

ANALYSIS OF EDUCATION ON FINANCIAL LITERACY AROUND THE WORLD AND BULGARIA

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Abstract. *In this article, a comparative analysis is made on studying basic financial concepts such as money, income, budget, transactions, payments, currency, financial risk, taxes, etc. in some EU countries. The problem of financial literacy in the curricula of Bulgaria, Germany, Finland, Estonia, England was explored. Innovative practices for implementing financial literacy in the curricula and the possibility for transferring those practices into our educational system are discussed. The results of the analysis show that studying basic financial concepts and their application gives best results in classes in Mathematics, Technology and Entrepreneurship, IT. The study conducted reveals the current state of teaching financial literacy in the educational systems of some European countries.*

Key words: Financial Literacy, Financial Concepts.

Students are the consumers of the future [1]. They are the most appropriate target group for teaching financial literacy to avoid future mistakes in making various financial decisions.

According to Prof. Francis Gipson once children start to do math, that is the beginning of financial literacy. It is never too early to start the journey to good financial habits [11]. To successfully reach the end point of such a journey requires a systematic approach to forming attitudes, knowledge and understanding of financial processes.

However, there is the question of how to approach students so that what is taught is understandable and they put it into practice in the future. It is important to make links with real life and give practical examples of where to apply their knowledge.

An analogous approach to addressing this issue can be found in the studies of Prof. Grozdev [3]. Practical financial case studies are also a key element in the National Olympiad of Financial Literacy in Bulgaria, which has been organized for the fifth consecutive year. The mission of the Olympiad is to draw attention to the crucial importance of mathematical knowledge in improving the financial literacy of the population [3].

Falahati and Paim [4] noted in their work that school curricula should include financial literacy programs to improve levels. In a recent study, it was also stated that compulsory financial education subjects will help develop students' financial knowledge in both primary and secondary school [5].

The financial crisis of 2008, characterized in part by mounting losses for individuals, sparked interest in better understanding how to encourage smarter saving and borrowing behavior. The ability of individuals to make informed financial decisions is critical to the development of sound personal finances, which can contribute to a more efficient allocation of financial resources and greater financial stability at both the micro and macro levels [6].

The impact of crises and changes in financial markets on households and individual well-being has heightened many countries' concerns that their citizens lack the knowledge, tools and skills needed to make informed economic and financial decisions [7].

Evelina Slavkova [12] based on a sociological survey commented that we are producing an anxious generation that is worried about how they will fare financially in the future. The survey is representative of young people aged 15-29 and shows that 45% of the 800 young people surveyed are worried about financial problems in the future. In another study, Reni Minkova [13] commented that the fastest growing age group of indebted persons in our country is that of young people under 25. "The data confirm the startling trend that the low level of financial literacy among young people is already turning them into debtors at a very young age".

Efforts to improve financial literacy can be an important component of efforts to increase savings and credit levels of the poorest and most vulnerable consumers [8]. Teaching financial literacy is seen as an important issue throughout the world and different countries have developed different programs and strategies to promote it. As a result of awareness of the issue, several countries have made changes to their education systems, realizing that changing attitudes towards finance must start in primary and secondary school.

In countries such as Australia, Canada, USA, Brazil, Singapore, India, etc., financial education is a compulsory part of the curriculum. Financial topics are covered in mathematics, career and citizenship education,

economics and social studies. We look at the curricula of Estonia and Finland as the European Union countries that achieved the highest scores on the PISA 2018 survey of financial literacy among students [9, 14]. So too the curricula in Germany and England as the largest economies by nominal GDP in Europe, according to the International Monetary Fund 2021 [15].

The following table provides a comparative analysis showing the place of financial topics in the curricula of Estonia, Finland, Germany, England and Bulgaria.

Table 1. Financial literacy topics in primary and secondary schools in EU countries

Country	Study subject	Finance related topic	Stage / Age	Innovative practices	
Estonia	Social Sciences – Humanities, Economics	– The relationship between education and the labor market – Family and personal budgeting – How are salaries received? – Consumption and saving	Elementary school	The month of money wisdom	
		– Necessity of tax systems for the functioning of the state – Individual and national budget – Basics of entrepreneurship – Credit, credit risks	High school	Success and Action Program Studya Edu OÜ	
	Mathematics	– Amount – Expense	Elementary school	Eesti Pangaliit – European money quiz	
		– Simple interest – Wages and taxes – Fundamentals of financial mathematics – Risks in taking quick loans – Percentage calculation	High school		
		Social sciences	– Spending and managing money – Different forms of entrepreneurship – Personal economic activity		Elementary school
			– Basics of entrepreneurship – Consumption and investment – Credit, credit risks – Pension funds		High school
Finland	Mathematics	– Value for money – I want and need a relationship with family and personal budget	Elementary school	The Finnish financial institution Zaldo – a gamified learning environment Economic Guru – competition for students Onni program – students to students (link)	
		Percentage calculation	High school		
	Home Economics	– Family and personal budget – Need and desire – Where do the salaries come from?			
		Mathematics	– Spending, saving – Percentage – Interest rate		7-14 years
Germany	Social and political sciences		– Basics of budget planning – Savings, lending, debt management – Making an informed financial decision – Influence of advertising on eating	12-16 years	Money Fit – through interactive games, quizzes and simulations. Börsenspiel – a stock market simulation game

