

LIFELONG LEARNING – A SHORT VERSION

Children's University – regional view of competence
development of young people

UNIwersytet Szczeciński
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Introduction

Europe has been invariably concentrating its efforts on stimulating economic innovation. According to recent data, Europe has overtaken the United States in this respect, but it still lags behind Japan, Australia, Canada, and South Korea, which are the leaders in the innovation ranking. All activities are subordinated to building innovative potential that will generate new solutions benefiting future socio-economic development. Competences are the crucial factor in facilitating innovation. Managers try to deal with them effectively by identifying a catalogue of specific competences, particularly important for innovation development. At the same time, the studies conducted indicate an uneven geographical distribution of contribution and effect indicators of the potential, level and effectiveness of innovative activities. Experts suggest intensifying the research activities and recommend the widest possible implementation of the concept of lifelong learning (LLL) in order to equalise development levels and to drive the European economy as a whole. The knowledge worker who is rewarded for thinking has become particularly sought after. The technological leap, automation, digitisation and the constant volatility affect the labour market and the professional activation of societies. The emergence of a new reality, i.e. a market for interdisciplinary professionals, is influenced by the emergence of numerous new professions, ones that disappeared or were modified and by changes of working conditions. The employers look for e-leaders who combine business, analytical and IT competences. This approach has become more important as work and communication are carried out remotely due to the pandemic. Such a situation is particularly challenging for the Polish market since in principle it is not best developed in terms of IT, even though the Polish IT specialists are good. The old model of the world as we knew it just before the pandemic broke out is unlikely to return. We all need to adjust. An even greater part of our lives and decision-making will be transferred to the Internet. Remote communication requires new competences, including those related to economics and finance.

Modern economies face new challenges related to education *sensu largo*. Continuing ageing of the population and increased life expectancy are among these

challenges. More and more people are and will be pension recipients, which is why it is very important to start accumulating funds for your future retirement as early as possible, as soon as you start working. The second challenge relates to digitalisation, the transfer of all the decision-making processes to smartphones and tablets, which shortens and speeds them up greatly, but it also generates further dangers of over-spending and indebtedness. And thirdly, young people, the so-called generation Y, do not know life without Facebook, Instagram and other social media. These people do not put their mobile devices down. They are very good with computers, they speak foreign languages and are familiar with the term “global village”. Images are more important to them than a written word. As adults now or once they become mature they will have to grapple with the consequences of their previous choices, including the financial and career-related ones. Providing education services to this group is challenging in view of digitalisation and conscious spending. These young people have been brought up in times when goods and services were widely available, but they must learn now how to make choices and rational decisions going forward. An effective education system imparting both theoretical and practical approach to handling money or managing the household budget is essential for acquiring financial literacy.

This monograph touches on important issues in view of the economic and social consequences of the social deficits in the domain of financial and social literacy. These shortcomings can lead to mistakes that have very often far-reaching consequences and translate into real social and economic problems. In the recent past we find examples which best demonstrate knowledge deficits, resulting in erroneous acquisitions of financial assets that were inadequate to clients’ goals, needs and capabilities. The assumption of non-current liabilities based on variables, not entirely predictable parameters, or on the acquisition of derivatives demonstrate the need to improve both the knowledge and the economic and financial competences of the society. The only way to avoid making the said mistakes is by moulding economic and financial attitudes, increasing financial literacy and awareness. This process should also cover pre-school children.

Prevention of risky and ill-advised financial decisions should be the primary objective of a national strategy for financial education, combined with educational programmes and projects compatible with this strategy. In the past there were quite a few examples of such decisions and these involved, for example, over-indebtedness, loans denominated in foreign currencies, policy deposits or currency options. The importance of economic education is demonstrated by the measures taken by numerous countries that have implemented or revised their national strategies for financial education for the benefit of all the market participants.

Poland introduced many very good, though one-off and incidental, programmes. The level of economic (financial) literacy affects the entire life cycle of a household. If young people are taught how to manage their pocket money, they will be aware of

the benefits and costs of debt, saving and accumulating money for retirement at the time they start their careers. As adults, we also make weighty decisions that affect our future in many respects. The benefits of economic education are indisputable, as shown by the results of this research. They influence the decision-making processes in the domain of the economy and thus the well-being of society and economic development.

The concept of lifelong learning (LLL) is somewhat naturally associated with education after education, i.e. further training, taking place after compulsory schooling, secondary or higher education. The authors of this study adopt a somewhat unconventional perspective and – in the context of competence management under the LLL concept – they bring to the fore the education of children and youths which is a “short” version of long-life learning. The aim here is to emphasise the importance of out-of-school learning that is pursued concurrently with school education, complementing the school curriculum. The focus is on a particular form of non-formal education, referred to as children’s universities. It is a relatively young initiative, not fully defined. It was introduced in Poland in the last decade, and in Europe it has been known since 2002.

The purpose of the monograph is complex, given the subject matter discussed and the importance of the issues raised herein the research objective shows as complex and accounting for it requires referring to the main aim and three secondary aims. The main objective is to assess the importance of early economic education in moulding the competences of Polish people. The three specific objectives are as follows:

1. Identification of the relationship between the development of competences in accordance with the *lifelong learning* concept and the intensity of innovation processes, carried out for the purpose of socio-economic development.
2. Determination of the place of broadly understood education in the domain of finance, economics and management, and showing its place in the catalogue of competences, considered pivotal by European policy makers.
3. Bringing to the fore children’s university education as an innovative concept for lifelong learning at a young age.

The monograph is divided into three main parts, which are linked by the issue of the role and importance of economic, financial and management education in the modern economy. The development of this type of education is said to be conditioned by the degree it addresses/satisfies the criterion of innovation. The publication is an extension and supplement to the Polish-language monograph published in 2021.

The first part of the book provides the background, the rationale for the need to manage competences, especially the economic and financial ones. At the beginning, the essence and significance of competences as an inherent element of an innovative economy are presented.

Innovation of any economy is also based on its education model, suitable for generating the greatest possible benefits for the labour market. The characteristics and challenges of today's market are included in the second section, which also lists the directions of future changes and the requirements for future employees. A properly structured education system constitutes an inseparable element of any innovative economy. It is supposed to be not only a catalyst for change but it also supports progress in every field. Informal education that starts at an early age and continues throughout life is an extremely important element for the economy of any country and for its development. The concept of LLL is featured in any successful economy, both at the macroeconomic and microeconomic levels. Children's universities are an innovation in the non-formal education process. They enable children to acquire new, often practical knowledge and give them an idea of what courses for adults are like. Economic (financial, management) education is particularly important here as this knowledge is indispensable in adult life. If children and young people achieve appropriate economic maturity they will be able to make informed decisions in the future.

The second part of the monograph deals with economic and financial education. The fact that today decisions can be made fairly quickly and easily, but they entail financial consequences, makes economic and financial education particularly important and it puts pressure on decision-makers for its correct implementation. The public and governments realise how crucial economic education is in times of economic slowdown and post-crisis periods, when consumers and their desire to own and consume are blamed for the current state of affairs. Economic education becomes especially important in difficult times. Economic and financial education is a complex concept, involving various forms and categories. Chapter 2 presents research on economic and financial knowledge and competences carried out in Poland, in Europe and worldwide. Despite many insightful papers showing insufficient levels of economic and financial knowledge and competences in Poland no national strategy for financial education has been implemented. A large number of valuable educational projects were proposed but these are often not planned in terms of their sustainability. There are only a few solutions that provide a cyclical and comprehensive approach, corresponding to the concept of lifelong learning. The level of economic, financial and management knowledge is quite low in Poland and worldwide. Many people are cognisant of basic issues, but they have problems understanding more complex interdependencies and their impact on individual decisions.

Chapter 3, the last one, combines considerations made in the preceding sections. It presents detailed analysis of the competences the students of the Children's University of Economics in Szczecin have. It presents subject areas and children's age in relation to the entire period under study, as well as in relation to the individual years during which the project has been carried out. Moreover, this part includes a description of the teaching process, its parts, its purpose and the stakeholders involved.

The assumptions and implementation process of sample classes in project management are presented in detail here. IPMA Kids and IPMA Junior, the projects for young project managers were developed in Szczecin as a result of collaboration of Polish universities with the International Project Management Association Polska (IPMA Polska). The end of Chapter 3 presents the characteristics of the educational process under the programme of the Children's University of Economics. What follows is a discussion of the detailed results of the survey on the knowledge level of the learners who participated in several editions of the Children's University of Economics in Szczecin in the years 2015–2019. The results of the survey are supposed to constitute important data for developing further educational programmes for children and young people and they present the rationale for provision of education services to the said target group.

The empirical part of the monograph focuses on educational experiences in connection with the implementation of the children's university in the disciplines thematically associated with economics, management and finance. The authors present the results of a study on the knowledge and skills of children participating in the Children's University of Economics. They point out the level of economic awareness and maturity in the young students. Furthermore, children's university combines learning and playing, which is attractive to children. It releases their creativity and enables them to make decisions in line with the latest trends, also those shared with the adult world.

1. From competence management to children's and young people's education

1.1. Competences on the way to innovation

If we take a look at a map presenting the quality of life of people living in different parts of the world, we notice drastic inequalities affecting the ability of these communities to address social and economic problems. The development potential of a given area influences the fact that some countries and their regions perform better than others. Countries compete with one another and in doing so they motivate each other to invest in this potential. They all agree that the future is conditioned by investment in innovation.¹ Innovation *sensu largo* encompasses a variety of improvements and absolute novelties, small scale innovations introduced by a given entity and globally, product and process innovations as well as organisational and marketing innovations. The potential to generate innovative solutions varies and it is dependent on many factors. It is studied in order to identify the weaknesses or competitive disadvantages of a particular system. Education is an important factor here. It can be rewarding for two reasons. In the one hand it makes it possible to build innovative potential. On the other hand it enables us to safely use the achievements

Out there in some garage is an entrepreneur who's forging a bullet with your company's name on it. You've got one option now – to shoot first. You've got to out innovate the innovators.

T. Kelley, J. Littman

¹ Approximately 2/3 of economic growth in the recent decades in Europe has been driven by innovation. Every euro invested in the European research and innovation programme Horizon Europe is forecast to generate a return of up to €11 GDP over 25 years. The emphasis is put on the research and innovation development sector. Its measurable indicator is to be a significant increase in the number of new jobs in this sector, i.e. up to 100,000 in 2021–2027. See *Rankingi innowacyjności*, Komisja Europejska; Retrieved from: https://ec.europa.eu/poland/news/190617_innovations_pl (accessed: 17.06.2019).

of globalisation and the innovations implemented. Among the multitude of achievements, improvements, changes and information chaos, economic and financial literacy become particularly valuable.² As early as in 2009 work on national strategies for financial education was started as part of OECD activities.

Many countries have implemented their strategies since that time, and others are still developing or planning relevant initiatives.³ The Polish national strategy is in the conceptual phase.⁴ The need for such a strategy has been demonstrated by numerous studies showing that economic and financial literacy is insufficient. As statistics show, lifelong learning indicators and economics and finance indicators are clearly correlated with innovation indicators, constituting a system of interrelated elements. If we aim for an innovative economy, we have to take care of the groundwork, i.e. education in the areas creating innovative attitudes and new knowledge. In what follows the authors present these relations in a clear way.

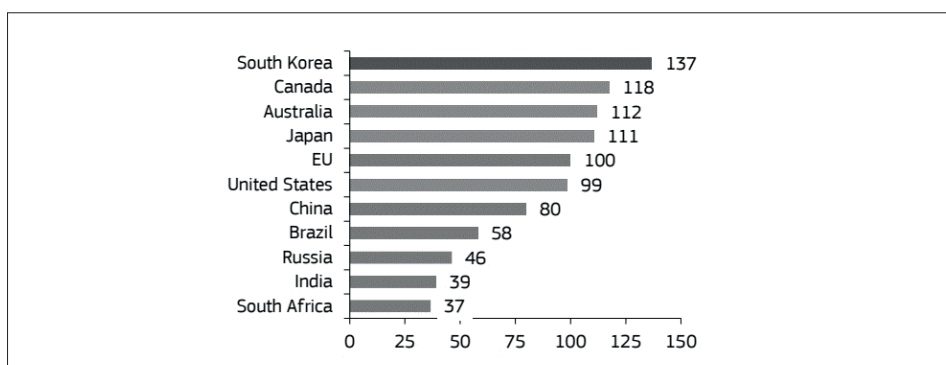


Chart 1.1. Global innovation performance

Source: *European Innovation Scoreboard 2019*, Luxembourg: Publication Office of the European Union, 2019, p. 6.

2 *Commission Communication: Financial Education*, Commission of the European Communities, online: <https://ec.europa.eu/transparency/regdoc/rep/1/2007/PL/1-2007-808-PL-F1-1.Pdf> (accessed: 17.06.2020).

3 B. Świecka (2016), "Generacja Y w świecie finansów – finansial literacy i edukacja finansowa młodego pokolenia", [in:] E. Klamut (ed.), *Terapia finansów*, (Przedsiębiorczość i Zarządzanie, Vol. 17, sheet 8, part 3), Wydawnictwo SAN: Łódź–Warszawa, p. 223.

4 *Kierunki edukacji finansowej Rzecznika Finansowego. Założenia podstawowe*, Warszawa 2020, Retrieved from: https://rf.gov.pl/wp-content/uploads/2020/06/Kierunki_Edukacji_Finansowej_Rzecznik_Finansowy_czerwiec2020.pdf (accessed: 17.06.2019).

According to the latest *European Innovation Scoreboard* (EIS 2019), the respective EU performance has been on the rise for several years. For the first time Europe has outperformed the United States, the origin of the Third Wave society.⁵

South Korea, Canada, Australia and Japan are still innovation leaders, while China is catching up at a rate three times faster than the EU due to its recent economic growth (Chart 1.1).

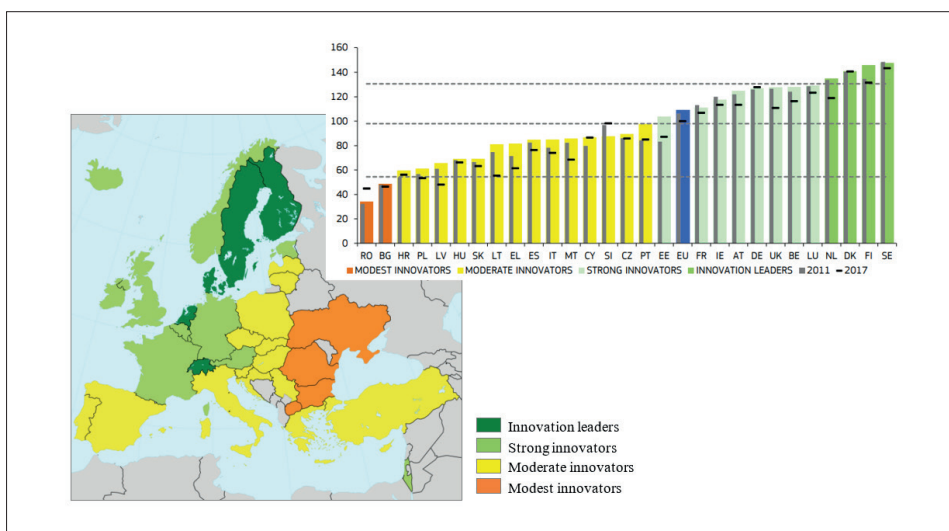


Figure 1.1. Innovation performance in Europe according to EIS 2019

Source: *European Innovation...*, p. 27.

