

DEVELOPMENT OF FINANCIAL LITERACY IN LATVIAN STUDENTS

Rita Kiselova

Linda Mihno

University of Latvia, Latvia

Abstract. *The development of the information and communication technologies goes hand in hand with changes in the financial environment, development of the offering and opportunities, and an ever increasing necessity for financial education to develop and advance in the schooling sector. It is therefore essential for school curricula to include the acquisition of knowledge and skills which support the development of financial literacy in order to assure that students are able to take care of their financial wellbeing in the future.*

The main aim is to find out what financial skills Latvian students need to develop in order to improve their financial literacy.

Based on research studies conducted by other researchers, the research study is being conducted to look for the necessary skills and knowledge which financial literacy comprises and which might assure financial wellbeing in the future regardless of the constant development of the financial environment. The data of the Financial Module of the year 2012 OECD PISA study, in their turn, are used to analyse the financial literacy of Latvian students at the age of 15 by finding out the knowledge and skills students in Latvia have with regard to finances. By calculating the percentage of students able to solve the tasks given to them, the research study analyses which tasks Latvian students find difficult and which ones are easy for them.

The research study explains what knowledge and skills financial literacy comprises. The results show that Latvian students find analytical tasks difficult, i.e., tasks which require substantiation of their opinion, whereas they find it easier to deal with tasks where use of mathematical skills is sufficient.

The possible reasons for the current situation are provided and suggestions for improving it are offered in the research study.

Keywords: *financial education, financial education management, financial literacy, students' achievements*

Acronyms:

ICT – Information and Communication Technologies

OECD - Organisation for Economic Co-operation and Development

PISA – Programme for International Student Assessment.

Introduction

Financial literacy is among the key skills in life in the 21st century which students must have nowadays in order to secure their wellbeing in the future

(OECD, 2014b; APEC, 2012; Clark, 2009). The listing also includes such competences as understanding the world, understanding health, ICT, critical thinking, creativity and strong working ethics (Clark, 2009).

The development of the information and communication technologies goes hand in hand with changes in the financial environment, development of the offering and opportunities, and an ever increasing necessity for financial education to develop and advance in the schooling sector. It is therefore essential for school curricula to include the acquisition of knowledge and skills which support the development of financial literacy in order to assure that students are able to take care of their financial wellbeing in the future.

On February 2014 a memorandum on implementing a strategy for developing financial literacy (2014-2020) was signed in Latvia in order to promote the gradual increase of the financial literacy rate of the population. Partners who signed the memorandum have been involved in several activities during the past few years, mainly focussing on developing various materials and making them available in the public space, organizing seminars and other activities. However, these activities don't belong to compulsory education and don't reach all students at schools.

The main objective of the research is to find out what financial skills Latvian students need to develop in order to improve their financial literacy. Based on previous studies conducted by other researchers, our research is focused on the necessary skills and knowledge which financial literacy comprises and which might assure financial wellbeing in the future regardless of the constant development of the financial environment. The data of the Financial Module of the year 2012 OECD PISA study, in their turn, are used to analyse the financial literacy of Latvian students by finding out the knowledge and skills students in Latvia have with regard to finances. By calculating the percentage of students able to solve the tasks given to them, the research study analyses which tasks Latvian students find difficult and which ones are easy for them.

Material and Methods

The research study includes a review of sources devoted to financial literacy to analyse the definitions of financial literacy offered in the literature and to look for the specific knowledge and skills which financial literacy comprises.

The second part of the research study includes an analysis of the financial literacy performance of Latvian students within the OECD PISA 2012, based on the ability of the students to solve tasks of specific content, context and process, along with conclusions. It was the first PISA cycle that evaluated financial competencies of Latvian students. The next evaluation will be held during PISA 2018, providing possibility to compare data of these two research cycles and to

develop conclusions and comprehension whether the steps that have been taken so far in financial education have made some improvements.