	Economy and Right	<ul style="list-style-type: none"> - Banking and financial institutions - Environmental and social responsibility axes and social security 	16-18 years	Finanzchecker – a digital tool for financial advice.
England	Civic education	<ul style="list-style-type: none"> - What represent the money there and sources and the shapes under which are coming the money - Different elections for saving and spending - The risks from gambling 	5-11 years	Life Savers school savings club
		<ul style="list-style-type: none"> - Appreciates the attitude to the finances and long - Social and moral dilemmas regarding the use of the money - Where yes get support at taking on financial decisions 	11-16 years	MyBnk – the links between the money and the environment
	Mathematics	<ul style="list-style-type: none"> - Percentage - Income and expenses - Loans and debts - Budgeting and saving - Financial products 	14-16 years	Money Twist – an interactive financial program
Bulgaria	Geography	<ul style="list-style-type: none"> - Basics of the economic system - What is a farm? - Value and natural indicators of economic development 	5, 6, 9 class	National Olympiad on Financial Literacy
	Mathematics	<ul style="list-style-type: none"> - Interest - Discounts on purchases - Deposit - Interest period - Interest rate - Initial capital - Amount after interest 	5th grade 10th grade	
	Technology and entrepreneurship	<ul style="list-style-type: none"> - Economic problems – “what”, “how” and “for whom” to produce. - Economy of the company - Demand and supply - Types of markets - Financial documents 	8.9 grade	

In the Bulgarian education system, topics related to financial literacy are gradually finding their place in the curricula. Although there is no separate subject devoted entirely to financial education, elements of this subject are included in various subjects as part of the primary, lower secondary and upper secondary curricula.

Mathematics topics in Grade 5 address problems related to calculating percentages and basic ideas of simple interest, as well as recognizing examples from everyday life related to finance (e.g., purchase discounts, promotional pricing, etc.) [16].

Geography and Economics topics in Grade 5 examine the major economic sectors and how the country’s economy functions, as well as the impact of the global economy. First answers to the question what an economy is defined [16].

This is the best time to start systematic and targeted financial lit-

eracy training. For example, in mathematics classes, by studying percentages, students can take on the role of a trader or a customer and, in the form of a game, apply their knowledge to a real-life situation. They are introduced to financial concepts such as discount, income for a trader, cost for a customer, final price, saving. Game models are present in the innovative practices in Finland (Zaldo), Germany (Börsenspiel) as well as empathy in MoneyFit.

The topic Capital Problems in 7th grade math deals with economic concepts such as inflation, simple and compound interest, initial capital, deposit, loan, interest rate, discount.

The subject in which financial topics are most heavily covered is Technology and Entrepreneurship with Grade 8 addressing topics related to budgeting and understanding basic financial terms such as capital, profit and cost. Emphasis falls on the role of business actors in solving basic economic problems – ‘what’, ‘how’ and ‘for whom’ to produce. The various functions of money are examined.

In the 9th grade, the topics of Technology and Entrepreneurship pay special attention to the economics of the company. They analyze a firm’s revenues and costs, what competition is, supply and demand processes and how they depend on or shape the market, and work with financial statements.

In the 9th grade Geography and Economics topics, value and natural indicators of economic development are distinguished

In Grade 10, the Progressions section of the mathematics subject deals with financial concepts such as deposit (deposit), interest period, interest rate, loan, annuity, initial capital, repayment, amount.

A clear system of instruction and precise criteria for assessing the learning outcome are necessary for the process of financial literacy formation among students to be effective. However, these are also the main challenges to integrating financial education.

The episodic presence of financial topics in our education system prevents students from forming lasting knowledge and understanding of financial concepts, finding their practical applicability in their daily lives, and realizing the importance of financial literacy for the well-being of society.

For example, in mathematics in grade 5, the concept of percentage is

introduced, problems related to simple interest are considered – a total of 6 lessons; in grade 6, financial topics are not considered; in grade 7, they are again included in the form of 2 lessons in the topic Capital Problems; grade 8 and 9 are completely absent; in grade 10, they are again present as part of the section Progressions within 2 lessons.

Financial literacy should not be seen as an end. It should be associated as an inevitable link between the surrounding processes in our modern world. Through MyBnk's innovative practice, students receive 5 money saving tips to help them reduce their electricity consumption. The benefit of this education is not only focused on the amount of money saved, but also on how financially literate behavior impacts the environment and the cost of living now and in the future.

Financial topics can be integrated into the 6th grade math curriculum. For example, when studying geometric solids – a regular pyramid. Using Abraham Maslow's Pyramid of Needs, students can explore what part of a family budget, what part of the pyramid corresponds to what. Draw proportions and consider what the pyramid would look like with a larger or smaller budget. To consider how savings and spending or needs and wants might affect individual levels of a pyramid.

O'Connell's [10] five-step approach to evaluating the effectiveness of educational programs can serve as a basis for deriving criteria for assessing students' financial literacy.

Conclusion

The analysis shows that topics related to the development of financial literacy among students are present in the subject of mathematics in every educational system. A number of studies reveal a correlational relationship between students' mathematics performance and their level of financial literacy. Students with higher mathematics scores also demonstrate a better understanding of financial concepts and are better able to navigate financial transactions.

The expansive penetration of digitalization in modern life also has an impact on financial processes. More and more financial operations have found their implementation with the help of information technology. For example, taking out different types of insurance, filing tax returns electronically, and the avalanche of e-commerce are all activities impacting

an individual's finances. I.e. financial topics are indirectly present in the subject Information Technology.

The interest generated by financial education initiatives in many countries highlights their importance of financial literacy and its relationship to financial well-being. Financial education is increasingly becoming a priority among policy makers and private institutions in countries around the world.

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