The Nordic countries, the Netherlands and Switzerland are currently viewed as European innovation leaders. According to the assessment standards, Poland is still far from being at the forefront of Europe and is considered to be a Moderate Innovator. Countries assessed under the EIS are divided into four groups: Innovation Leaders, Strong Innovators, Moderate Innovators and Modest Innovators (Figure 1.1). The score awarded to the individual countries is made on the basis of a number of indicators (currently 27), including those assessing human resources as one of the elements of innovation potential. Apart from the number of PhD degrees and

5 The development philosophy of the contemporary society, based on innovation in its broadest sense, is worth exploring through the prism of relevant “non-scientific classics”, namely A. Toffler’s *Third Wave*. Interestingly, the author, more a visionary than a scientist, openly admits that he does not care about the recognition or approval of the scientific world. His inquiries and analyses should help us direct our actions, aimed at raising awareness of the need for technological development due to future challenges in all areas of life, including the economy and, consequently, science. This is why, despite his quasi-scientific research, he is highly regarded by academics, as evidenced by “interdisciplinary” honorary doctorates he was awarded in natural and social sciences, literature or law. See A. Toffler (1985), *Trzecia fala*, transl. E. Woydyłło, Państwowy Instytut Wydawniczy: Warszawa; (orig. A. Toffler (1980), *Third Wave*, William Morrow: New York).

the number of students, the human capital assessment takes into account the number of people covered by *lifelong learning* (LLL),⁶ which is already an indispensable attribute of any modern economy and any labour market. The division of educational activities into school, work and retirement periods is not applicable any more, as LLL promotes learning and development throughout life, from childhood to retirement. Permanent education is characterised by:

- consideration of the learning process from the perspective of the learner rather than from the perspective of providers of educational services, whether institutions or individuals;
- provision of learning opportunities in various forms, places and at different stages of life;
- equal treatment of diverse educational paths, assessed on the basis of learning outcomes and procedures, validating learning outcomes achieved;
- implementation of the procedures and processes for the recognition of learning outcomes achieved outside the formal system;
- measurement of the quality of education based on changes in a learner's literacy and skills rather than the characteristics of educational institutions;
- provision of educational and career advice;
- creation of learning opportunities closer to a learner's home (in the local community, using IT technology).⁷

Key Competences

- learning to learn,
- communication in the mother tongue and in foreign language,
- digital competence,
- mathematical, scientific and technological competences,
- social and civic competences,
- sense of initiative and entrepreneurship,
- cultural awareness and expression.

Lifelong learning is part of the concept that views learning as a process continuing throughout life. According to the UNESCO definition, lifelong learning is a set of formal and informal activities through which adults can enrich their knowledge, develop their talents and acquire vocational qualifications and competences that enable them to meet their own needs or adapt to the expectations of society and the labour market. The interpretation adopted for the EIS 2019 is similar. It refers to persons aged 25–64, and emphasises that learning intention or objective is the critical point, distinguishing LLL from non-learning activities, such as cultural or sports activities. According to the Polish legislation lifelong learning is considered to be equal to education

6 Decision No. 1720/2006/EC of the European Parliament and of the Council of 15 November 2006 establishing the action programme in the field of lifelong learning (OJ L 327/45). (In Polish: Decyzja nr 1720/2006/WE Parlamentu Europejskiego i Rady z dnia 15 listopada 2006 r. ustanawiająca program działań w zakresie uczenia się przez całe życie (Dz.U. UE L 327/45), online: <https://eur-lex.europa.eu/legal-content/PL/TXT/PDF/?uri=CELEX:32006D1720&-from=SV> (accessed: 17.06.2019)).

7 G. Maniak (2015), "Kształcenie przez całe życie – idea i realizacja. Polska na tle Unii Europejskiej", *Studia Ekonomiczne*, No. 214. See *Perspektywa uczenia się przez całe życie* – a strategic document developed by the Interministerial Committee for Lifelong Learning, including the National Qualification Framework, 2013.

provided in evening schools, secondary vocational schools and vocational colleges, as well as to a situation where persons who have completed compulsory education obtain and supplement their knowledge, skills and professional qualifications through non-school training.

One of the benchmarks set in the strategic framework for European cooperation and training (ET 2020) was to reach by 2020 the level of at least 15 percent of adults, participating in lifelong learning activities.⁸

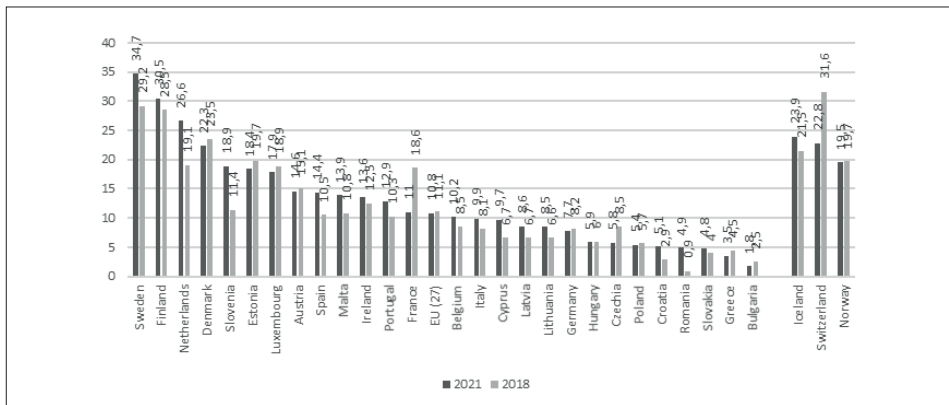
However, the research data for 2021 show that this rate for the EU was 11 percent (although it has been gradually increasing: 2020 – 9 percent, 2019 – 11 percent, 2017 – 10.9 percent, 2015 – 10.7 percent) and it was higher for women (11.6 percent) than men (10.1 percent). Across the EU Member States the highest adult participation rate in learning were noted in Sweden (34.7 percent), Finland (30.5 percent) and the Netherlands (26.6 percent). At the other end of the scale, the lowest shares of adult participation in learning were recorded in Bulgaria (1.8 percent), Greece (3.5 percent), Slovakia (4.6 percent), Romania (4.9 percent), Croatia (5.1 percent), Hungary (5.7 percent), Germany (6.2 percent), Lithuania (6.5 percent), Latvia (6.9 percent), Cyprus (7.7 percent), Italy (9.9 percent), Belgium (10.2 percent), Ireland (10.3 percent), Portugal (10.7 percent), Malta (10.8 percent), Spain (10.9 percent), Austria (14.1 percent), Luxembourg (14.9 percent), Slovenia (18.9 percent), Estonia (19.7 percent), Denmark (22.3 percent), Finland (26.6 percent), Netherlands (28.5 percent), Sweden (29.7 percent), EU (27) (31.6 percent), Switzerland (31.6 percent), Norway (31.6 percent).

Competences are the potential enabling us to achieve desired results.

M. Armstrong

No competences / no results, no organisation.

D.D. Dubois,
W.J. Rothwell



(% of the population aged 25–64)

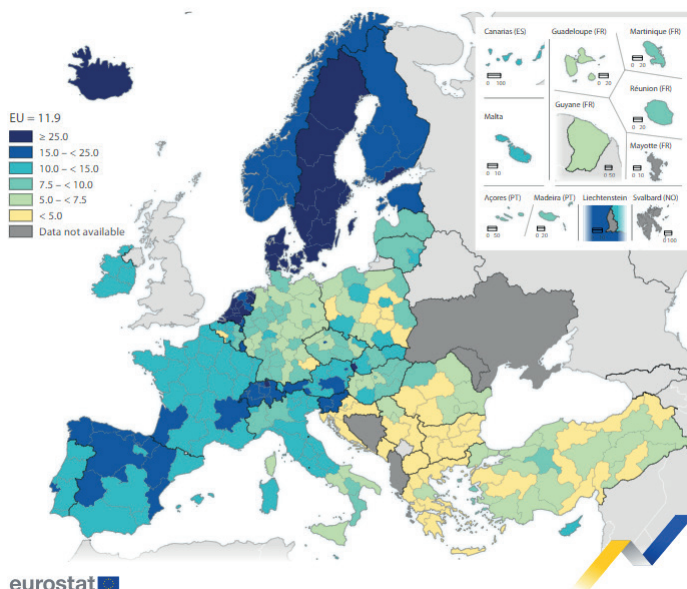
Chart 1.2. Adult participation in learning in 2018 and 2021

Source: <https://ec.europa.eu/eurostat>.

- 8 The indicator measuring lifelong learning is defined as the percentage of individuals aged 25–64 who stated that they had been provided formal or informal education and training in the four weeks preceding the survey.
- 9 *Participation in Lifelong Learning Increases in 2021*, Eurostat online; Retrieved from: https://ec.europa.eu/eurostat/web/products-eurostat-news/w/edn-20230130-1?fbclid=IwAR0JHYf3DlkC5M-pejN8-6jjsXgSLlrT1QBrwneUUb4ra2UkIH_xvqsElKxM (accessed: 17.06.2020).

The lifelong learning strategy implemented by individual EU states is based on a set of competences, hereinafter referred to as key competences. The European Commission (EC) has recognised that such competences enable people to continuously adapt to dynamic changes in their environment and to pursue innovation. Competences are defined as the proven ability to use knowledge, skills and personal, social or methodological abilities at work or in research for the purpose of professional and personal development.¹⁰ The key competences include:

- learning to learn, i.e. effective absorption of knowledge and its practical application in solving problems;
- communication in the mother tongue and in a foreign language, making it possible to interpret concepts, facts, opinions and to express thoughts and feelings, which is indispensable in the era of project work; it also makes it possible to develop mediation skills and to understand cultural differences, which is important in the processes of globalisation and internationalisation;



Note: Montenegro, North Macedonia and Türkiye, 2020. Source: Eurostat (online data code: trng_lfse_04) Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat Cartography: Eurostat – IMAGE, 10/2023

Figure 1.2. Participation rate in education and training, 2022 (% of people aged 25–64 who participated in education and training during the four weeks prior to the survey, by NUTS 2 regions)

Source: <https://ec.europa.eu/eurostat/en/web/products-eurostat-news/w/ddn-20231016-2>.

¹⁰ Council Recommendation of 23 April 2008 on the European Qualifications Framework for Lifelong Learning (2017/C 189/03).

- digital competences and mathematical, scientific and technological competences which – combined – allow for technological development, being the response to the needs of a society struggling with numerous problems of civilisation;
- social and civic competences that are a prerequisite for constructive democratic participation in social and professional life while taking into account challenges resulting from increased mobility of the society thus contributing to its heterogeneity;
- sense of initiative and entrepreneurship, understood as the ability to generate and implement ideas, to create innovations and to put them into practice;
- cultural awareness and expression that should be equated with the ability to appreciate the creative aspect of ideas, experiences and emotions in development processes, including economic development.¹¹

According to the European Committee (EC), such a set of competences is necessary for social cohesion, personal fulfilment, active citizenship and employability in a knowledge society. It remains a common belief that it is the concept of knowledge society that poses opportunities for much faster development of scientific research and thus introducing innovation in Europe to put it in a position of a global innovation driver.¹² Many of these competences are permeated by economic and financial literacy. Education in this domain, especially non-formal education and informal learning (more on these concepts in section 1.3), help to reduce social and financial exclusion, poverty and destitution, and to ensure equal opportunities on the labour and financial markets.¹³

The implementation of the lifelong learning concept encourages employers to manage human resources, based on the competence model,¹⁴ as this approach focuses on a person – an employee in a given position and not the position itself.¹⁵ Thus, the long-term goal of an organisation becomes the acquisition and development of highly competent people. Their potential, that is knowledge, skills and attitudes (broadly defined as patience, perseverance, flexibility, self-confidence, motivation, readiness to act) creates a foundation for integrating other areas of activity and effectively achieving the goals of the entire organisation.¹⁶

11 Recommendation of the European Parliament and of the Council of 18 December 2006 on Key Competences for Lifelong Learning (2006/962/EC).

12 A Renewed Agenda for Research and Innovation: *Europe's chance to shape the future*, European Commission – Press release, Brussels (accessed: 15.05.2018).

13 See B. Świecka (2018), “Kompetencje finansowe i edukacja finansowa. Ujęcie teoretyczne i praktyczne”, *Journal of Insurance, Financial Markets & Consumer Protection*, No. 27 (1). Cf. J.K. Solarz *et al.* (2018), *Całościowa edukacja finansowa. Teoria i praktyka*, Wydawnictwo Społecznej Akademii Nauk: Łódź–Warszawa.

14 Since the early 1990s competence-based human resources management has been gaining traction in the United States and Western Europe.

15 Zob. Ł. Sienkiewicz *et al.* (2013), *Zarządzanie zasobami ludzkimi w oparciu o kompetencje. Perspektywa uczenia się przez całe życie*, Instytut Badań Edukacyjnych: Warszawa, p. 10.

16 See *ibidem*, s. 14–19.

Competence model

The focus is on the employee in a position, not the position itself.

Concept of window and mirror

Appreciating others when succeeding and taking responsibility when other fail.

Knowledge worker

In his work he uses reason more often than manual skills. He is rewarded for thinking.

Due to the fact that the economy needs to develop on the basis of knowledge, the knowledge worker becomes an essential element of this system. What distinguishes such a worker? Peter Drucker argues that knowledge workers are more likely to use reason than manual skills in their work (and the scholar said so back in 1959). Some specialists link this concept to specific professions and fields of the economy where thinking is rewarded, namely: management, business and financial operations, medicine, law, education, computer and mathematical sciences, architecture and engineering or natural and social sciences.¹⁷ In the author's opinion, this constricted view is not unequivocally correct. From the employer's perspective, a valuable employee will always be someone who relies on experience when performing even simple tasks, who is open to new knowledge and who is willing to develop and

share it with others.¹⁸ Jim Collins presented a recipe for filling senior positions in an organisation with the appropriate people. It is basically about engaging people who are independent, responsible and mature along the concept/principles of "window and mirror". The concept of "window" stands for acknowledging the contribution of others to one's success, without emphasising one's own merits, while the concept of "mirror" stands for taking responsibility for one's failures.¹⁹

It is worth mentioning that the Sectoral Council for Financial Sector Competences (Polish: *Sektorowa Rada ds. Kompetencji Sektora Finansowego*) was among the units that were established by the Polish Agency for Enterprise Development (Polish: *Polska Agencja Rozwoju Przedsiębiorczości*) to follow the trends and to meet the needs indicated above. Its range of competence covers:

- including of the Sectoral Qualification Framework (Polish: *Sektorowa Rama Kwalifikacji*) and selected sectoral qualifications in the Integrated Qualification System (Polish: *Zintegrowany System Kwalifikacji*) in order to harmonise the Polish market with the European market;
- conducting research and analysis of the sector's competence-related needs and implementing new initiatives, based on the research carried out and analysis performed;

17 See T.H. Davenport (2007), *Zarządzanie pracownikami wiedzy*, transl. M. Lany, Oficyna Wolters Kluwer Business: Kraków, p. 24; M. Morawski (2009), *Zarządzanie profesjonalistami*, PWE: Warszawa, p. 42.

18 This was the opinion of: G. Krough, K. Ichijo, I. Nonaka (2000), *Enabling Knowledge Creation. How to Unlock the Mystery of Tacit Knowledge and Release the Power of Innovation*, Oxford University Press: New York, p. 12.

19 J. Collins (2015), *Jak upadają giganci i dlaczego niektóre firmy nigdy się nie poddają*, transl. M. Lipa, MT Biznes: Warszawa, p. 190.