The OECD PISA includes an assessment of how much the students who are about to complete the lower secondary school have acquired the knowledge and skills necessary for comprehensive participation in social life as well as an evaluation of the ability of the students to analyse the experience gained during their studies and to apply it in various situations in life outside school and in their further studies. The targets of the OECD PISA are to help develop and implement an evidence-based education policy and national education reforms to facilitate the labour market and competition. This is why a range of research studies are conducted and internationally fully verified and comparable databases are created for use in analyses leading to recommendations which can be used in education (Kangro et al., 2015).

The OECD PISA's target audience is students aged between 15 years and three full months and 16 years and two full months and studying in the seventh or higher forms of any type of educational institutions within the respective country at the time of the testing. This age range has been chosen to make it comparatively easier to include the students in the study sample based on their year of birth, without considering particular birth date of participant.

Approximately 29,000 students representing about nine million fifteen-year-old students of 18 member states (13 OECD states and five partner states) participated in the Financial Module of PISA 2012.

In Latvia, 970 participants from 215 schools took part in the financial module in Latvia, and, of these, 84 % were students of form 9, and 12 % were students of form 8. Within two hours, each student taking part in the financial module had to fill out one of the four different brochures testing financial knowledge and containing different arrangements of the clusters. Each brochure included four clusters of tasks: two clusters of financial tasks (40 tasks in total), one mathematical and one reading task cluster. Also a brief survey about the experience of the students in money matters was included (Kozlovska, 2018).

Results and Discussion

In the definitions found in the literature, financial literacy is mainly associated with ability to use own knowledge and skills in making decisions which influence financial wellbeing (Remund, 2010; Cackley, 2011; Thiessen, 2014; LKA; 2012). This is an essential aspect which characterises any competence. It is important for an individual to be able to use their theoretical knowledge, understand their meaning, and to be able to actually apply it in their daily life. Skills and knowledge have significance only if we know how to use them expediently and handle them in the respective situations. However, these

definitions emphasise only the use of knowledge and skills, leaving out the significance of the knowledge itself and of the motivation to use the knowledge to improve not only one's own wellbeing, but also that of the entire society.

There are also definitions which have a stronger emphasis on the financial concepts and understanding them (LKA, 2012; Huston, 2010; Thiessen, 2014; Akdag, 2013). It is essential for an individual to understand the financial concepts because that is the only way of being able to analyse situations and understand them, but it is not enough. Simple understanding of financial concepts does not mean that the individual is able to use them in his/her daily life.

Management of money is also mentioned as a key element of the definition of literacy, but, even though it is of great importance, financial literacy does not mean efficient management of money only (Huang et al., 2013; Akdag, 2013). It is a very simple and primitive way of defining financial literacy, without going into more profound explanations.

The author believes that such definitions are incomplete, and, therefore the definition offered by the OECD will be used for the purposes of this research study, as the author believes it to be the most complete and to include all the aspects of financial literacy. Thus,

Financial literacy is knowledge and understanding of financial concepts and risks, and the skills, motivation and confidence to apply such knowledge and understanding in order to make effective decisions across a range of financial contexts, to improve the financial well-being of individuals and society, and to enable participation in economic life. (Kangro, 2014; OECD 2014a; OECD, 2014b).

Previous studies have led to conclusions that financial literacy should be mastered as early as possible in order to assure that the next generation has the skills required to find one's way around in the ever growing complexity of economics. The school might be a suitable environment where students could acquire such skills (Akdag, 2013; Hinojosa et al., 2010; Posnanski et al., 2006; Cordray, 2008; Dowdell et al., 2008; United States Department of the Treasury Office of Financial Education, 2002; Mandell et al., 2009).

A topical question is what exact skills and knowledge students are to acquire to have financial literacy.

