



Developing Financial Literacy in Pupils

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Abstract

Research indicates a growing focus on enhancing financial literacy awareness globally, yet current efforts are in early stages. Existing attempts to integrate financial education into curricula lack a holistic approach, emphasizing "money and transactions" over crucial topics like "planning and managing financial situations," "risk and reward," and "financial outlook." OECD and the European Commission have repeatedly emphasized the importance of financial literacy skills among youth and the need to integrate these skills in school curricula. This includes the publishing of two core competence frameworks to assist schools in the application of financial literacy in their teaching. This paper focuses on the findings and outcomes of "Financial Literacy for the Economic Development of Society" project funded by the EU's Cooperation partnerships in school education action (KA220-SCH) and led by Varna Free University in Bulgaria. Through the contributions of 7 organizations from Bulgaria, Finland, Greece, Ireland and Turkey, the project has developed financial literacy initiatives among secondary school students, acknowledging the critical role this plays in navigating the complexities of the modern financial landscape. Recognizing the need for regulatory measures to address these gaps, our project is developing a comprehensive secondary school financial literacy curriculum. The curriculum, and its associated content, will be digitized and accessible through a dedicated portal. This allows students and teachers to engage in virtual financial transactions, practice calculations, and manage finances in a simulated environment. The innovation lies in how it applies the given frameworks in practice by seamlessly integrating high-quality learning content and a highly accessible online learning interface for a more impactful financial literacy program of benefit to students.

Keywords: *financial literacy, curriculum, online learning, e-learning*

1. Introduction

Financial literacy is considered as one of the key competence and skill areas required in the digital age. Young people are faced with increasingly more complex financial products, services and systems in today's world where rapid transformations, innovations and large data flows are being experienced. Under these conditions, young people's awareness of financial risks and opportunities, their ability to manage their budgets correctly, and their ability to develop foresight regarding potential financial problems and risks will contribute to improving the financial health of individuals and therefore society. At this point, providing financial education for young people as early as possible and integrating financial education within the existing compulsory education curriculum (which is frequently emphasized by the OECD) are key issues to be considered. This competence, which will impact the welfare level of individuals and society, should be presented within the framework of equal educational opportunities for each individual. Countries risking inadequate financial competence by waiting for individuals to develop it within their own means and ignoring meaningful financial education may result in negative effects that will prevent the healthy functioning of the financial system in the society in the long run.

Financial literacy means much more than money and budget management at a basic level. This is because the consumption, management and saving habits regarding money of individuals in their own households reflect the overall financial character of the society. In today's socio-economic conditions, it is important for individuals to have financial literacy skills in terms of both predicting and solving financial problems and leading a prosperous life.

In order to catch up with the ever-evolving and changing world, financial issues need to be followed and people need to be able to make the most meaningful decisions for their own lives. This can only



be achieved by seeing their actual financial situation, maintaining financial balances, accepting change, and knowing that financial literacy is a lifelong concept. It should not be forgotten that in a globalizing and borderless world, even a crisis in another country has implications for everyone. Being able to see the butterfly effect in the markets and take precautions will be possible with competent levels of financial literacy. Financial literacy is a basic life skill that every individual needs. It helps people to understand the basics of economics, personal finance and money management and apply these concepts in their daily lives.

In order to carry the concept of financial literacy to the level of financial competence and financial awareness, it is very important to define it as a culture in itself from an early age. Managing language and personal care are rightly seen as integrated skills within the curriculum. In the same way, basic financial skills such as money management, budgeting, spending control and savings need to be systematized and included within normal school curriculums. With increasing digitalization, it is now easier to internalize information and set financial goals. Based on all this, we can say that financial literacy is a key skill for modern students.

2. Background

"Financial Literacy for The Economic Development of Society" (project number 2022-1-BG01-KA220-SCH-87865 KA220-SCH) is a *Strategic Partnerships for School Education* (KA201) project of the European Union's Erasmus+ programme which promotes cooperation partnerships in school education. The project, which started in 2022, is led by Varna Free University in Bulgaria. The other partners represent Finland, Ireland, Greece, Bulgaria, Italy and Turkey. This project aims to enhance financial literacy among secondary school students by developing a comprehensive curriculum and supporting materials. The objectives are multifaceted, addressing both the creation of educational content and the cultivation of essential life skills among students and educators. Research indicates a growing focus on enhancing financial literacy awareness globally, yet current efforts are in early stages [1]. Existing attempts to integrate financial education into curricula lack a holistic approach, emphasizing "money and transactions" over crucial topics like "planning and managing financial situations," "risk and reward," and "financial outlook." [2] This project aims to change this by developing and implementing a new European curricula that can be integrated in school curricula.