- initiating and supporting development of new sectoral standards, including qualifications, in response to new development trends while taking into account regulatory, technological and demographic changes;
- development of sectoral cooperation of all stakeholders in order to shorten the response time of the education and training offer, addressing new competence needs of the sector;
- undertaking efforts, aimed at enhancing the career prospects of young workers who will benefit from the organisation, transparency and comparability of qualifications, both nationally and internationally.²⁰

All of the above-mentioned endeavours share a common denominator, that is building the potential for the development of innovation in Europe as whole, in the individual European countries and on the regional niveau. It is very important to capture the potential distinctiveness at the regional level in view of the bottom-up initiatives that originate out of the well-diagnosed needs, and the involvement and development of local resources. When we take a look at the performance of the individual European regions with regard to innovation development, we find that Scandinavia, the British Islands, Central Europe and – partly – Portugal are Leaders (L) and Strong Innovators (SI). The Iberian Peninsula, and even more so Central and Eastern Europe, have a lot of catch up work to do. None of the Polish regions (Figure 1.3) is even a Strong Innovator with a “minus” (SI–). The Regional Innovation Scoreboard (RIS) has adopted this classification of regions with four basic categories of the EIS (Leader and Strong, Moderate, Modest Innovator) further divided into three subcategories: (–), full assessment, (+). Thus, in Poland only the Warsaw region is a Moderate Innovator “with plus” (M+). The following provinces: Małopolskie and Pomorskie, Wielkopolskie, Łódzkie, Dolnośląskie, Śląskie and Podkarpackie earned the score of Moderate (M) or Moderate “minus” (M–). The most modest scores were awarded to: the provinces of Warmińsko-Mazurskie, Podlaskie, Zachodniopomorskie, Opolskie and Lubuskie. The European data reveal an interesting property – regions performing well in innovation development are characterised by a very high rate of implementation of the lifelong learning concept, the highest among the parameters covered by evaluation. A similar correlation is found in Strong Innovators, even though the relevant indicator is much lower than the one in Leaders, but it is still the best rated one among the data collected for this group. The performance in lifelong learning is one of the indicators that were rated with an average score in Moderate Innovators, and Modest Innovators earned the weakest

²⁰ See Founding Declaration of Sectoral Council for *Financial Sector Competences*, Retrieved from: <https://rada.wib.org.pl/deklaracja-zalozycielska/> (accessed: 17.06.2019).

scores in this regard.²¹ Hence, it can be assumed that *lifelong learning* makes profound sense from the perspective of pro-innovation activities.

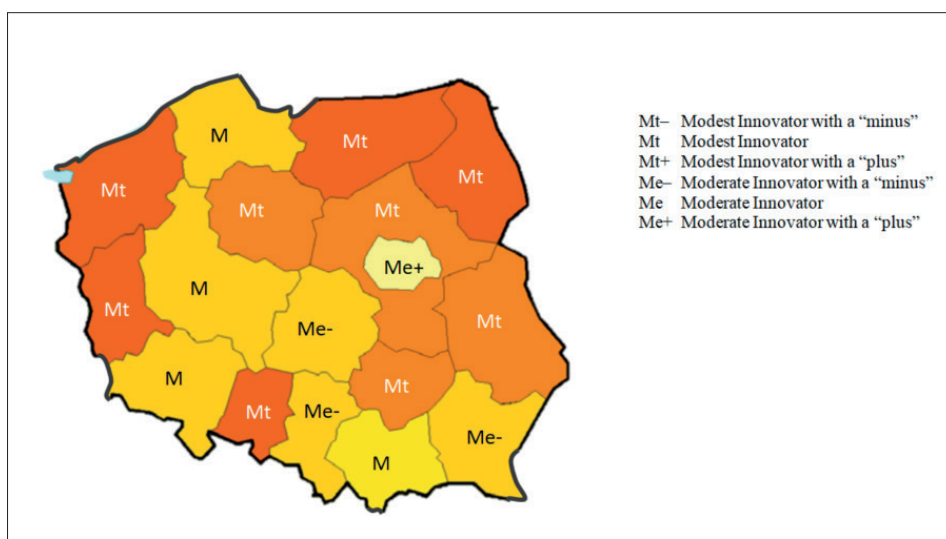


Figure 1.3. Polish Innovation System according to *Regional Innovation Scoreboard (RIS) 2019*

Source: Prepared by the authors on the basis of: *Regional Innovation Scoreboard 2019*, Luxembourg: Publication Office of the European Union, 2019, p. 28.

Since we have embedded the role of education, especially permanent education, in the processes of building pro-innovative competences, it is also necessary to indicate trends occurring on the labour market, now and in the future, since they are found to determine the choices people make when they extend their knowledge. It may also serve as a hint as to what we need to focus on when providing education to children and young people, and where to emphasise economic and financial education as a category that is still far from being sufficiently addressed, yet found to be indispensable, both in professional life and (perhaps especially) in private life, away from work. The fact remains that without proper economic awareness and maturity, we become consumers who can easily be deceived and manipulated.

²¹ *Regional Innovation Scoreboard 2019*, Luxembourg: Publications Office of the European Union, 2019, p. 14.

1.2. Where is the labour market heading? The need for economic education

The labour market is undergoing significant changes due to increasing digitalisation and automation processes that go with them. The employee of the future, or perhaps more accurately the “contractor” of the future, should therefore be characterised by additional, often completely different, competences and more flexible organisation of work. Key competences are desirable, but in addition the interdisciplinary skills are required to approach any work project holistically. It is forecast that the economy will demand so-called e-leaders, who will skilfully combine economic, management and IT knowledge (Figure 1.4). By 2020, the EU economy will need up to one million such workers.

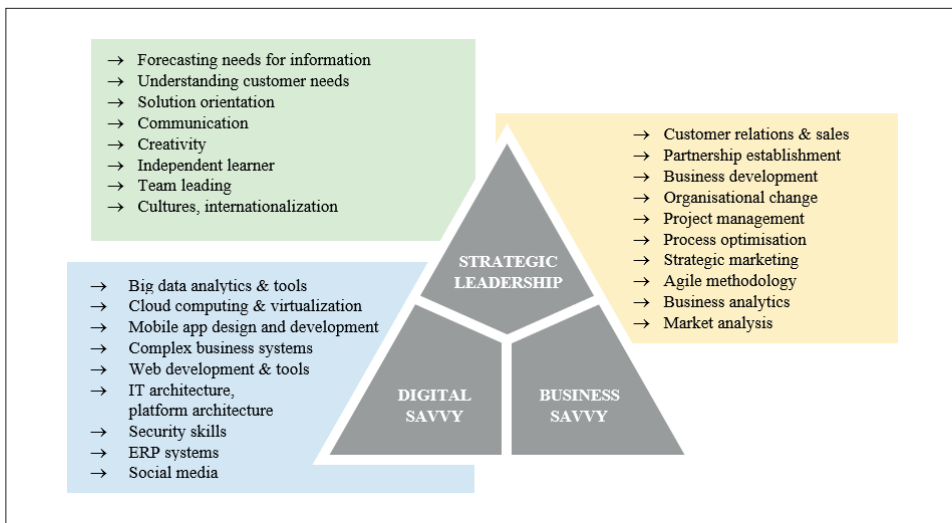


Figure 1.4. E-leader competences in digital economy

Source: *European Conference on “High-Tech and Leadership Skills for Europe”*, Brussels, 26th January 2017.

Who is an e-leader? It is a person who combines statistical skills, including the ability to analyse large data sets, and business and management skills, and can correctly interpret the results of analyses carried out against the backdrop of wide societal trends.

Specialists able to perform advanced data analysis must be among the best-paid professions as the economy progresses towards ubiquitous digitalisation. The digital revolution provides access to a vast amount of information, thus expanding opportunities but also creating information chaos due to which it is often difficult to verify the reliability of the data presented and to concentrate on the substance of the

Who is an e-leader?

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matter. By using artificial intelligence we can work more efficiently and minimise the risk of error, but we are also forced to develop additional skills and be able to analyse and interpret facts. From the perspective of the competence needs of enterprises a trend of extending “e-leader-like” qualifications is noted (Chart 1.3). Employers are looking for employees with technical, digital, managerial and sales skills. At the same time, they point out that these are the most difficult skills to acquire. According to the study of Heys Poland already referred to (still) little weight is given to competences in advanced data analysis.²² Purely financial competences are viewed by employers as somewhat less important, although

due to their strong connection with managerial and sales competences they should not be pushed into the background. Employers need employees with a wide range of economic competences. In the light of generational evolution,²³ notably we see an increasingly natural ability of young people to navigate the turns of digital technologies, but at the same time their low economic and financial awareness proves to be unsatisfactory, which makes the use of the innovative solutions that this technology offers risky.

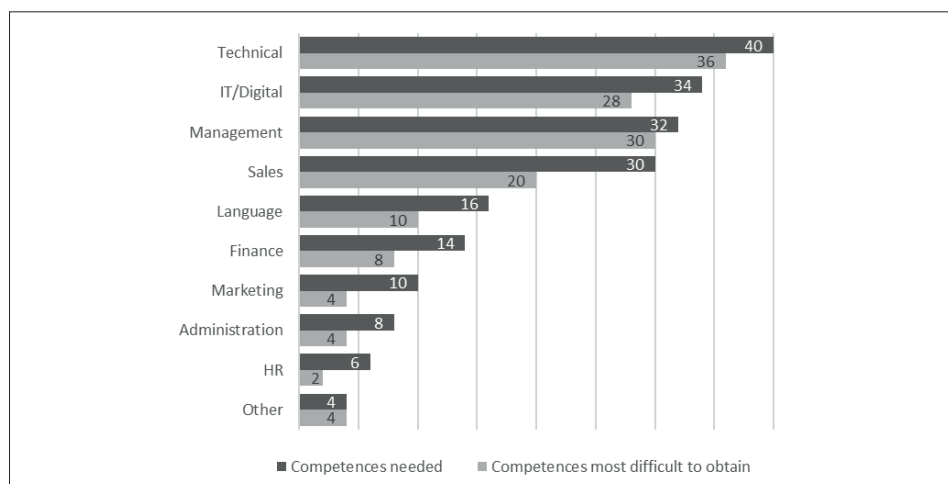


Chart 1.3. Competences most sought after by businesses (%)

Source: *Raport płacowy 2020. Trendy na rynku pracy*, Heys Poland, 2020, p. 19.

²² Apart from agile techniques, supply chain or law and compliance, big data were among the competences mentioned by the respondents.

²³ The boundaries between the generations Y and Z are relatively fuzzy (studies provide various definitions of these concepts); however, it can be assumed that generation Y (usually persons born between 1980 and 1994) is the one that benefits strongly from the digital revolution, while generation Z (persons born in 1995 and later) does not know a world without digitalisation at all.

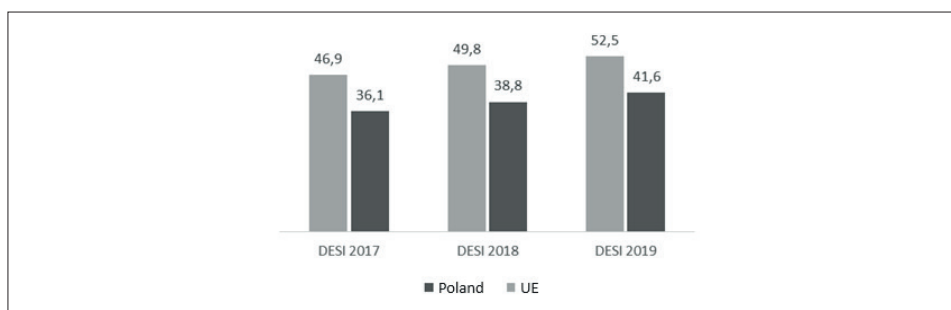


Chart 1.4. Digital Economy and Society Index – Poland vs. EU, 2017–2019

Source: Retrieved from: <https://ec.europa.eu/digital-single-market/en/desi>.

The awareness that digital competences are and will be crucial is high in Polish society (83 percent of respondents),²⁴ and yet the competences of Poles in this respect are amongst the lowest in Europe. Only Greece, Romania and Bulgaria perform worse than Poland out of the 28 countries surveyed. Even though the index score for Poland has been growing for several years, we could not reduce the distance to the EU average which has been also improving gradually (Chart 1.4). It should be noted, for comparison, that the digital leaders, Finland, Sweden, the Netherlands and Denmark scored almost 70 points in the DESI report.

One of the categories assessed within the framework of DESI is human capital and its digital skills. At this point it is worth mentioning some detailed data which perfectly show in which direction Polish human capital needs to develop to catch up with Europe (Table 1.1). Even though Polish IT specialists are well-regarded on the global market, their percentage in comparison with other countries is relatively low. The fact remains that it is still the best rated parameter in the group of indicators in point here. The backlog effect results from factors related to the education structure (i.e. the number of ICT graduates, including women) and the range of basic skills taught (general digital and IT skills). These are valuable guidelines for those who decide about the structure and profile of the education system, from primary school education onwards. The COVID-19 pandemic clearly revealed the deficiency here as students had to learn remotely and people had to collaborate online with public authorities. Considerable shortcomings were observable both in terms of skills and infrastructure.

24 Aktywni+. *Przyszłość rynku pracy*. Raport Gumtree 2017, online: https://www.delab.uw.edu.pl/wp-content/uploads/2017/04/DELabUW_raport_Aktywni.pdf (accessed: 17.06.2019).

Table 1.1. Digital skills of Poles as compared with the EU

Digital skills	Poland		EU	
Digital Economy and Society Index	DESI	DESI	DESI	DESI
Year	2017	2018	2019	2019
At least basic digital skills (% of individuals)	44	46	46	47
Above basic digital skills (% of individuals)	19	21	21	31
At least basic software skills (% of individuals)	47	49	49	60
ICT specialists (% of total employment)	2.6	2.7	2.8	3.7
Female ICT specialist (% of female employment)	0.8	0.9	0.9	1.4
ICT graduates (% of graduates)	2.9	3.0	3.1	3.5

Source: *Digital Economy and Society Index (DESI). 2019 Country Report Poland*, European Commission 2019, p. 8.

All areas of life, including those where human contact is irreplaceable, are or will be assisted by technology. The idea here is not to learn everything, but to specialise in what you want to do in the future while being able to improve your work thanks to technology. In fact, the digital economy facilitates the development of many professions where creativity, taking actions outside the box and cognitive skills will be rewarded. The quotation from Alvin Toffler is very applicable here. He wrote that the role of digitisation could be overestimated because “the illiterate of the 21st century

The illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn, and relearn.

A. Toffler

will not be those who cannot read and write, but those who cannot learn, unlearn, and relearn”. It is important that, while focusing on hard skills, we do not lose social skills, including the ability to work as a team, which often triggers conflicts. This applies also to social intelligence which overlaps with the model of emotional intelligence, meaning the ability to cooperate with others, based on the understanding of their needs, and also the ability to speak

one's mind openly.²⁵ It is also worth considering here how to manage such conflicts. If you can manage to accommodate differences constructively instead of destructively, the resulting solutions will have a positive impact on the team's morale, motivation, and it will definitely more often bring about added value in the form of solutions developed or even innovations.

Generations Y and Z also have a different perception of the work ethos, professional activity and time management. Also in these domains they need at least a minimum of economic and financial literacy. A few paragraphs above, the authors mentioned “contractors” as providers of work services. It was intentional in view of the debate on civil-law contracts, going on in the economic community. On the one hand these are referred to as “crap contracts” and they are associated with unfair practices, used by employers and as such they are disapproved of by suppliers. On

²⁵ See K. Albrecht (2006), *Social Intelligence: The New Science of Success*, Jossey-Bass: San Francisco.

the other hand, however, they are very popular among so-called freelancers. They prefer working on projects over a full-time job due to the flexible working hours scheme. This way they are self-reliant and stay independent, which is perceived as an advantage. “Freelancers” tend to represent highly specialised, creative and well-paid professions – the professions of “tomorrow” for which “knowledge” is required. This is one of the indicators of the market transformation that will continue to develop. Indeed, the development of artificial intelligence²⁶ and ubiquitous digitisation are causing widespread socio-economic changes – a new economy and a new world of labour emerge. The word “new” refers here not only to the type, but also the character and style.²⁷ It is sometimes difficult to find a precise match for certain new professions in the Polish Classification of Economic Activities (Polish: *Polska Klasyfikacja Działalności*, PKD),²⁸ even though it was updated in 2009. Additionally, some of the professions we have known so far are disappearing,²⁹ as is the philosophy of the job for life, often held for many years of professional activity, sometimes even until retirement.³⁰ Interestingly enough, 64 percent of Poles (as many as 80 percent of students) think that they will have more spare time due to progressing digitalisation and automation.³¹ Can that be? As early as in the 1930s John Maynard Keynes predicted a reduction in working time to 15 hours a week as a result of increasing productivity in the economy.³² No such thing happened. What is more, many people decide themselves to work longer hours than the standards set forth

26 According to the World Bank as many as 85 percent of jobs in some developing countries may be automated. See *Digital Dividends. World Development Report 2016*, The World Bank: Washington 2016.