In its studies, the OECD evaluates financial literacy based on 3 elements – content, process and context. According to the OECD experts, the key directions of the content which characterise students' knowledge and understanding of financial matters are (OECD, 2014a; Geske et al., 2015):

- *Money and transactions* – This category, which represents the first core content of financial literacy, includes the awareness of the different forms and purposes of money and handling simple monetary

transactions such as everyday payments, spending, value for money, bank cards, cheques, bank accounts and currencies.

- *Planning and managing finances* – This category, which covers essential financial literacy skills, includes planning and managing of income and wealth over both the short term and long term, and in particular the knowledge and ability to monitor income and expenses, as well as to make use of income and other available resources to enhance financial well-being.
- *Risk and reward* – This category incorporates the ability to identify ways of managing, balancing and covering risks (including through insurance and saving products) and an understanding of the potential for financial gains or losses across a range of financial contexts and products, such as a credit agreement with a variable interest rate, and investment products.
- *Financial landscape* – This category relates to the character and features of the financial world. It covers knowing the rights and responsibilities of consumers in the financial marketplace and within the general financial environment, and the main implications of financial contracts. It also incorporates an understanding of the consequences of change in economic conditions and public policies, such as changes in interest rates, inflation, taxation or welfare benefits.

Authors of other research studies also mention that the essential core financial knowledge includes everything about and around money, awareness of wishes and needs, budget-formation principles and other key items (Koenig, 2007; New Zealand Ministry of Education, 2014; OECD, 2014b; Hinojosa et al., 2010; United States Department of the Treasury Office of Financial Education, 2002). Understanding the key items of finance is the first step to wellbeing. By understanding what, how, where and why, the individual will be able to make informed and justified knowledge-based financial decisions.

In today's variable circumstances when changes take place in the labour market, it is important for people to be able to manage their financial resources skilfully in thinking about their future, building up savings, participating in pension fund actively. Thus, they can take care of their old age themselves, without waiting for support from the state. In the literature, financial management and understanding of investments and financial contributions as well as the ability to build up savings are mentioned as evidence of financial literacy (Grinstead et al., 2011; Koenig, 2007; United States Department of the Treasury Office of Financial Education, 2002; Dowdell et al., 2008; OECD, 2014b).

Understanding regarding credits and loans, knowing the risks and benefits associated with them, ability to find one's way around in the offering and make informed decisions based on own knowledge also suggest having financial

literacy (Koenig, 2007; United States Department of the Treasury Office of Financial Education, 2002; Dowdell et al., 2008).

In the studies, financial literacy is also linked with understanding of the financial environment. It is understood by this that the individual has skills and knowledge associated with consumer rights and obligations in the financial market, an understanding of the influences of the economic and political circumstances on the financial market. The individual should also be able to seek advice, to know where to look for advice and how to avoid fraud, as well as be able to protect themselves (New Zealand Ministry of Education, 2014; United States Department of the Treasury Office of Financial Education, 2002, Akdag, 2013; Dowdell et al., 2008; OECD, 2014b). Protection of own finances and being aware that, in the contemporary world, more attention should be paid to the safety of personal data in particular, which is frequently linked also with financial security, are questions that are not directly addressed by the OECD in its study (OECD, 2013), but they might be significant as information technologies and opportunities develop.

Most of the researchers have the same opinions regarding what knowledge and skills make up financial literacy. However, the researchers believe that, with regard to financial matters, the school should put more emphasis on the practical skills instead of the theoretical ones. Students should, for example, understand why to save up instead of what saving up is (Akdag, 2013; Putniņa et al., 2012; Williams et al., 2011; United States Department of the Treasury Office of Financial Education, 2002). Therefore, it is essential that there are not only competent teachers in the process of educating students, but also parents who act as models and examples and involve students in daily events associated with planning finances, spending and making decisions, and also other organisations and institutions associated with the financial sector (Avard et al., 2005; Lusardi et al., 2010; Schuchardt et al., 2009; Koenig, 2007).