2.1 Objectives

The specific objectives of the project are to:

1. Develop a financial literacy curriculum that can be used at secondary school level.
2. Develop content for the curriculum, determining teaching methods and techniques.
3. Create digital content for documents and studies related to financial education.
4. Encourage students to be aware of their feelings, self-confident and able to direct their lives.
5. Create awareness of saving and spending in individuals.
6. Raise student awareness so they can be efficient in use of food and natural resources by teaching the difference between wants and needs.
7. Enable planning and budgeting.
8. Teach students how to organize their resources, including time, to inculcate the ability to calculate income and expense with simple resources, and to set savings goals.
9. Promote social and financial entrepreneurship.
10. Encourage students to produce projects that provide both social and financial benefits in their schools.
11. Develop teachers' financial literacy skills.
12. Provide easily accessible, qualified and effective learning materials and pedagogical resources for schools and teachers, suitable for grade.

3. Key approaches

To achieve the project's objectives of enhancing financial literacy among European youth, the project employs several key approaches centred around curriculum development, digital integration, practical skill-building, and international collaboration:



- a. Curriculum development
 - Incorporating fundamental financial topics into primary and secondary education curricula. This approach ensures a comprehensive financial education foundation from an early age.
- b. Digital resource creation
 - Developing a digital portal to host documents, studies, and resources related to financial education. This portal will provide easy access to high-quality, up-to-date educational materials for both students and educators.
- c. Skill-building in planning, budgeting and resource management
 - Implementing programs that teach students essential planning and budgeting skills, and on how to organize their resources, including time management. These programs will help students understand how to manage their finances effectively, from calculating income and expenses to setting and achieving savings goals, and to calculating income and expenses using simple tools and techniques.
- d. Promoting entrepreneurship
 - Promoting both social and financial entrepreneurship by encouraging students to develop projects that provide social and financial benefits within their schools. This approach aims to foster an entrepreneurial mindset and practical business skills.
- e. Teacher professional development
 - Developing programs to enhance the financial literacy skills of teachers. By equipping educators with the necessary knowledge and skills, we ensure that they can effectively teach financial concepts to their students.
- f. Provision of educational materials
 - pand distributing easily accessible, high-quality, and effective learning materials and pedagogical resources tailored to different grade levels. These resources will support both in-class instruction and independent learning.
- g. Cultural and linguistic interaction
 - Fostering cultural and linguistic interaction with colleagues in European countries to enhance the relevance and applicability of the financial literacy curriculum. This collaboration will enrich the educational experience and ensure that materials are culturally sensitive and linguistically appropriate.
- h. Strengthening European cooperation
 - Improving our cooperation network capacity in Europe by establishing and nurturing partnerships with educational institutions and organizations across the continent. This network will support the sharing of best practices and innovative approaches to financial education.

2.1 Curriculum development

This paper focuses specifically on the creation and piloting of a new Financial Literacy curriculum which was developed for middle school students by experts within the project partnership. Prior to the curriculum creation activity, participants conducted research on existing curriculum development practices. This preparation facilitated the creation of a draft curriculum during the activity.

Analyzing different educational systems was important to lay the groundwork for forming the most appropriate curriculum. This activity took place in workshops which focused on the curriculum creation process, resulting in a draft curriculum. After these workshops, all necessary preparations for the final draft were completed including target behaviours, methods, and techniques to be used. The content was designed to be accessible in digital environments. Additionally, the specifications for a digital portal, where financial transactions can be simulated, were decided. This portal which will be implemented later in the project will allow students to open demo accounts and test their financial skills in a practical, interactive manner.

The core substance for the curriculum comes from two core competence frameworks published by the European Union to assist schools in the application of financial literacy in their teaching. [3,4]

2.2 Educational strategies



The project employs a variety of educational strategies to enhance financial literacy among European youth. These strategies are designed to create a dynamic, interactive, and effective educational environment that not only improves financial literacy but also develops essential skills such as teamwork, critical thinking, and problem-solving.

One approach is leveraging online collaborative learning, which utilizes digital platforms to facilitate group work, discussions, and project-based learning, ensuring continuous engagement and participation even when students are not physically together. Another effective method is the Jigsaw technique, where each student becomes an expert on a specific part of the topic and then teaches it to their peers, fostering interdependence and a thorough understanding of the subject matter.

