finansovoy gramotnosti obuchayushchegosya [Financial competence of a teacher as an element of the formation of student's financial literacy]. *Problemy sovremennogo pedagogicheskogo obrazovaniya* [Problems of modern teacher education], 60(2), 304-307.
- Snider, S. (2018, August 28). *Do Financial Literacy Courses Work?* <https://money.usnews.com/money/personal-finance/family-finance/articles/>
- Swiecka, B., Yeşildağ, E., Özen, E., & Grima, S. (2020). Financial Literacy: The Case of Poland. *Sustainability* 2020, 12(2), 700. <https://doi.org/10.3390/su12020700>
- Tolkacheva, S. V. (2019). *Finansovaya gramotnost'. Tsifrovoy mir: uchebnik dlya obrazovatel'nykh organizatsiy* [Financial literacy The digital world: a textbook for educational organizations]. Prosveschenie.
- Vieira, K. M., Valcanover, V. M., & Brutti, F. (2017). Learning finances in an easy and fun way: an experience with public schools students. *Revista Ibero-Americana de Estudos em Educação*. 12, 845-861. <https://doi.org/10.21723/riaee.v12.n2.8479>
- Yang, S., Ishtiaq, M., & Anwar, M. (2018). Enterprise Risk Management Practices and Firm Performance, the Mediating Role of Competitive Advantage and the Moderating Role of Financial Literacy. *Risk Financial Manag*, 11, 35. <https://doi.org/10.3390/jrfm11030035>
- Zokaityte, A. (2016). A Financial Literacy Measure: Gendering and Contextualising Financial Technicalities. *Oñati Socio-Legal Series*, 6(1), 26-61.