In its studies, the OECD also examines the students' practical skills in dealing with financial matters. The following skills are evaluated in the OECD PISA study - ability to identify and apply concepts of the financial area, understand, analyse, reason, evaluate and offer solutions. The PISA defines 4 areas of financial literacy (Geske et al., 2015):

- *identify financial information*
- *analyse information in a financial context*
- *evaluate financial issues*
- *apply financial knowledge and understanding*

All of these areas are targeted at students' ability to find their way around in the financial environment by using their knowledge regarding finances, being able to determine what is relevant in the particular source of information, interpret,

compare, oppose, synthesise and generalise. The student is able to offer opinions and reasoning based on knowledge and understanding and to provide explanations in respective contexts.

It is important that students are competent in financial matters in real-life situations. This is why the OECD PISA study includes an evaluation of how students solve financial matters in situations which characterise (Geske et al., 2015):

- *Education and work*
- *Home and family*
- *Individual*
- *Societal*

All of these situations are topical and essential for young people. Firstly, education because most of them will continue their studies after the completion of the elementary school. Students should understand what alternatives they have, what the costs of their studies and other expenses associated with education are. Secondly, work. Some students might start working after finishing the elementary school, or they might already have some jobs apart from studies.

Young people should also be aware of the household costs and be competent in them in order to become independent when they start living separately from their family (for example, in a hostel). As they become older and start earning their own living, receive pocket money or maintenance allowance, students should be able to make financial decisions. When opting for products and services as well as when assessing matters associated with contractual obligations (e.g., when taking loans), they must be able to consider the risks and take responsibility for their decisions. Students must be aware that their individual decisions may have impacts on the society in general (for example, decisions associated with the tax system, consumer rights and obligations).

In the Financial Module of PISA 2012, students had to solve tasks which included the above-mentioned content areas, contexts and processes. Table 1 summarises the data regarding the tasks of specific contents, processes and contexts as well as shows the percentage of the students who were able to solve the tasks correctly. It can be seen in the table that most of the tasks to be completed by the students were those related to home and family and private situations, and less those concerning education and work and public life situations.

Table 1 Count of students as a percentage, which have been able to solve specific content areas, context and process tasks (PISA 2012 results in Latvia)

Context	<i>Home and family</i>			<i>Individual</i>			<i>Education and work</i>			<i>Societal</i>		
	<i>Money and transactions</i>	<i>Planning and managing finances</i>	<i>Risk and reward</i>	<i>Financial landscape</i>	<i>Money and transactions</i>	<i>Planning and managing finances</i>	<i>Risk and reward</i>	<i>Financial landscape</i>	<i>Planning and managing finances</i>	<i>Financial landscape</i>	<i>Risk and reward</i>	<i>Financial landscape</i>
Process	<i>Money and transactions</i>	<i>Planning and managing finances</i>	<i>Risk and reward</i>	<i>Financial landscape</i>	<i>Money and transactions</i>	<i>Planning and managing finances</i>	<i>Risk and reward</i>	<i>Financial landscape</i>	<i>Planning and managing finances</i>	<i>Financial landscape</i>	<i>Risk and reward</i>	<i>Financial landscape</i>
<i>identify financial information</i>	32%; 47%		81%		55%; 15% ¹ 62% ²	74%		8%				
<i>analyse information in a financial context</i>	14% ¹ ; 14% ²	74%			27%	58%; 68%; 76%	48%		23%	70%		31%
<i>evaluate financial issues</i>		78%; 91%	31%	67%	69%		27%		5%; 83%; 52%; 48%		85%	47%; 77%
<i>apply financial knowledge and understanding</i>	96%	54%	49%; ; 89%; ; 28% ¹ 55% ²		33% ¹ 21% ²			61%	53%			

1 – correct answer, 2 - partially correct answer

As can be seen in Table 1, there were tasks which most of the Latvian students were able to solve as well as tasks which only a small percentage of the Latvian students were able to tackle. The students are best able to solve tasks which concern home and family. This is possibly because these are topics the students encounter daily in discussions with their parents or being involved in the management of the household themselves. The tasks found more difficult by the

students are those requiring analysis of information particularly in the context of finances, in any content area. This may suggest that students have poor skills in analysing information or that they are not competent in such situations because they do not encounter them daily and lack the practical skills.