Additionally, the Think-Pair-Share strategy is utilized, encouraging students to think about a question individually, discuss their thoughts with a partner, and finally share their insights with the larger group. This promotes critical thinking and collaborative dialogue. The Integrated Process Approach connects various subjects and processes, providing a more holistic educational experience.

Peer teaching is another vital component, where students take on teaching roles and instruct their classmates on particular topics, enhancing comprehension and retention through active participation and reciprocal learning. Playful learning, incorporating play-based activities, makes education engaging and enjoyable, fostering creativity and a positive attitude towards learning.

Mission-based learning engages students in tasks structured around specific missions or challenges, motivating them with clear, purposeful objectives. Lastly, co-creation involves students in the creation of learning materials and projects, ensuring that education is student-centred and aligned with their interests and needs.

2.3 Collaborative efforts

Central to the project's educational strategies are collaborative learning (CL) efforts, which involve groups of learners working together to solve problems, complete tasks, or create products. These approaches are designed to foster a dynamic and interactive learning environment.

Online collaborative learning is a key component, enabling students to work together through digital platforms, ensuring that they remain engaged and participate actively regardless of their physical location. The Jigsaw technique further enhances collaboration by making each student an expert on a different part of the topic, which they then teach to their peers, promoting interdependence and comprehensive understanding.

The Think-Pair-Share strategy is another collaborative method that encourages students to think individually, discuss their ideas with a partner, and then share with the larger group, facilitating critical thinking and dialogue. The Integrated Process Approach also supports collaboration by integrating various learning processes and subjects, creating a more holistic educational experience.

Peer teaching and co-creation are other significant collaborative approaches. Peer teaching allows students to instruct each other on specific topics, promoting active participation and mutual learning. Co-creation involves students in developing learning materials and projects, ensuring that the education process is collaborative and centred on student interests and needs. To do this within one school or country is both exciting and challenging. To do this between different countries will add significant value to the approach developed within the project.

3. Piloting approach

3.1 Testing the curriculum

The newly developed financial literacy curriculum was pilot-tested in two schools in Italy and Greece to gather feedback, assess its effectiveness, and make necessary adjustments before wider implementation. The piloting process was conducted as follows:

Phase 1: Preparation



1. Conducting a comprehensive training program for teachers in each of the selected schools. Focus is on familiarizing educators with the curriculum content, teaching methods, and digital tools.
2. Developing, finalizing and distributing all curriculum materials, including lesson plans, digital content, and assessment tools.
3. Creating a feedback mechanism (e.g., surveys, focus groups) for students and teachers to share their experiences and suggestions.

Phase 2: Implementation

1. Launching the pilot program during the spring of 2024
2. Scheduling regular check-ins with teachers to monitor progress and address any issues.
3. Implementing the curriculum across multiple grades to evaluate its effectiveness at different educational levels.

Phase 3: Evaluation

1. Gathering feedback from students, teachers, and parents through surveys, interviews, and focus groups. Using classroom observations to assess the curriculum's engagement and effectiveness.
2. Analyzing and evaluating the feedback and performance data to identify strengths and areas for improvement. Comparing student outcomes (e.g., knowledge retention, skill acquisition) before and after the curriculum implementation.
3. Based on the feedback and data analysis, make necessary revisions to the curriculum content, teaching methods, and digital tools. Ensuring that the revised curriculum addresses any identified gaps or challenges.

3.2 Feedback collection

Feedback was obtained by students completing all the assignments specified in the curriculum. Detailed answers were analyzed to determine if basic information has been assimilated and understood. Traditional methods of assessment were employed to ascertain competence in terms of retention, practice and repetition. Teachers developed feedback from individual interviews and group discussions with students. In addition, students were monitored in terms of their active participation in discussions, ability to accurately complete planning worksheets and demonstrated effectiveness in being able to present as teams on budgets and expenditure. The key objective was to ensure that competence and skills regarding financial literacy were not simply understood but demonstrated in practice. Assessment undertaken was both formative and summative

3.3 Preliminary results

Three self-assessment questions (scale 0-5) were used to collect feedback from pupils related to the curriculum implementation:

1. Active participation in class discussions, average score
2. Accurate completion of budget planning worksheets
3. Effectiveness of team presentations on adjusting budgets for income, expenditures actions

Self-assessment results are presented in the following table.