27 The Oxford University suggests that up to 63 percent of jobs in transportation, warehousing, logistics and sales will be automated. See *Technology at Work v3.0. Automating e-Commerce from Click to Pick to Door*, Citi GPS: Global Perspectives & Solutions, Oxford Martin School 2017; Retrieved from: <https://www.oxfordmartin.ox.ac.uk/downloads/CITIPercent20REPORTpercent20ADRON.pdf> (accessed: 17.06.2019).

28 “Ordinance of the Council of Ministers of 24 December 2007 on Polish Classification of Economic Activities”, *Journal of Laws* 2007, No. 251, item 1885.

29 According to McKinsey technological change may result in the reduction of 45 percent of all professions while 5 percent of professions will disappear altogether. In the developing countries the changes will progress at a slower pace but their final extent will be much more severe for the labour market. See *Rewolucja AI. Jak sztuczna inteligencja zmieni biznes w Polsce. The AI Revolution. How Artificial Intelligence will Change Business in Poland*, McKinsey & Company: Forbes Polska 2017.

30 Technological changes make numerous professions obsolete. According to the estimates as many as 40 percent of professions in Poland and 57 percent in the OECD countries will disappear. Poles are well aware that in the coming decades most tasks will be carried out by robots – 64 percent of respondents claim that, while only 40 percent relate this to their own professional situation. See *Aktywni+...*

31 *Ibidem*.

32 Keynes believed that labour was an unpleasant necessity, so people would not work longer than indispensable. His prediction worked well in the US until the 1970s. By then the weekly working time had been reduced from the original 47 hours to 39. Productivity continues to rise as predicted by the economist, so why has the process of reducing working time halted? Interesting notes on standard working time may be found in: M. Zaremba’s, *Nie-praca i dobre bezrobocie technologiczne*; Retrieved from: <https://liberte.pl/nie-praca-i-dobre-bezrobocie-technologiczne/> (accessed: 17.06.2019).

Freelancer

A freelancer works on flexible terms and is not bound by an employment contract which he/she sees as a rigid form of commitment.

in the Labour Code provide for. In 2018 Poles worked on average 1,693 hours.³³ Working time has been gradually decreasing for the last three years, but it is still divergent from Western European standards, with 55 percent of employees in Poland still working overtime (compared to 74 percent in 2016).³⁴

Already Henry Ford emphasised that lifelong learning allows the mind to stay “young”. In times of information oversupply, one of the key competences, i.e. learning to learn, is to be understood in a new way as the ability to cope with cognitive overload. This phenomenon affects both adults and children. Thus, it is important that parents mould their children's educational path by choosing extracurricular activities carefully. The next part of the monograph is devoted to one form of education that has been developing intensively in the recent years, namely children's universities. Recent trends in learning, as advocated by the Open University,³⁵ emphasise the need for learning by playing. It is natural in a child or adolescent environment, but experts point out that this method of learning also works for adults. In this study, the authors focus on Generation Z, the youngest ones who still attend primary schools. This is due to the fact that initiatives like children's university primarily aim at promoting correct habits rather than correcting already-formed bad habits.

1.3. Children's university – innovation in education and learning

“Man is a lifelong learner” – this saying is often the starting point for undertaking lifelong learning activities with different target groups – with those who are still in compulsory schooling and those for whom this time is over. The concept of lifelong learning, like the aphorism cited above, points out that learning is not an obligation imposed only on students and it does not end when they reach the age of maturity. Thus, in addition to children and young people, adults have been included in the group of learners because this is thought to be beneficial to their social and economic development.

33 According to the statistics, in 2016 the average working time of a Polish worker was 1,711 hours, while the shortest working time was recorded in 2009. At that time a Pole worked 1,667 hours on average. The data per individual industry sectors shows that in 2018 construction workers worked the longest hours (1,813 hours). A slightly lower score of working time was reported for persons employed in hotel industry and food services (1,807 hours). Below average were the following professional categories: public administration and defence (1,689), health care and social welfare services (1,684). A person working in the education sector had the lowest number of working hours (1,271). The data refer to the organisations employing on average at least 10 employees annually. See <http://stat.gov.pl> (accessed: 17.06.2020).

34 *Extra-Hours, Stress, and Negative Consequences for Our Well-Being*. Raport 2018, Hays Poland, online: https://www.hays.pl/documents/63327/2210536/hays_2273153.pdf/4e0818a6-bb13-4013-c-426-da1582b1bbf8?t=1566538302596 (accessed: 17.06.2019).

35 *Trends in Learning Report 2019*. The Open University 2019; Retrieved from: <http://www.open.ac.uk/business/apprenticeships/blog/trends-learning-report-2019> (accessed: 17.06.2019).

As H. Ford said almost 100 years ago, “anyone who stops learning is old, whether at twenty or eighty. Anyone who keeps learning stays young. The greatest thing in life is to keep your mind young”. Lifelong learning in Poland focuses on adult education only. The aim here is not to exclude learners aged 18 or younger, but rather to stress the need to learn even after compulsory education has ended. Much attention has been paid to this issue in the literature of the subject. The focus in this monograph, however, is shifted to the concept of LLL understood as extracurricular activities executed within the framework of children's university, concurrently with primary school education.

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is old, whether at twenty
or eighty.
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The greatest thing
in life is to keep your mind
young.
H. Ford

As there is no formal definition of the term “children's university”, in Poland you can find various educational offers that are similar to this initiative. Including the work “university” in such offers makes it very catchy and points to innovation and the creative approach of their project providers. There is no closed catalogue of the attributes and qualities that should be absolutely preserved when promoting and implementing such projects, so it is difficult to combat any cases of abuse in this area. It remains the intention of the academic community to run children's universities high-quality initiatives which aim at science-oriented education, following the standards characteristic of universities, using tools and forms of communication appropriate to the age of the learners.

The European Children's Universities Network (EUCU.net) proposes a definition that combines the relevant requirements at three levels. Only if these requirements are met can we speak of a children's university (Figure 1.5):

- university environment, i.e. lectures given by scientists and university infrastructure is employed;
- didactic methods which mould open-minded, constructive and critical-thinking world citizens;
- recipients, i.e. children – their open-mindedness and curiosity are assets that undeniably decline with age, so this group of learners seems particularly susceptible to the promotion of academic values.

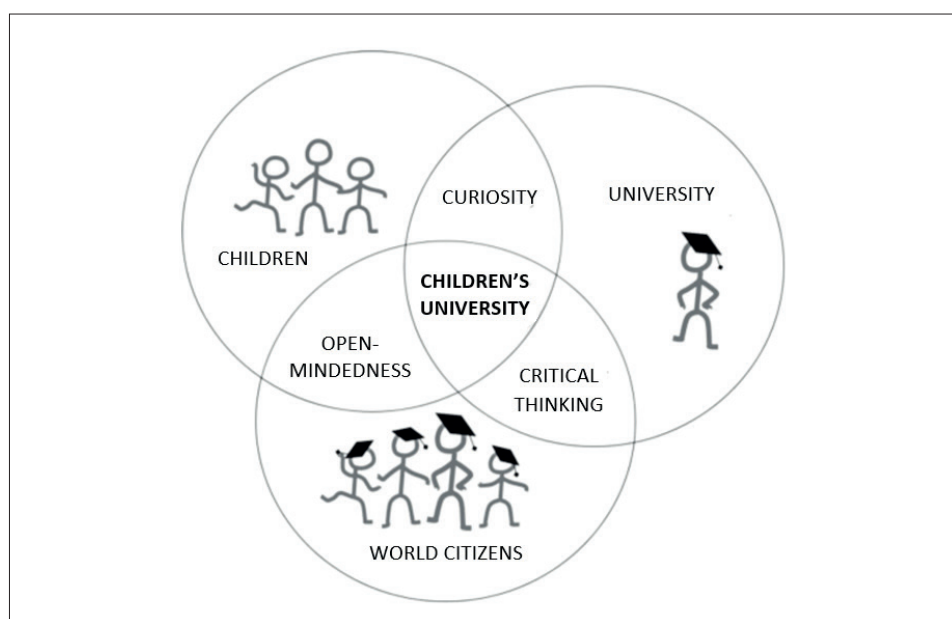


Figure 1.5. What is a children's university?

Source: Prepared by the authors on the basis of the data retrieved from: <https://eucu.net/video>.

The definition seems accurate as EUCU.net is in a way justified in establishing such a definition.³⁶ The network brings together universities from numerous countries, including Poland. It was established in 2008 as a result of the ECFUN project of virtual children's university.³⁷ Promotion of science among children awakens their interest in science and enhances their chances of later involvement in science and innovation development in the economy. This is what Europe expects and strives for, hence the support for initiatives under the EU framework programmes. The European Commission was imbued with such an innovative formula of science promotion, carried out by the German academic community. In 2005 its network project "Die Kinder Uni" was awarded the Descartes Prize by the EC.³⁸ The idea of popularising knowledge among children dates back to 2002, when the first European children's

³⁶ Retrieved from: <https://eucu.net/> (accessed: 17.06.2020).

³⁷ The University of Vienna acted as a coordinator of the project and, once the project was completed, it also took on the hosting duties for the independent member organisation EUCO.net that was founded in 2011 and is based in Vienna. The Polish contribution was the founding meeting held in 2011 in Cracow and the fact that four Polish institutions were among the founding members of EUCO.net: Children's University of Łódź (Polish: *Łódzki Uniwersytet Dzieci*), established by the University of Technology in Łódź, Children's University of Małopolska Foundation (Polish: *Fundacja Małopolski Uniwersytet Dzieci*), Children's University of Silesia in Katowice (Polish: *Uniwersytet Śląski Dzieci w Katowicach*), Unikids Children's University (Polish: *Uniwersytet Dzieci Unikids*). See <https://cordis.europa.eu/project/id/20817> (accessed: 14.01.2021).

³⁸ Retrieved from: <http://www.die-kinder-uni.de/> (accessed: 17.01.2022).

university was established at the University of Tübingen in Germany. The initiative was popularised by the journalists of the German magazine “Schwäbisches Tagblatt” who cooperated closely with scientists working for the benefit of children.³⁹

In order to keep the terms distinct, let us recall once again that education can take place in school and outside the school system, it can be formal, informal and non-formal (Figure 1.6). What are the differences between the distinct types and which one does the children's university belong to?⁴⁰ **Formal education** is provided by the entities of the education system / higher education (both public and non-public) in an organised, systematic and continuous manner, according to a clearly defined programme. It leads to a shift in the level of education, resulting from a formal improvement of qualifications which is documented and recognised by the system. **Informal education** lacks all these attributes. It is not institutionalised or organised. It does not raise qualifications. Thus, it does not translate directly into the level of education, although it may help earn a diploma. This is due to the fact that informal education makes it possible to extend knowledge and experience as a result of interactions with the environment. Such learning is both intentional and unintentional. Additionally, learning outcomes can be achieved in different ways, through formal education, non-formal education or informal learning.⁴¹

Children's university does not fall into any of these categories, as defined above.

Although it is an institutionalised and organised form of education, it does not provide the learners with a certificate of qualification, recognised by the education system. Students do not formally earn a higher education degree, although they “graduate”. Such a formula, just as courses, trainings or seminars, should be classified as **non-formal education**. Paul Fordham (1993) distinguished the typical characteristics of non-formal education:

- it is important for disadvantaged groups, as it creates a level playing field;
- it is an expression of concern about specific categories of people;
- it focuses on clearly defined objectives;
- it is flexible in terms of the organisation and methods used.

39 See U. Jansen, U. Steuernagel (2006), *Uniwersytet dziecięcy. Mądre odpowiedzi na trudne pytania*, transl. R. Kędzierski, Wydawnictwo Dwie Siostry: Warszawa.

40 See P. Ziółkowski (2016), *Uniwersytet dla dzieci. Uniwersytet Dziecięcy Wyższej Szkoły Gospodarki jako przykład innowacji pedagogicznej na rzecz rozwoju twórczości i kreatywności dziecięcej*, Wydawnictwo Uczelniane Wyższej Szkoły Gospodarki w Bydgoszczy: Bydgoszcz.

41 Council Recommendation of 22 May 2017.

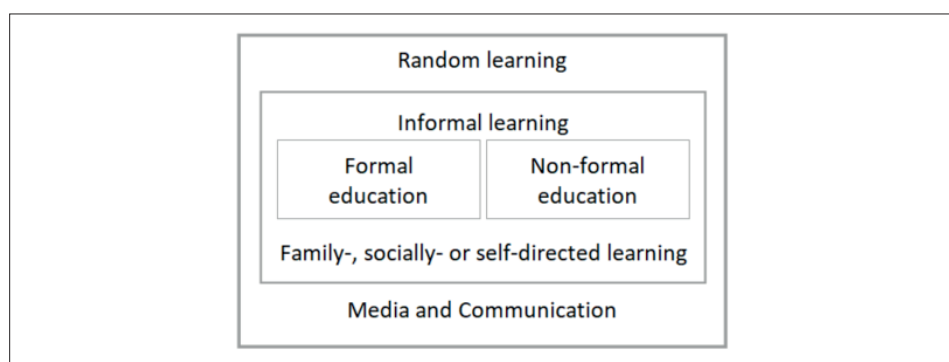


Figure 1.6. Scope of education

Source: *Classification of Learning Activities (CLA) MANUAL 2016*, Luxemburg: Publications Office of the European Union, 2016, p. 14.

The fact that, except for formal education, no type of education translates directly into the learner's qualifications does not mean that it does not help to obtain those qualifications. Since non-formal and informal education improve knowledge, skills and competences, the Council of the European Union recommended the validation of such learning outcomes.⁴² It is its opinion that this can influence the employability and mobility of socially and economically disadvantaged people or people with low skills and it can motivate them to learn throughout their lives.⁴³

At the beginning children's university was a complete innovation but within a few years it spread to many educational markets. In the last decade the popularity of children's universities has significantly grown. They have taken on different organisational models and covered various academic disciplines. From the innovation perspective this educational formula should be considered as:

- a product innovation, as it is a new offer of higher education institutions, addressing persons that may be their potential students in the future;
- a process innovation, as it poses a new way of scientific development;
- a marketing innovation, as it is a new channel for distributing information about the university's offer and it allows for innovative promotion of science.⁴⁴

⁴² Council Recommendation of 20 December 2012 on the validation of non-formal and informal learning.

⁴³ See E. Bacía (ed.) (2013), *Od kompetencji do kwalifikacji. Diagnoza rozwiązań i praktyk w zakresie walidowania efektów uczenia się*, Instytut Badań Edukacyjnych: Warszawa.

⁴⁴ OECD/Eurostat (2019), *Oslo Manual 2018: Guidelines for Collecting, Reporting and Using Data on Innovation*, 4th Edition, The Measurement of Scientific, Technological and Innovation Activities, OECD Publishing, Paris/Eurostat, Luxembourg; Retrieved from: <https://doi.org/10.1787/9789264304604-en> (accessed: 17.06.2019).