The analysis of the tasks leads to a conclusion that students have problems with tasks associated with investments, analysis of specific situations, and drawing relevant conclusions regarding the future. Possibly, the students lack experience which is based on prediction of the further situation, making decisions based on risk assessment and prediction. The tasks involving calculation of term deposit or savings account interest caused no problem for the students. This is possibly because such tasks require mathematical skills in doing calculations and selection of the most suitable answer based on them. The tasks regarding investments are mainly about being able to analyse and make a decision and substantiate it. This is more complicated, and it requires the respective knowledge and practical skills to be able to understand the risks and know the options. The students also find it difficult to handle tasks which require substantiation of their choice or opinion. This suggests lack of experience, as, apparently, there have been no such situation in their daily life, and they have not had any experience in facing the consequences of their own decisions and assuming liability for them. It could mean that our students have problems with critical thinking which don't let them make reasonable decisions. Critical thinking has an important role in making reasoned judgment and choices, in particularly in economics and finances (Heijletjes et al., 2015; Mulnix, 2012). Therefore, it is so important to develop critical thinking if we want student to be able to make good decisions in financial life.

A study about The Use of Critical Thinking (CT) was conducted in Latvia in 2008. It explored approaches in the education system – it's impact and effectiveness in Latvia. The research showed that there are problems with the implementation of critical thinking in schools in Latvia (Baltic Institute of Social Sciences, 2008). Similar results were detected in PISA 2012 financial module. PISA 2018 data might be expected to show that situation is changed, although Minister of Education and Science only recently admitted in public space that the development of critical thinking has to be related to the content of learning at schools.

Conclusions

The study data show that the students are very good at the tasks which concern their daily experience and require use of their mathematic skills. The tasks associated with investments and topics unknown to the students in their daily life as well as tasks requiring in-depth analysis and expression of substantiated

opinions, which might sometimes be based on personal experience, cause difficulties.

Attention should be paid to the development of financial literacy, and the responsible institutions should facilitate the provision of financial education to students already on the elementary school level. Latvian students find financial tasks difficult, particularly those involving expression of own opinion and supporting it with own knowledge and experience.

A suggestion to the policy-makers might be that they offer acquisition of financial matters where students can use their knowledge in practice, in various simulation games, individual projects, group-work. Additional attention should be paid to the ability of students to express their opinions and substantiate them. Possibly, schools should practise debates on various topics, discussion clubs, question and answer games.