Pilot group	Class/grade	Nr. of pupils	Active participation	Active work	Team presentations
A	10K	19	2,79	2,47	2,32
B	2C	16	4,19	4,00	4,00



The curriculum development took place against a background where many assumptions were made by teachers, parents and other stakeholders that financial competence and awareness is not necessarily needed for your people yet. The discussions and group work revealed strong levels of ignorance and even confusion around what most adults would consider basic financial management skills. The very concepts of opening a bank account, using credit cards, designing and using budgets and savings were absent for most participants. This reality creates strong levels of dependence and insecurity, ultimately acting as a real brake of the development of personal autonomy and responsibility. Integration of experiential learning methods and principles proved a strong outcome in the development and deployment of the curriculum.

4. Recommendations for Further Development

Developing a curriculum for financial literacy and competence in secondary schools requires a strategic approach to ensure best practices and sustainable instruction methods. Here are the key recommendations which emerged following the evaluation process:

1. Comprehensive curriculum design is required with the following stipulations, that it must
 - a) Align with standards and frameworks to ensure the curriculum aligns with national and international standards for financial literacy. Reference frameworks such as the OECD's financial literacy guidelines help to benchmark best practices.
 - b) Utilize a modular structure - designing the curriculum in modular units allows flexibility in teaching and ease of updates. It is also important to include core topics such as budgeting, saving, investing, credit management, and financial planning.
2. Engaging and relevant content
 - a) Real-life context integrates real-life scenarios and case studies to make learning relevant and practical. This uses current events and financial trends to keep content up-to-date and engaging.
 - b) Interactive learning: use of interactive teaching methods (simulations, role-playing, and gamification) and digital tools and platforms creates immersive learning experiences.
3. Collaborative and experiential learning
 - a) Group projects and peer learning incorporates collaborative projects where students can work in teams to solve financial problems. Peer teaching strategies enhance understanding and engagement.
 - b) Hands-on activities: includes activities (managing a virtual stock portfolio, budgeting exercises, and financial goal setting) plus field trips to financial institutions with invited guest speakers from the finance industry.
4. Professional development for educators
 - a) Ongoing training provides regular professional development opportunities for teachers to stay current with financial education trends and tools. Workshops, webinars, and certification programs focused on financial literacy instruction are advised.
 - b) Resource sharing: creates a platform for educators to share resources, lesson plans, and best practices as well as encouraging collaboration and exchange of ideas among teachers across different schools and regions.
5. Integration of technology
 - a) Digital literacy ensures students are proficient in digital literacy on financial tools and online banking, teaching safe and responsible use of financial technology, including cybersecurity awareness.
 - b) E-learning platforms: develop or adopt e-learning platforms to offer interactive financial education modules while using online assessment tools to track student progress and provide personalized feedback.
6. Assessment and feedback
 - a) Formative and summative assessments: incorporating self-assessment and peer review to foster self-directed learning and critical thinking.
 - b) Continuous improvement: collecting and analyzing feedback from students, teachers, and parents to continually refine the curriculum
7. Sustainability and community involvement
 - a) Financial education partnerships with financial institutions, non-profits, and community organizations to support the curriculum and provide additional resources.



- b) Parental engagement in the financial education process through workshops and informational sessions. Supporting parents to reinforce financial literacy at home.
- c) Long-term strategy to develop a long-term strategy to ensure relevant and sustainable curriculum.

5. Conclusion

Implementing these recommendations will help create a robust financial literacy curriculum that is engaging, practical, and sustainable. By focusing on comprehensive content, innovative teaching methods, professional development, technology integration, continuous assessment, and community involvement, educators can equip students with the financial skills and knowledge they need for the future. Financial literacy means much more than money and budget management at a basic level. Because the consumption and saving habits of individuals in their own households reflects the financial character of the society. In today's socio-economic conditions, it is important for individuals to have financial literacy skills in terms of both predicting and solving financial problems and leading a prosperous life. In order to catch up with the ever-evolving and changing world, financial issues need to be followed and people need to be able to make the most meaningful decision for their own lives. This can only be achieved by seeing one's own financial situation, maintaining financial balances, accepting change, and knowing that financial literacy is a lifelong concept.

Financial literacy is considered as one of the literacy areas required by the digital age. Young people are faced with more complex financial products, services and systems in today's world where rapid transformations, innovations and a large data flow are experienced. Under these conditions, young people's awareness of financial risks and opportunities, their ability to manage their budgets correctly, and their ability to develop foresight against financial problems will contribute to improving the financial health of individuals and therefore society. At this point, providing financial education for young people as early as possible and integrating financial education with the compulsory education curriculum, which are frequently emphasized by the OECD, are the issues to be considered.

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