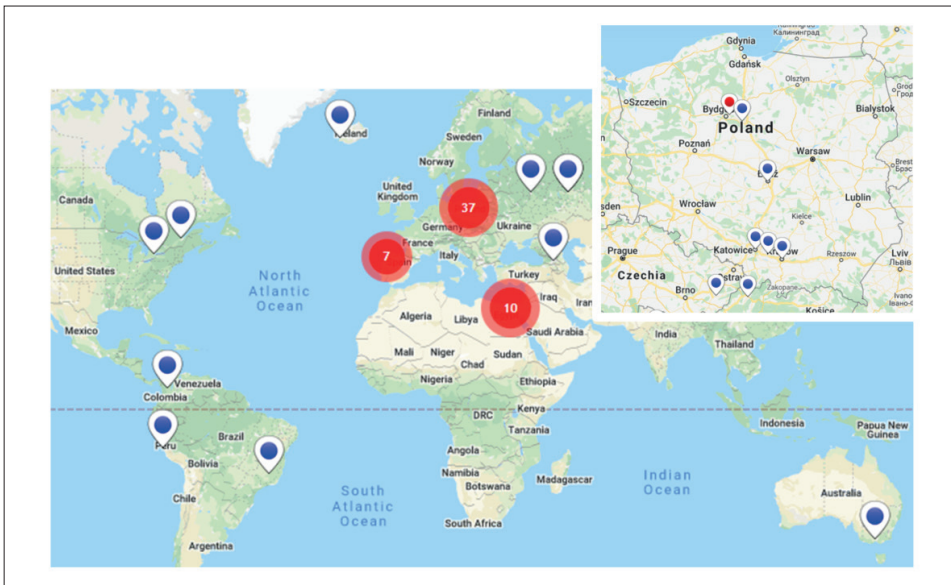


Figure 1.7. Members of EUCU.net

Source: Retrieved from: <https://eucu.net/the-members>.

Not all children's universities are members of international networks. Some initiatives have their own national associations, hence its functioning is not unified. EUCU.net may be viewed as a representative of general trends in the development of this phenomenon. This organisation, which stems from the original project, was supposed to bring together independently operating universities from various countries in order to develop common standards, to support new initiatives, and to be a platform where experience can be exchanged. At its strongly intensive developmental stage there were 130 partners. Today there are half as many partners (Figure 1.7). This means that this form of education has already reached its peak of popularity. Notably, on the market there are also entities with a long tradition and stable financing. It is funding that determines the number of initiatives. Many of them emerge when dedicated educational programmes are launched. However, they suspend their activities as soon as the funds are exhausted. The same holds true for the German network. Numerous children's universities are now dormant, some of them have campaigns going on, while others still operate and widen the use of e-learning solutions.

As noted by the Polish researchers, who have attempted to systematise knowledge on the development of children's universities, both in Poland and worldwide, several models of operation have been identified:

- the German model, predominant in Europe and similar to the traditional university lectures that are adapted to the age of the participants; students are recruited individually;
- the British model, also deployed in Australia and Asia, is based on collaboration with schools; teachers become often participants too. The projects take the form of urban workshops in learning destinations that are thematically linked to the knowledge transferred. Children's universities remain under the supervision of a controlling authority, ensuring the implementation of common operating and teaching principles;
- the American model is the so-called healthy classrooms – Tinkergarten,⁴⁵ which are gaining in popularity. They promote learning through contact with nature, enhanced by the active involvement of parents as class leaders who influence the education of their children;
- the maker movement,⁴⁶ albeit small-scale and popular mainly in the IT industry, it points out the important role of mentors in developing skills beyond the basic range that gifted students encounter in schools; mentors encourage students to pursue their interests. It is worth adding here that as many as 82 percent of Poles believe that computer programming should be a compulsory teaching subject in primary schools,⁴⁷ which would create opportunities for faster identification of IT talents.⁴⁸

The first Polish children's university was established in Krakow in 2007 as a joint initiative of the PAIDEIA Foundation, the Jagiellonian University and the Polish Academy of Sciences. The inspiration came from the actions taken in Tübingen. The initiator, Agata Wilam, representing business rather than science, managed to lastingly excite a wider group of people about the project, as this Children's University still operates and it has expanded its range of activities. It has had over 350,000 young students. 60,000 teachers have been involved and worked with 8,000 volunteers.⁴⁹ In this case, non-formal education and formal education have been merged – the foundation cooperates intensively with school teachers, thus enriching the school curricula. The UNIKIDS Children's University (Polish: *Uniwersytet Dziecięcy UNIKIDS*)⁵⁰ and the Children's University of Economics (Polish: *Ekonomiczny*

45 Retrieved from: <https://tinkergarten.com> (accessed: 13.01.2022).

46 A. Schejbal, B. McManus (2018), "Young People's Progression into Digital Creativity. Comparison of Research Findings from the UK and Poland", *E-mentor*, No. 4 (76); Retrieved from: <http://www.e-mentor.edu.pl/mobi/artukul/index/numer/76/id/1375> (accessed: 17.06.2019).

47 *Aktywni+...*

48 M. Zając (2018), "The Children University Model and Beyond – a Pilot Study", *E-mentor*, No. 4 (76); Retrieved from: <http://www.e-mentor.edu.pl/artukul/index/numer/76/id/1369> (accessed: 17.06.2019).

49 Retrieved from: <https://uniwersytetdzieci.pl> (accessed: 13.01.2022).

50 Retrieved from: <https://unikids.pl/> (accessed: 13.01.2022).

Uniwersytet Dziecięcy),⁵¹ which will be presented in the next section, networked on a similar basis. Additionally, various universities pursue their own projects.

Are children's universities better than schools? This is the wrong question, although it is asked quite often. Children's universities are not supposed to replace schools.

Both institutions should complement each other, both in terms of the education provided to children and cooperation between teachers and scientists. For all the parties involved this constitutes an opportunity to implement the concept of LLL.

This arrangement makes it possible for universities to gain very valuable knowledge about future students, which enables them to accurately design their long-term activities. By introducing children to the academic world, universities raise children's natural curiosity and influence their future choices (not only career-wise). Some of these decisions would not be made at all without such involvement. Additionally, due to the fact that children's universities often address non-urban communities, they create equal opportunities for children and their families who otherwise may not have had the opportunity to get to know the academic environment.⁵²

The important tasks that children will encounter in their professional life will prove easier if they are accustomed to continuous, but also purposeful, enrichment of their knowledge at a young age, taught to adopt a creative approach to emerging problems, and to adapt constantly to changes that cannot be excluded. Classes at the children's university are a welcome change of environment in the educational process and they make the learning more attractive for children. Contact with the university of which they will probably have more in the future will encourage them to set ambitious goals for themselves and thus increase their self-confidence.

1.4. Influencing children's and minors' financial literacy

Children's University as one of the forms of non-formal education is supposed to complement and enrich formal education. From the economic perspective, competences acquired by children should give them a future competitive advantage on the labour market. The said activities provide children with advice regarding the choice of secondary school soon while taking into account the career path they would like to follow. Another issue here is the children's awareness and maturity in everyday decision-making. Children's universities create this awareness, enabling children to look at many phenomena and processes around them in a more mature way. They act differently and take more rational decisions because specialists in particular fields have explained to them the correlations between some phenomena. Things

⁵¹ Retrieved from: <https://www.uniwersytet-dziecięcy.pl> (accessed: 13.01.2022).

⁵² See C. Gary, C. Dworsky (2013), "Children's Universities – a 'leading the way' Approach to Support the Engagement of Higher Education Institutions with and for Children", *Journal of Science Communication*, Vol. 12, No. 3.

are discussed at home and arguments are presented. At a young age these decisions are naturally limited in scope and importance, but the knowledge and correct habits, learnt in childhood and incorporated later will translate into responsible decision-making in adult life. Economic, financial and management topics present areas, where knowledge is helpful, regardless of whether it is used professionally or privately. The Children's University of Economics (Polish: *Ekonomiczny Uniwersytet Dzieci*, EUD) is an example of an initiative that explores these topics. As it turns out, economy and management are very broad areas – everyone manages limited resources and everyone is, in a way, a manager in his or her own field. This is why money, banks, economic entities, indicators, own business, that is hard skills, are discussed in the classes, but there is more to it. Soft skills, such as teamwork, leadership, self-presentation, business etiquette or time management, are also developed during the classes. The idea is that young students, whatever career path they may choose, act consciously and they are capable of “building the clock instead of telling the time”, referring to the words of James Collins and Jerry Porras.⁵³

The Children's University of Economics was established in 2008. The concept here corresponds to the definition of the children's university proposed by EUCU. net, that pays homage to university traditions. Initially, the project was implemented only in Warsaw at the Warsaw School of Economics (Polish: *Szkoła Główna Handlowa*), but just one year later other universities in other cities started to join the programme. The EUD was primarily intended for pupils in the fifth and sixth grades of primary schools. Later on, as children's universities were becoming popular an offer for older pupils attending secondary schools was initiated – Young Economist Academy (Polish: *Akademia Młodego Ekonomisty*, AME). The entire programme is coordinated by the Foundation for the Promotion and Accreditation of Economic Education in Warsaw (Polish: *Fundacja Promocji i Akredytacji Kierunków Ekonomicznych w Warszawie*, FPiAKE) in cooperation with higher education institutions in the respective regions (Figure 1.8). As of now, eight centres are active. Gdańsk has only the EUD, and Łódź – only the AME, and in the other cities both forms of the programme operate. Young people are guaranteed free participation thanks to the financial commitment of the banking sector and the contribution made by individual universities. The programme is carried out under the auspices of the Minister of Education.

The duration of studies for the future economists, financiers, managers is one semester. Learners can take part in several editions, as the individual semesters differ in terms of the topics covered. Each semester comprises six meetings, usually held every other week on selected weekdays in the afternoon. Pupils may apply individually, but many universities cooperate directly with schools, thus involving them in

53 J. Collins, J.I. Porras (1994), *Built to Last: Successful Habits of Visionary Companies*, Harper Business: New York, p. 61.

the recruitment process. The scheme of the classes is identical in all cities: a meeting of 90 minutes includes a lecture, workshop and presentation. The lecture is attended by up to 120 participants who then take part in group workshops and work under the guidance of a master trainer and volunteer tutors who are students of the respective university. Activities for children are accompanied by parent meetings, which allows for effective time management and also obtaining practical knowledge. On many occasions, organisers witnessed animated conversations of children and parents after the activities were concluded, with both sides sharing their impressions, reporting the tasks they were asked to do and what new, important things they have learned. At the end of the programme project participants take a test in economics. Learners from the regional centres can also compete against each other in national competitions which are characterised by a gripping, multi-stage process. *EKONOPEDIA – Magazyn Młodego Menedżera*, a magazine available both as printed and on-line editions, is published for those who are eager to acquire knowledge.



Figure 1.8. Activity map of the economic education for children and young people under the EUD and AME programmes

Source: Prepared by the authors on the basis of the material retrieved from: <https://www.uniwersytet-dzieci.pl>, <https://gimiversity.pl>.

Although each centre operates according to rules established for the whole network, individual centres implement their own ideas which often result from the nature of the university or the region where the classes are held. For example, some classes of the Children's University of Economics in Szczecin take place in the laboratories of the SERVICE INTER-LAB, Knowledge Transfer and Innovation Centre for the Service Sector (Polish: *Centrum Transferu Wiedzy i Innowacji dla Sektora Usług SERVICE INTER-LAB*), where students learn about finance, banking, the stock exchange, transport and logistics through simulation games or arrangements of real economic processes. They can take a look inside a cash dispenser, make their first million, verify the storage processes in the logistics laboratory, play on the stock market or design a transport network. IPMA Kids and IPMA Junior, projects for young project managers, implemented in cooperation with the International Project Management Association Polska⁵⁴ and recognised by the international community of project managers, was also started in Szczecin. Due to its geographical location, the University of Szczecin also cooperates with schools in the neighbouring Germany. The cross-border development provides additional opportunities for the promotion of science and for the creation of unique content about management and economic phenomena and processes in border areas.

Based on evaluation surveys conducted in all the centres in Poland, the vast majority, i.e. 97 percent, of the EUD students believe that participation in the project was a good decision, with 78 percent of them highly praising the economics classes, while 19 percent of the respondents express moderate satisfaction. Only 2 percent of the respondents are dissatisfied and 1 percent of the students could not answer this question (Chart 1.5).

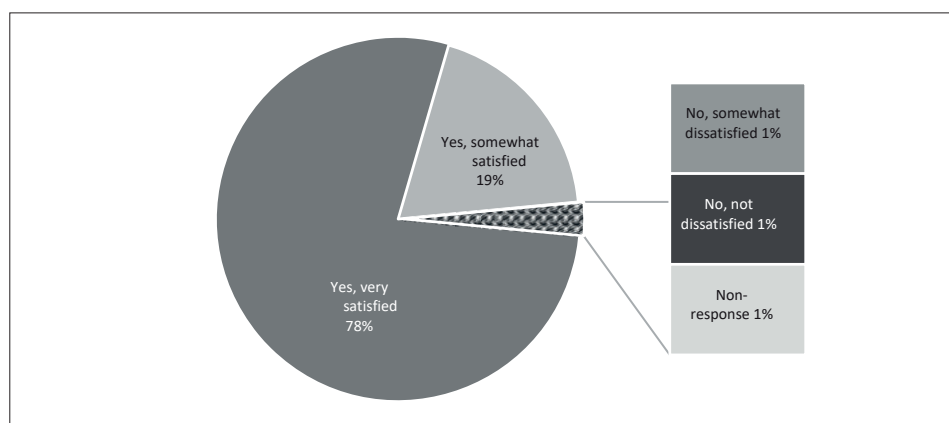


Chart 1.5. How would you rate your participation in the EUD project?

Source: https://www.uniwersytet-dzieciecy.pl/strona/3/p/O_projekcie.

⁵⁴ Retrieved from: <https://www.ipma.pl/> (accessed: 13.01.2022).

Results of a survey conducted in the Szczecin centre confirm that children are eager to learn about economics and they support this type of learning (Chart 1.6).⁵⁵ 65 percent of the learners believe that these classes will make it easier for them to make proper economic decisions in the future. 52 percent of the respondents are able to benefit from these classes already at this stage of their childhood. 37 percent of the learners declare that they would try their hand at business as adults and 16 percent want to work in an economics-related profession. 5 percent of the young students came to the conclusion that these subjects do not appeal to them because they have other interests; however, the course proved to be a valuable experience since it may prevent them from making the wrong choices in the future. 3 percent of the respondents believe that economics is something for adults. Finally, the topics discussed did not provide any useful knowledge for 4 percent of the respondents.

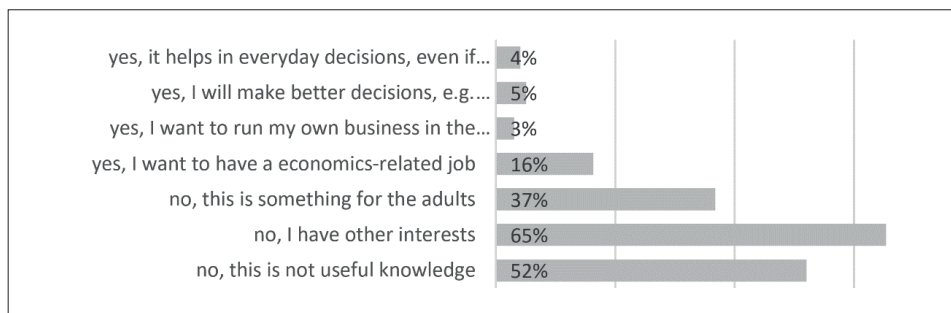


Chart 1.6. Is economics worth studying?

Source: Prepared by the authors.