References

- Akdag, H. (2013). Does the Social Studies Responsible for Financial Literacy? *International Journal of Academic Research Part B*, 5 (5), 401-406. DOI: 10.7813/2075-4124.2013/5-5/B.62
- Avard, S., Manton, English, D., & Walker, J. (2005). The Financial knowledge of college freshman. *College Student Journal*, 39, 321-399
- Baltic Institute of Social Sciences (2008). *Pētījuma „Kritiskās domāšanas pieejas izmantošana izglītības sistēmā-ietekme un efektivitāte” kopsavilkums*
- Clrak, T. (2009). *21st Century Scholars. Educational Leadership*. September 2009.
- Cordray, R. (2008). *Schools investing in our future*. Columbus, OH: Community Education Department
- Dowdell, J., McElfresh, D., Sikula, J. (2008). How Teacher Educators Can Address Our Nation's Financial Crisis. *SRATE Journal*, Vol. 18, Number 1, Winter 2008-2009, 1-6.
- Grinstead, M. L., Mauldin, T., Sabia, J. J., Koonce, J., & Palmer, L. (2011). Saving for Success: Financial Education and Savings Goal Achievement in Individual Development Accounts. *Journal of Financial Counseling and Planning Volume 22* (2), 28 – 40
- Heijltjes, A., van Gog, T., Leppink, J., & Pass, F. (2014). Improving critical thinking: Effects of dispositions and instructions on economics students' reasoning skill. *Learning and Instruction, Volume 29*, February 2014, 31-42.
- Heijltjes, A., van Gog, T., Leppink, J., & Pass, F. (2015). Unravelling the effects of critical thinking instructions, practice, and self-explanation on students' reasoning performance. *Instructional Science; July 2015, Volume 43*, Issue 4, 487–506
- Hinojosa, T., Miller, S., Hallberg, K., Brown, M., & O'Brien, B. (2010). *The Impact of The Stock Market Game on Financial Literacy and Mathematics Achievement: Results from a National Randomized Controlled Trial, 2010*. SREE Conference Abstract Template
- Kangro, A. (2014). *Skolēnu finanšu kompetence OECD Starptautiskajā skolēnu novērtēšanas programmā 2012. Skolēni un Nauda*. Available on: http://www.ipi.lu.lv/uploads/media/Finansu_pratiba2012_09072014.pdf
- Koenig, L. A. (2007). Financial Literacy Curriculum: The Effect on Offender Money Management Skills. *The Journal of Correctional Education* 58 (1), 43 – 56

- Lusardi, A., Mitchell, O. S., & Curto, V. (2010). Financial Literacy among the Young. *The Journal of Consumer Affairs*, Vol. 44 (2), 358- 379
- Mandell, L., & Klein, L. S. (2009). The Impact of Financial Literacy Education on Subsequent Financial Behavior. *Association for Financial Counseling and Planning Education. Journal of Financial Counseling and Planning*, Volume 20, Issue 1.
- Mulnix, J. W. (2012). Thinking Critically about Critical Thinking. *Educational Philosophy and Theory*, 44:5, 464-479, DOI:10.1111/j.1469-5812.2010.00673.x
- New Zealand Ministry of Education (2014). *Development of Financial Capability Progressions*.
- OECD (2014a). *PISA 2012 Results: Students and Money: Financial Literacy Skills for the 21st Century (Volume VI)*. PISA, OECD Publishing. Available on: <http://dx.doi.org/10.1787/9789264208094-en>
- OECD (2014b). *Financial Education for Youth: The Role of Schools*. OECD Publishing, Paris. Available on: <http://dx.doi.org/10.1787/9789264174825-en>
- Posnanski, T. J., Schug, M. C., & Schmitt, T. (2006). Can Students Learn Economics and Personal Finance in a Specialized Elementary School? *International Journal of Social Education*, 21, 2, 196-205.
- Putniņa, A., Birzniece, I., Bērsone, L., Bunkše, M., Grīntāls, J., Herca, A., Kundrāte, A., Laizāne, M., Lasmane, D., Lukstiņa, I., Miščenko, A., Nikuļceva, D., Pecīņa, L., Role, A., Rupeika, I., Silakalne, L., Skrīvele, K., Svīklis, Ī., Ungure, E., Vilčaka, B., & Zalāns, K. (2012). *Jauniešu finanšu lietpratība. Pētījuma ziņojums*. Latvijas Universitātes Antropoloģijas studiju katedra
- United States Department of the Treasury Office of Financial Education (2002). *Integrating Financial Education Into School Curricula*. Office of Public Correspondence, Washington, Available on: <http://www.treas.gov/press/releases/docs/white.pdf>
- Williams, D., Grizzell, B., & Burrell, D. N. (2011). An Applied Case Study Analysis of Potential Societal Importance of Financial Literacy Education for African-American and Latino American Adolescents. *The International Journal of Interdisciplinary Social Sciences*, Volume 6 (3), 245-260.