Young students were also asked to give the sources of their knowledge on economic issues. Chart 1.7 shows the relevant data collected in two surveys, carried out on different occasions.⁵⁶ For interpretation purposes the responses “always” and “often” were regarded as systematic use of sources. Children learned about economics most often in after-school workshops (54 percent), conversations with parents (53 percent), school classes (52 percent) and TV programmes (50 percent). Articles on the Internet were read systematically by 32 percent of respondents and in newspapers by only 10 percent. Three years earlier, a similar percentage of children learnt about economics out of school (55 percent), but far fewer learnt about economics at school (32 percent). This change is a good sign for a closer cooperation between

⁵⁵ 98 students of EUD and AME in Szczecin, half of them girls, participated in the survey conducted in June 2019 (the data cover only fully completed questionnaires). Age distribution: 10-year olds (6 percent), 11-year olds (34 percent), 12-year olds (14 percent), 13-year olds (24 percent), 14-year olds (17 percent), 15-year olds (1 percent), 16-year olds (3 percent).

⁵⁶ Cf. M. Skweres-Kuchta (2017), “Inwestycja w rozwój kompetencji kluczowych wśród dzieci i młodzieży: studium przypadku”, *Ekonomiczne Problemy Usług*, No. 4 (129), pp. 245–255.

educational institutions at different levels, aimed at moulding rationally and effectively future knowledge workers. It was slightly less common for children to discuss economic topics with their parents (45 percent) and much less common for them to be interested in TV programmes (29 percent). Internet or newspapers articles were read by a similar number of respondents. The 2019 survey additionally included the option of “conversations with peers” as a source of knowledge about economics. It turns out that nearly half of the children discuss these difficult topics among themselves.

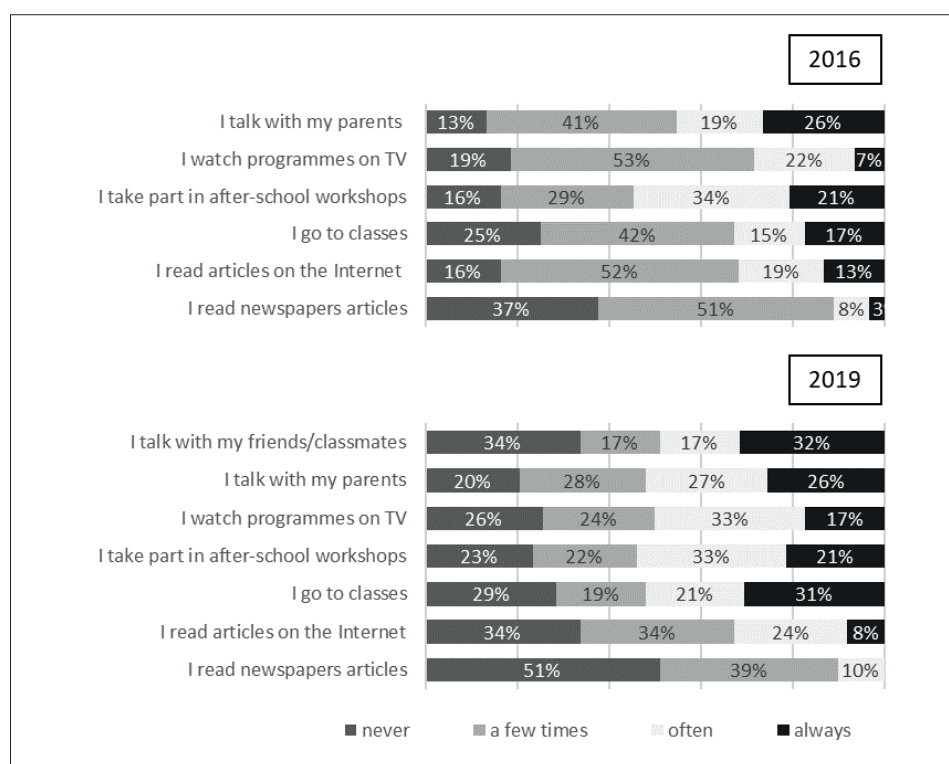


Chart 1.7. Where do you learn about economics?

Source: Prepared by the authors.

The first step in creating economic awareness in children is to entrust them with pocket money. 71 percent of parents give pocket money to their children, and 40 percent do so every month (Chart 1.8). Children's strategies for allocating this money vary. 27 percent of the respondents put all the money they have aside, with 19 percent doing so without a specific purpose in mind. 13 percent do not save money at all. The vast majority (59 percent) divide the amounts received – they keep some and spend the rest.

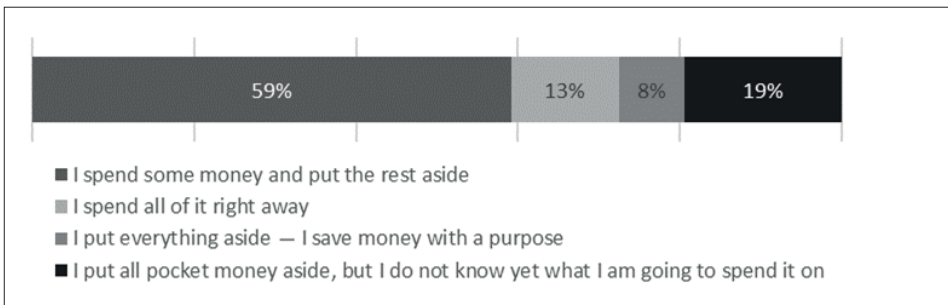


Chart 1.8. Pocket money spending

Source: Prepared by the authors.

Furthermore, it turned out that the young students have fairly good entrepreneurial intuition. When asked about the recipe for a successful business, most respondents indicated a good business idea (78 percent of respondents), followed by start-up capital (51 percent), persistence (47 percent) and finally economic knowledge (45 percent). 41 percent found it important to have contact with people who are creative in finding solutions to problems that may arise. Interestingly, only one third of the respondents felt that entrepreneurs needed in-depth knowledge of the industry they represent. The children considered luck to be the least important factor (Chart 1.9).

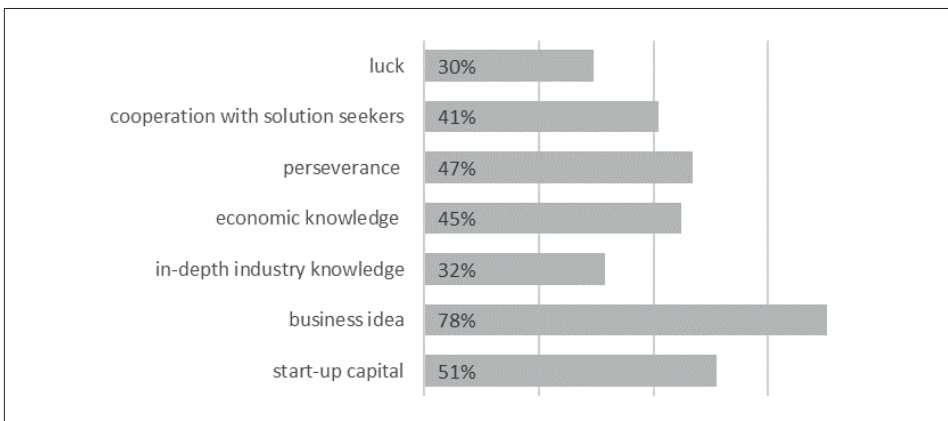


Chart 1.9. What determines success in business?

Source: Prepared by the authors.

Recent years have shown that the concept of children's university has passed the test of time with the parents' and children's wave of euphoria ebbing away. The number of applicants has stabilised. However, it is schools that take the initiative here

and send groups of children to the children's university classes. When analysing the interest of children (or parents in some cases), two trends are noticeable:

- the children participate in several, thematically differentiated initiatives in order to learn about various professions and decide which one suits them better. This way, the children often manage to discover their passion or they define an area of interest if they have not yet been able to commit themselves to something, which is normal at this age;
- there are also children who have already discovered their passions and they want to pursue them. In that case they choose to attend the university classes that match their interests.

The role of children's universities is also to turn children's and parents' attention to the latest trends in learning methods. The EUD teaches through real contact with a place (real experience) and uses machines and laboratory equipment. It teaches by encouraging children to do things, think and practise aloud, speak and make presentation.⁵⁷ All these activities are offered for the sake of future labour market participants. The programme implemented at the Children's University of Economics includes elements enabling children and young people to build their professional potential as e-leaders.⁵⁸ The classes develop qualities the future strategic leaders will require for anticipating information needs, analysing customer needs, seeking solutions creatively, being able to communicate and to learn and manage a team on an ongoing basis.⁵⁹

The knowledge the children's university graduates acquire makes them future business experts who can manage a project, analyse the market and optimise processes in the enterprise they manage and maintain proper customer relations. Educational contents are age-appropriate, obviously, but as the saying goes: What Youth is used to, age remembers / As the twig is bent, so is the tree inclined.

⁵⁷ *Trends in Learning...*

⁵⁸ For more information on this please refer to: M. Skweres-Kuchta (2018), "Children's Economic Education: are We Educate e-leaders?", *European Journal of Service Management*, Vol. 27/2, No. 3, pp. 379–388.

⁵⁹ New approach to leadership: B. Gąsiorowska, P. Gąsiorowski (2019), "Transforming 21st-century Leader Competencies by Developing Mindfulness", *E-mentor*, No. 5 (82); Retrieved from: http://www.e-mentor.edu.pl/_pdf/ementor82.pdf (accessed: 17.06.2019).

2. Theoretical aspects of financial education

2.1. How does financial education influence consumer decisions?

The role and importance of economic education are not diminishing. This applies especially to financial education. When the financial crisis started, they took on greater significance as many people were seriously affected by having committed their financial resources to seemingly profitable but also very risky financial transactions, such as policy deposits, currency options, loans denominated in foreign currencies etc. Although this lesson has not yet been fully learned, new challenges emerge. The first factor is the continuing ageing of the population and the increase of life expectancy. On the one hand, the elderly may be targeted by crooks and fraudsters and – on the other hand – they need economic education that would provide them with economic knowledge to be able to make wise, rational and effective financial decisions. The second challenge is the digitalisation of our lives, which entails transfer of all decision-making processes to our smartphones and tablets. The convenience that goes with it and the simplicity of the IT-enhanced operations speed up decision-making processes. Unlike in the past, when every financial operation required the physical presence of the persons involved, today this is not necessary. Consumers are flooded with offers sent electronically. This shortens the decision-making process significantly. It only takes a few clicks for a transaction to be completed, making it convenient and speeding up the operation considerably, but at the same time the risk of making the wrong decision, very often triggered by an impulse, rises. Finally, the third challenge is the new entrant on the economic market, that is the representatives of Generation Y, who do not know life without Facebook, Instagram and similar social media. The Millennials do not part with their mobile devices and they are very good with computers. They speak foreign languages and are familiar

with the term “global village”. Generation Y is more interested in images than in a written word and it is about to reach, or it has already reached, adulthood when decisions, including career-related or economic ones need to be made.

The financial needs of this group pose a challenge not only to financial institutions but also to IT companies. These needs are also a challenge in terms of financial knowledge and education.

Financial education cannot be separated from financial literacy and financial competence. The former, financial literacy, refers to competence in money management.¹ According to the OECD, financial literacy encompasses the awareness, knowledge, skills, attitudes and behaviours necessary to make financial decisions and ultimately achieve individual, financial well-being. Another, more specific understanding of the term delimits financial literacy to the skills that are useful in personal financial matters (e.g., real estate, insurance, investments, saving, tax and retirement planning).²

The skills, attitudes and behaviours required to make sound financial decisions and ultimately achieve individual financial well-being, like literacy, can be viewed as an expanding set of knowledge, skills and strategies that individuals build on throughout their lives, rather than as a fixed quantity.

Consumers’ understanding of financial (economic) concepts and their ability to interpret data correctly are generally referred to as consumer financial literacy. Economic knowledge constitutes one of the elements of economic socialisation, and its acquisition should not be limited to the period of early childhood (the period most associated with economic socialisation), because people should acquire relevant knowledge throughout their life.³ This is due to the constantly changing world around us, the emergence of new, hitherto unseen financial instruments, economic

phenomena that we have not been confronted with before.

Other definitions add that financial literacy is essential in understanding financial concepts such as compound interest, risk diversification, beneficial saving methods and consumer rights. Financial literacy surveys concentrate on:

1. Knowledge of basic financial concepts.
2. Awareness of products and services offered by various financial intermediaries and understanding the nature of risk.

Why do we need to inform ourselves about financial matters?

– to understand financial concepts and processes, e.g. compound interest, risk diversification, to analyse methods and ways of saving and investing, and to select the most favourable solutions; to be able to better manage the household budget.

1 M. Musiał (2018), *Efektywność gospodarowania finansami osobistymi w Polsce*, Wydawnictwo Naukowe Uniwersytetu Szczecińskiego: Szczecin, p. 47.

2 J. Valant (2015), *Improving the Financial Literacy of European Consumers*, European Parliamentary Research Service, Briefing, May 2015.

3 D. Maison (2013), *Polak w świecie finansów. O psychologicznych uwarunkowaniach zachowań ekonomicznych Polaków*, Wydawnictwo Naukowe PWN: Warszawa, pp. 183–184.

3. Understanding the management of personal finances and the use of financial services.

The term *financial literacy* is very often used synonymously with financial capability, financial knowledge and financial capacity. According to Marta Musiał, the use of so many terms covering the concept of financial literacy constitutes an obstacle to unifying this concept and introducing a common, universal and real definition. It needs to be noted that the discrepancies present in the Polish literature defining such terms as: financial knowledge, financial awareness, financial competence or financial education result from the fact that these terms are translations from the English language (Table 2.1).⁴

Table 2.1. Definitions of terms associated with financial education and their translation

English term	Definition
Financial knowledge	All financial information an individual possesses, including knowledge of financial concepts, phenomena and regulations essential to manage personal finances effectively.
Financial skills	Ability to use financial knowledge to make financial decisions, including carrying out tasks and solving problems related to the management of personal finances.
Financial abilities	Mental capacity to acquire financial knowledge easily and specific financial skills. Unlike skills which can be learned, abilities can be developed, but this is a long-term process, contingent – to a certain extent – on innate predispositions.
Financial competence	Set composed of financial knowledge and skills that an individual has acquired through learning and experience, combined with personal characteristics, such as motivation, beliefs or abilities that enable an individual to understand the financial situation and to take effective actions when managing their personal finances.
Financial attitudes	The capacity of an individual to evaluate financial phenomena in a certain way, on the basis of facts accumulated and associated emotions.
Financial behaviour	Conscious or unconscious management of personal finances over a period of time.
Financial awareness	A mental state where a person is aware of their financial situation and the external and internal factors affecting it.
Financial capability, financial literacy	Set of elements, such as financial knowledge, financial skills, attitudes and behaviours, combined with external and internal factors influencing them, enabling an individual to manage their personal finances effectively.

Source: M. Musiał (2018), *Efektywność gospodarowania finansami osobistymi w Polsce*, Wydawnictwo Naukowe Uniwersytetu Szczecińskiego: Szczecin, pp. 53, 54.

The concepts presented in Table 2.1 are complemented by the phenomena intrinsically linked to financial knowledge and education, such as financial exclusion and inclusion. As many studies show, both terms are closely correlated with the level of population financial literacy that, in turn, is affected by an effective education

⁴ M. Musiał, *op. cit.*, p. 50.

system, providing financial knowledge. Financial exclusion⁵ is most often defined as a process in which people face obstacles in accessing financial services suitable for their needs, and this prevents them from functioning properly in society.⁶ Financial inclusion, on the other hand, is about ensuring that economic actors take advantage of financial services. It is a multidimensional concept reflected, among others, in a wide range of financial products being offered. These include, for example, payments, savings, loans, insurance, pension or investment products.⁷

The process of financial education, viewed as an element of economic education, has many definitions and approaches. Economic education *sensu largo* encompasses the process of teaching and learning economics and all its disciplines, applying the knowledge obtained during education in practice and developing the economic awareness and imagination necessary to function in the market economy.⁸

According to the OECD, which has decided to address the issue of financial education comprehensively and globally, it is the process by which financial consumers improve their understanding of financial products, concepts and risks and, through information, instruction and/or objective advice, develop the skills and confidence to become more aware of financial risks and opportunities, to make informed choices, to know where to go for help, and to take other effective actions to improve their financial well-being.⁹

To sum up, most definitions describe it as a process of increasing knowledge of the financial market, financial instruments and skills, enabling consumers and recipients of financial services to make conscious financial decisions on financial services that they benefit from.¹⁰ According to all the definitions of financial education presented here the concept of financial education is seen as a process by which its beneficiaries increase their knowledge, awareness and skills in using financial products,

5 According to J. Adamek, financial exclusion needs to be considered in relation to social exclusion and poverty, as these phenomena may be in mutual cause-and-effect interaction. The access to and the use of basic services provided by the mainstream financial entities may be and in fact are the key factors determining social inclusion, self-esteem, family and social relationships as well as employment opportunities. On the other hand, social alienation influenced by various factors, e.g. unemployment, low income, poverty, low level of education, gender or racial discrimination are directly reflected in the access to and utilisation of, among others, financial services (J. Adamek (2010), *Mikrofinanse islamskie – założenia, produkty, praktyka*, CeDeWu: Warszawa, p. 17).

6 *Financial Services Provision and Prevention of Financial Exclusion*, European Commission VC/2006/-183, March 2008, p. 9.

7 *Financial Inclusion, Global Financial Development Report 2014*, The World Bank, 2013, p. 15.

8 B. Noga, M. Noga (2016), *Edukacja ekonomiczna społeczeństwa a edukacja przedsiębiorczości*, Studia i Prace WNEiZ US, No. 44/2, p. 258.

9 A. Atkinson, F.-A. Messy (2013), "Promoting Financial Inclusion through Financial Education, OECD/INFE. Evidence, Policies and Practice", *OECD Working Papers on Finance, Insurance and Private Pensions*, No. 34, p. 11.

10 A. Lusardi, O. Mitchell (2014), "The Economic Importance of Financial Literacy: Theory and Evidence", *Journal of Economic Literature*, No. 52 (1), pp. 5–44; D. Bednarska-Olejniczak (2017), "Edukacja finansowa jako przejaw społecznej odpowiedzialności banków", *E-mentor*, No. 5 (72), p. 42; Retrieved from: <http://www.e-mentor.edu.pl/artukul/index/numer/72/id/1325> (accessed: 17.06.2019).

thereby affecting their financial security (Table 2.2). All scholars agree that this is an ongoing process requiring consistency and determination. The preceding segmentation of its beneficiaries would help to effectively address each age group. Financial education should start at an early age and it should employ simple, playful methods, aimed at developing responsible behaviours.

Table 2.2. Definitions of financial education according to various authors

Author	Definition
Jan Krzysztof Solarz	Financial education improves market efficiency, facilitates the process of finding the right price, it reduces significantly information asymmetry and encourages the designing of financial products that meet the informed needs of customers.
Małgorzata Iwanicz-Drozdowska	Undertaking wide-ranging activities to disseminate knowledge and developing positive habits among citizens, enabling them to make right decisions on their personal finances and to dispose of their financial resources efficiently while taking into account their current and future needs.
Bożena Frączek	A tool or a widely understood process, aimed at improving low levels of financial literacy (knowledge, skills, awareness of financial attitudes and behaviours), encompassing also activities that are not related to the provision of educational content.
Beata Świecka	Financial education is a process of continuous learning with the aim of acquiring knowledge and ultimately using it in practice. Its implementation should contribute to raising financial awareness, developing appropriate habits and reducing the risk of making unfavourable financial decisions.
OECD ¹¹	The process by which financial consumers, investors improve their understanding of financial products, concepts and risks. They develop the skills and confidence through information, instruction and objective advice to become more aware of financial risks and opportunities, to make informed choices, to know where to go for help, and to take other effective actions to improve their financial well-being.
EU	Continuous process enabling individuals to improve their understanding of financial products and concepts, and to develop the skills necessary to make informed decisions in their choice of financial services and to be aware of financial risks and opportunities. Empowering individuals not just to shop around for the best financial services in the EU, but also to understand some essential basics of personal finances.

Source: M. Iwanicz-Drozdowska (ed.) (2011), *Edukacja i świadomość finansowa. Doświadczenia i perspektywy*, Oficyna Wydawnicza. Szkoła Główna Handlowa w Warszawie: Warszawa, p. 13; B. Świecka (2016), “Generacja Y w świecie finansów – financial literacy i edukacja finansowa młodego pokolenia”, [in:] E. Klamut (ed.), *Terapia finansów*, (Przedsiębiorczość i Zarządzanie, Vol. 17, sheet 8, part 3), Wydawnictwo SAN: Łódź–Warszawa, pp. 222–223; J.K. Solarz *et al.* (2018), *Całościowa edukacja finansowa. Teoria i praktyka*, (Studia i Monografie, No. 82), Wydawnictwo Społecznej Akademii Nauk: Łódź–Warszawa, p. 116; Komunikat Komisji. *Edukacja Finansowa*, KOM (2007), Bruksela 18.12.2007; B. Frączek (2014), “Innowacje w edukacji finansowej społeczeństwa”, *Studia Ekonomiczne*, No. 186 (*Innowacje a wzrost gospodarczy*, part 2), pp. 249, 259; A. Atkinson, F.-A. Messy (2013), “Promoting Financial Inclusion through Financial Education: OECD/INFE Evidence, Policies and Practice”, *OECD Working Papers on Finance, Insurance and Private Pensions*, No. 34, <https://doi.org/10.1787/5k3xz6m88smp-en>, p. 11.

¹¹ OECD – Organisation for Economic Co-operation and Development.

Financial education has become a very important element in the overall education of all social groups. It complements also legislative measures adopted to ensure that consumers are properly informed and receive proper, objective advice, as well as adequate protection.¹²

The aim of financial education is to disseminate knowledge and develop positive habits among society, leading them to make the right decisions in terms of managing their personal budgets and effectively allocating financial resources in accordance with their current and future needs.¹³ Financial education is closely linked to the concept of financial awareness, through which citizens will be aware of the opportunities and risks associated with financial products, both the common, standard ones as well as the modern products that are based on contemporary technical solutions. Financial education allows you to make smarter decisions, increases your self-confidence, especially when you have to face unforeseen macroeconomic phenomena affecting your income, in particular in times of crisis, thus improving the effectiveness of your financial decision-making.¹⁴ Beata Świecka suggests approaching financial education in a broader context, that is from the perspective of the process, values, set of activities, multi-purpose area and capital (Table 2.3).

Table 2.3. The concept of financial education

Financial education as	Characteristics
Capital	Financial education is a non-physical capital, an asset that should be increased to eradicate poverty, misery and destitution.
Value	If we assume that financial education is a capital worth investing in, and that capital is a “self-multiplying” value, we may assume that financial education is a social value that equips individuals with knowledge and skills to prepare them to manage financial matters.
Multi-function area	Financial education is a multi-faceted area that requires constant deepening and updating.
Set of tasks	Financial education is a set of activities aimed at increasing financial knowledge, developing skills and forming positive habits essential for rational and effective financial management, as well as skilful use of financial products and tools.
Process	Financial education is the process of enhancing financial competence that starts with improving knowledge and skills and leads to changes in attitudes and behaviour. This process can start at any stage of human development and continue throughout life.
Protection	Financial education is a set of tools designed to protect us against poor decisions that may result in negative financial consequences.

Source: B. Świecka (2018), “Kompetencje finansowe i edukacja finansowa. Ujęcie teoretyczne i praktyczne”, *Journal of Insurance, Financial Markets and Consumer Protection*, No. 27 (1), pp. 3–17.

12 I. Kuchciak *et al.* (2014), *Edukacja finansowa i inkluzja bankowa w realizacji koncepcji Silver Economy*, Wydawnictwo Uniwersytetu Łódzkiego: Łódź, p. 149.

13 M. Iwanicz-Drozdowska (ed.) (2011), *Edukacja i świadomość finansowa. Doświadczenia i perspektywy*, Oficyna Wydawnicza. Szkoła Główna Handlowa w Warszawie: Warszawa, p. 13.

14 L. Klapper, A. Lusardi, G.A. Panos (2013), “Financial Literacy and its Consequences: Evidence from Russia during the Financial Crisis”, *Journal of Banking and Finance*, No. 37, p. 3922.

Financial education can be both formal and informal. The synonym for formal education is school education and its curricular content. Its result is the level of financial education.¹⁵ This is not the only division. In order to systematise knowledge, B. Świecka divides financial education based on various criteria which are presented in Table 2.4.

Table 2.4. Types of financial education according to various criteria

Criterion	Type of financial education	Characteristics
Form of education	formal	It is implemented within the specific structure and organisation of education, by way of school education, university studies and various types of relevant training.
	informal	It involves the development of attitudes, behaviours throughout life as a result of experiences and the educational influence of the environment (family, friends, work, school).
	non-formal	It is carried out outside the school system in organised, often incidental activities.
Age of the learner	child education	It covers the period from the early childhood to the end of primary school.
	youth education	It is implemented in secondary and vocational schools.
	adult education	It is provided through studies, courses, training, workshops, seminars, conferences and other forms of education for persons aged 18 and older.
Admission	school	It is featured by a dual-track and it consists of two segments. The first being pupils and students, the second – teachers and university lecturers, specialising in financial education.
	extra-curricula	It is implemented in extra-curricular forms of education, competitions, additional classes and workshops.
Distance	in-person	It is based on direct contact between the teacher (educator) and the student.
	remote	It is based on remote forms of contact between the teacher and the student, using the Internet and other modern remote (on-line) forms of contact with multimedia tools.
Duration of the educational process	temporary	It lasts for a specified period of time, e.g. month, semester, year.
	lifelong	Lifelong learning undertaken on a continuing basis to improve knowledge, skills and/or qualifications for personal, social and/or professional reasons. It is a process of continual renewal, improvement and development of general and vocational qualifications of an individual throughout life.

Source: Prepared by the authors on the basis of: B. Świecka (2016), “Wiedza i edukacja finansowa gospodarstw domowych jako determinanty rozwoju obrotu bezgotówkowego”, DOI: 10.13140/RG.2.1.3998.4888, [in:] P. Bobilok, M. Żukowski (eds.), *Obrót bezgotówkowy w Polsce – stan i perspektywy*, Wydawnictwo Katolickiego Uniwersytetu Lubelskiego: Lublin, pp. 92–93.

Financial literacy is knowledge and understanding of financial concepts and risks as well as 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

¹⁵ J.K. Solarz *et al.*, *op. cit.*, p. 23.

participation in economic life.¹⁶ Through participation in the programmes concerning financial education, the public should obtain a higher level of knowledge and skills, not only in making financial decisions, managing their own budget, but also in achieving financial and non-financial goals. Those concerned can be involved in this process at any point in their lives on a continuous basis. B. Świecka believes that financial education should also be considered from the perspective of the four pillars of education,¹⁷ which – to ensure that all the participants benefit from it – should be considered complementary to one other, i.e.:

- a) Pillar 1 – Learning to know – general education providing opportunities for deepening knowledge;
 - b) Pillar 2 – Learning to act – acquiring skills, qualifications that can be used in practice;
 - c) Pillar 3 – Learning to live together – getting to know and understand other traditions, identities, acquiring the ability to resolve conflicts peacefully;
 - d) Pillar 4 – Learning to be – acquiring the skills to achieve goals, self-realisation and self-fulfilment.
- e) According to Jan Krzysztof Solarz, financial education allows people to maintain their dignity in the complex and dynamic world of finance. Everyone has the right to have as much control as possible over the financial aspects of their lives, which influences the establishment of the following models of financial education:
- information,
 - decision;
 - counselling:
 - critical problems,
 - support,
 - decision;
 - coaching:
 - financial goals pursued,
 - emotional and subject matter support,
 - decision,
 - behaviour.¹⁸

Everyone should have access to reliable and truthful information and universal financial advice to be able to make sound decisions. Given different needs and priorities of people, financial intermediation, offered *via* coaching should be personalised as much as possible.

16 PISA 2015 Assessment and Analytical Framework: *Science, Reading, Mathematic, Financial Literacy and Collaborative Problem Solving*, revised edition, PISA, OECD Publishing: Paris 2017, p. 87; Retrieved from: <http://dx.doi.org/10.1787/9789264281820-en> (accessed: 17.06.2019).

17 B. Świecka *et al.* (2019), *Financial Literacy and Financial Education. Theory and Survey*, De Gruyter Oldenbourg: Berlin, p. 8.

18 J.K. Solarz *et al.*, *op. cit.*, p. 119.

Necessary and true financial information and access to widespread and honest financial advice are essential for an effective financial education process. The next stage in reaching a higher level of financial education is *coaching*, i.e. personalising the financial intermediation offer to the specific, unique needs of households. Financial education focuses on three levels: basic (eliminating bad habits), advanced (selecting financial instruments suitable for solving given decision-making problems) and access to professional financial risk management when making every-day financial decisions.

It should start at an early age in order to build its sustainable foundations. The importance of the problem and the low level of financial education services is confirmed by the OECD's interest in the said issues. In 2003 the OECD announced the need for designing national strategies for financial education. In subsequent years, methodological guidance and principles for the strategy development were presented (Table 2.5). In 2015, the OECD adopted the financial education framework for young people by proposing the following objectives:

- making the Member States aware that financial education is seen as an essential part of the education of a modern man;
- drawing conclusions from the fact that financial risk concerns everybody;
- enabling access to professional financial services;
- responding to the internationalisation of financial services;
- ensuring people's mobility;
- ensuring international monitoring of consumer protection and financial services.¹⁹

Although financial education is important for society as a whole, young people constitute a group that is specifically in the focus of this process. The acquisition of knowledge by young people aged 15–18 is divided into five stages:

- stage I – acquisition of the ability to identify common financial products and interpret information relating to basic financial concepts and terms; ability to recognise the difference between wants and financial capabilities in everyday life;
- stage II – acquisition of the ability to carry out basic calculations of time value of money;
- stage III – ability to apply commonly used financial concepts, terms and products to one's situations; ability to calculate the interest rate of consumer credit;
- stage IV – ability to read bank and household balance sheets, to identify and calculate the long-term financial consequences of choices made;
- stage V – ability to identify transaction costs, external and internal costs of decisions made and to integrate financial instruments and concepts into the human life cycle and to understand the tax implications of one's actions.

¹⁹ *Ibidem*, p. 23.

Table 2.5. Chronology of the OECD financial education activities

Year	Activity
2003	OECD Member States announce the programme of designing national strategies for financial education
2005	Announcement of methodical guidelines for national strategies
2012	Designing standards for evaluation of national strategies for financial education
2015	Comprehensive review of national strategies
2015	Adoption of strategy framework for youth financial education
2016	Approval of strategy framework for adult financial education

Source: Prepared by the authors on the basis of: J.K. Solarz *et al.*, *op. cit.*, pp. 23–24.

The OECD research data show that many people lack basic financial knowledge. On average across G20 countries, fewer than half of adults (48 percent) could answer correctly 70 percent of the questions involving financial knowledge. In particular, understanding of diversification and compounding is weak, two concepts that are essential for people to recognise the consequences of financial decisions such as paying the minimum repayment on credit cards, and to manage their increasing responsibility for personal financial security in retirement. Four in ten people did not understand diversification and only 27 percent of respondents were able to both calculate simple interest and recognise the additional benefit of future compounding.²⁰

Financial education aims to increase financial knowledge and skills in order to rationalise financial decisions, manage personal finances effectively and to achieve financial and non-financial goals.²¹ The efforts put into designing, developing and implementing national strategies for financial education according to the OECD recommendations are important for improving financial education. Works on national strategies for financial education which started before the onset of the financial crisis were an integral part of the OECD's efforts aimed at complementing consumer protection and their financial inclusion in order to strengthen their financial stability and development.²² Developed countries (Japan, the Netherlands, New Zealand, Singapore, the United Kingdom and the United States) were the first ones to take the initiative to create a national strategy for financial education in the early 2000s. After the financial crisis of 2008 other countries followed. The OECD and its International Network for Financial Education (INFE) acknowledged the importance of the strategy and in 2010 an expert group which developed good practices was established to monitor these activities. This resulted in an increased number of national strategies created from 26 in 2011 to 45 two years later.²³ In Europe a dozen countries introduced National Strategies for Financial Education, while several of them adopted the second or third version (Table 2.6). The ongoing difficult financial

20 OECD (2017), *G20/OECD INFE Report on Adult Financial Literacy in G20 Countries*, pp. 7–8.

21 B. Świecka, "Kompetencje finansowe i edukacja finansowa...".

22 *Eadem*, "Generacja Y w świecie finansów...", p. 229.

23 *National Strategies for Financial Education OECD/INFE Policy Handbook*, 2015, p. 11.

and economic situation has prompted several countries to turn their attention to designing a national strategy as a means of influencing financial stability and development facilitating social inclusion.²⁴

The worldwide progress of works on national strategies for financial education varies. In some countries, the next version (generation) of national strategies is already being implemented, but there are also countries, such as Poland, where the creation of a national strategy has been planned for several years and the conceptual work is still in progress. Countries that have implemented their national strategies for financial education have done it for various reasons. In all the countries, the aim was to increase financial awareness. In addition, most countries aimed at increasing financial inclusion, long-term savings, reducing excessive debt and supporting pension reform. The development and implementation of a national strategy for financial education positively influences the level of financial knowledge and competence and it reduces barriers to accessing effective financial risk management in everyday life.²⁵

Table 2.6. National Strategies for Financial Education

Country	National Strategy Link	Year of adoption/ revision
Austria	http://www.oecd.org/daf/fin/financial-education/austria-financial-literacy-strategy.htm	2021
Belgium	www.wikifin.be/fr	2013
Bulgaria	www.minfin.bg/upload/46985/National+Strategy.pdf	2020
Croatia	https://narodne-novine.nn.hr/clanci/sluzbeni/2021_06_68_1316.html	2021
Finland	https://helda.helsinki.fi/bof/bitstream/handle/123456789/17858/Talousosaamisenstrategia-EN.pdf	2021
France	https://www.economie.gouv.fr/files/files/PDF/rapport_strategie-nationale-d-education-financiere_2015.pdf	2017
Italy	https://www.mesquestionsdargent.fr/	2017
Italy	www.quellocheconta.gov.it/it/chi-siamo/strategia-nazionale/	2017
Latvia	http://www.fktk.lv/wp-content/uploads/2021/05/ENG_FPS.pdf	2021*
Lithuania	http://www.lb.lt/en/plan-for-the-financial-education-of-the-public	2017
Luxemburg	www.cssf.lu/en/financial-education	2017
Netherlands	http://www.wijzeringeldzaken.nl/bibliotheek-/media/Engels/english-direction-moneywise-2019.pdf	2019**
Portugal	www.todoscontam.pt/pt-pt/orientacoes-estrategicas	2022**
Spain	http://www.cnmv.es/DocPortal/Publicaciones/PlanEducacion/PlanEducacion18_21en.pdf	2018

* Second strategy.

** Third strategy adopted.

Source: OECD (2022), *Financial Literacy in Poland: Relevance, evidence and provision*, <https://www.oecd.org/financial/education/Financial-Literacy-in-Poland-Relevance-evidence-and-provision.htm>.

24 OECD (2017), *G20/OECD INFE Report...*, p. 18.

25 D. Tuesta (2017), *Financial Education, Financial Inclusion and National Strategies*, MIFI and National Strategies Edufin Summit, 15–16 June 2017, México D.F.

The effectiveness of financial education for children and young people depends not only on the content and topics, but also on when it is offered and how it is designed. The international experience suggests that the following aspects are important:

1. Starting financial education early and designing it in a way that takes into account the age, cognitive, social and psychological development of the participants, namely children and young people;
2. Designing comprehensive rather than *ad hoc* programmes. They should be sufficiently long and follow a structural approach, rather than being short or one-off programmes;
3. Creating programmes that offer opportunities to learn by doing that are relevant to young people's lives, allow participants to experience the impact of their decisions, and take into account young people's biases, attitudes and habits, since as such they have greater chances to support positive financial behaviour.²⁶

Educational activities, both formal and non-formal, intended for children should not be conducted as academic lectures presenting the latest trends and achievements of economists. Financial educators should arouse students' interest by presenting content in an understandable way that is adapted to their age. They should foster children's desire for further learning and participation in more classes or courses. All activities should be adapted to the learners' emotional level and stage of development (Table 2.7).

Table 2.7. Developing financial competence in children and young people

Stage of life	Control function	Habits and financial rules	Financial knowledge and decision-making ability
Early childhood (3–5 years)	self-control	standards and core values	numeracy
Older children (6–12 years)	fluid memory	rules of money management	ability to settle transactions
Teenagers and adolescents (13–21 years)	permanent memory	standards of financial health	ability to calculate project budget

Source: J.K. Solarz *et al.*, *op. cit.*, p. 142.

B. Frączek points out that financial education is viewed as a process consisting of integral and coherent stages, and the following elements are identified:

- studies that make it possible to determine the level of financial literacy of society (given group, population);
- identification of the biggest and most important shortcomings and determination of the most vulnerable social groups;

²⁶ OECD (2019), *Policy Handbook on Financial Education for Young People in the Commonwealth of Independent States*, p. 9.

- development of appropriate programmes and initiatives addressing the gaps identified earlier and intended for the target audience;
- carrying out the initiatives prepared and implementing the programmes;
- evaluation of the actions taken;
- review of the existing programmes and initiatives on the basis of the actions carried out, including repeated surveys of public literacy levels.²⁷

Table 2.8. Who provides financial education services at school (%)

	Country	Percentage of students who attend schools where financial education is provided by				
		Teachers	Private sector	Public sector	NGO's	Teachers, private and public sector, NGO's
OECD	Australia	95.3	26.3	6.7	12.5	30.5
	Belgium	97.6	27.4	7.1	18.0	34.8
	Czech Republic	98.8	19.8	4.6	7.9	23.0
	Estonia	87.5	10.0	7.0	16.2	23.6
	France	74.4	1.4	1.4	1.4	2.0
	Spain	73.8	–	–	–	–
	Israel	64.9	7.2	2.0	7.5	10.1
	New Zealand	98.1	38.4	22.6	33.5	52.3
	Poland	84.2	11.4	7.5	3.1	15.0
	Slovakia	98.0	23.6	4.8	18.8	30.9
	United States	94.2	43.2	23.9	25.4	42.7
	Italy	65.2		–		–
	OECD – average 13	84.7	19.9	8.5	13.9	25.5
Partners	Croatia	68.1	3.7	4.1	4.0	7.7
	Latvia	98.9	34.3	13.5	30.4	48.9
	Colombia	83.7	9.6	11.9	3.9	19.4
	Russia	87.8	6.4	3.3	3.7	11.7
	Shanghai – China	88.7	9.8	6.3	6.4	15.0

Source: OECD (2014), *PISA 2012 Results: Students and Money: Financial Literacy Skills for the 21st Century* (Vol. VI), PISA, OECD Publishing. <http://dx.doi.org/10.1787/9789264208094-en>, p. 150.

In her opinion, all the activities and their elements should be correlated with one another and with other relevant initiatives and they should be embedded in the national strategy or policy for financial education, thus forming a complementary whole. Teachers play the biggest part in this process as they provide basic financial education in most countries (Table 2.8). In some countries, the private sector and NGO's involved in education in the broad sense are an important link.

²⁷ B. Frączek (2014), "Innowacje w edukacji finansowej społeczeństwa", *Studia Ekonomiczne*, No. 186 (*Innowacje a wzrost gospodarczy*, part 2), p. 251.

2.2. Financial education in primary research

The level of financial education is quite a popular research topic, both in Europe and all around the world. Many scholars and institutions seek to explore this problem and to determine how adults and young people cope with financial issues. Research on financial education is often complemented by the analysis of financial awareness, knowledge and general financial literacy.

One of the largest studies of financial literacy worldwide was conducted by Standard & Poor's. It measured global financial literacy on four financial concepts: risk diversification, inflation, interest calculation and compounding. The survey, called the S&P Global FinLit Survey, covered over 150,000 adults (aged 15 and above) in more than 140 countries. According to this research, 33 percent of adults globally, with 35 percent of men and 30 percent of women, are financially literate.²⁸ The S&P report reveals low financial literacy worldwide. Concepts such as numeracy and inflation are best understood by respondents, while risk diversification is on the opposite pole; men perform better than women. Countries with the highest financial literacy rates are Australia, Canada, Denmark, Finland, Germany, Israel, the Netherlands, Norway, Sweden, and the United Kingdom, where about 65 percent or more of adults are financially literate. On the other end of the spectrum, South Asia covers countries with some of the lowest financial literacy scores, where only a quarter of adults – or fewer – are financially literate (Figure 2.1).

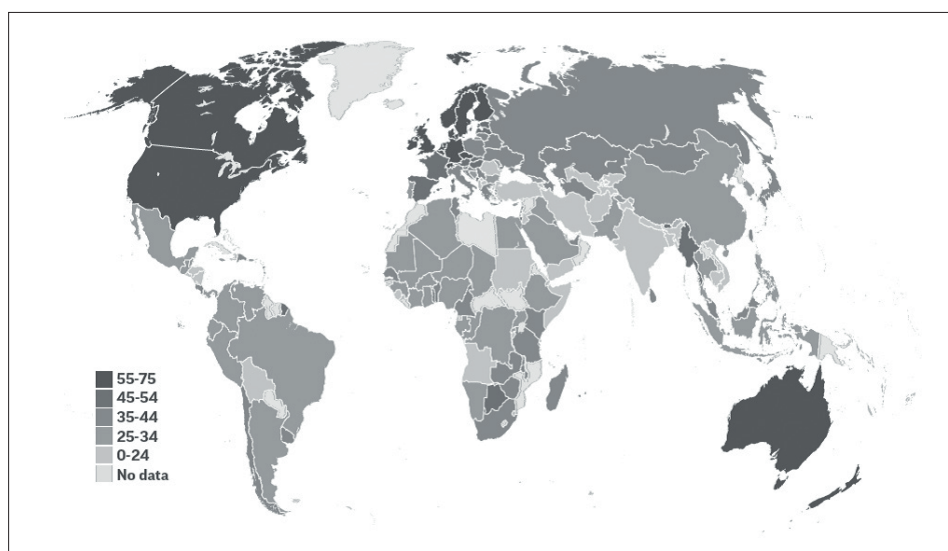


Figure 2.1. Global percentage of adults who are financially literate

Source: <https://gflec.org/initiatives/sp-global-finlit-survey/> (accessed: 10.02.2020).

28 Retrieved from: <https://gflec.org/initiatives/sp-global-finlit-survey/> (accessed: 10.02.2020).

Europe is also marked for varied scores in terms of financial literacy, with the northern part of the continent significantly outperforming the southern part. On average, 52 percent of adults in Europe are financially literate, and the understanding of financial concepts is highest in Denmark, Germany, the Netherlands, and Sweden. At least 65 percent of adults in these countries are financially literate. Rates are much lower in southern Europe. For example, in Greece and Spain, the literacy rates are at the level of 45 percent and 49 percent, respectively. Italy, Portugal, Bulgaria and Cyprus have some of the lowest literacy rates and less than 35 percent of adults are financially literate. Romania, with 22 percent financial literacy, has the lowest rate in the European Union.²⁹

One of the latest studies on this issue was conducted by the OECD, surveying over 125,000 people over 18 in 26 countries on three continents. The study was aimed at determining financial awareness covering three elements: knowledge, behaviour, attitude. Each of the elements was assessed with a maximum of 21 points (knowledge 0–7, behaviour 0–9, attitudes 0–5)³⁰. The average result of the entire sample was 12.7 (60.5%) and 13.0 (62%) for OECD countries. The study showed spatial differentiation of the study results. Adults in Hong Kong, China (14.8), Slovenia (14.7) and Austria (14.4) scored highest, smaller residents of countries such as Germany (13.9), Estonia and Indonesia (13.3), Poland and Portugal (13.1) and the Czech Republic and South Korea (13.0). The lowest scores were recorded in Italy (11.1), Romania (11.2) and Colombia (11.2). Differences also occurred between individual components of financial knowledge (knowledge, behaviour, attitude) in individual countries. The leaders in terms of financial knowledge are Hong Kong, China (6.2), behaviour – Slovenia and Indonesia (6.3), attitudes – Slovenia (3.6), Hungary and Indonesia (3.3). In addition, in some countries more emphasis should be placed on education, as other attributes are at satisfactory level. In addition, the presented results show that there is still a lot to be done in the field of broadly understood financial education.

Financial literacy varies considerably worldwide, but there is a general trend that can be noticed. The rates are better in the developed countries than in the developing countries, but distinctions are observed also among individual countries. Furthermore, in the developed countries there is a positive correlation between adult saving and borrowing behaviours and the country's financial literacy rate. For example, in Denmark and Sweden, the countries with the highest financial literacy rates, almost all adults have saved with a financial institution in the past 12 months. These relations also have a positive impact on the active relations with financial institutions.

29 L. Klapper, A. Lusardi, P. van Oudheusden (2015), *Financial Literacy Around the World: Insights from the Standard & Poor's Rating Services Global Financial Literacy Survey*, S&P Global FinLit Survey Gallup: Washington DC, p. 8.

30 OECD (2020), *OECD/INFE 2020 International Survey of Adult Financial Literacy*, pp. 14–15, www.oecd.org/financial/education/launchoftheoecdinfe2020globalfinancialliteracyreport.htm.

The ratio of loans to savings is positively correlated with the score in financial literacy test. This means that in the countries with greater financial literacy, the ratio is more balanced, indicating greater financial prudence and a lower propensity to over-indebtedness.³¹

The importance of financial education and its impact on financial literacy is evidenced by the research and programmes being undertaken around the world affecting:

- greater likelihood of planning for retirement and to accumulate money for it;
- portfolio diversification;
- greater awareness when making borrowing decisions;
- better allocation of (financial and non-financial) resources;
- greater awareness of financial planning and savings among women and low-income earners;
- increased awareness and behaviour in children and young people when planning savings and spending.³²

Financial education is also crucial for financial inclusion. A greater share of financial education in the lives of citizens has a positive impact on financial inclusion. A positive correlation was also observed between the implementation of a national strategy in a given country and the level of financial literacy. On every continent, except for Africa, countries with a national strategy have higher rates of financial literacy. To sum up, a national strategy for financial education and its implementation positively affect both financial literacy and financial inclusion, while financial literacy leads to reduced levels of financial exclusion.³³

Financial literacy is surveyed periodically by many researchers as well as by institutions from the public, private, financial and non-financial sectors. The research shows clearly that low financial literacy and its impact on financial awareness among society affect retirement planning and investment decision-making. The correlation between financial knowledge and awareness on the one hand and financial behaviour on the other remains a topical and central issue here. An interesting project in point was conducted by Annamaria Lusardi and Olivia S. Mitchell, who reviewed global research on the subject and presented their own findings on the use of financial literacy in households when making informed financial decisions.³⁴ They applied four principles which they found fundamental here. These were the following:

- simplicity – exploring basic financial concepts, similar to learning the ABC in terms of reading skills;

31 U. Batsaikhan, M. Demertzis (2018), “Financial Literacy and Inclusive Growth in the European Union”, *Policy Contribution*, No. 8, pp. 3–5; Retrieved from: https://www.bruegel.org/wp-content/uploads/2018/05/PC-08_2018.pdf (accessed: 17.06.2019).

32 *Ibidem*, pp. 7–8.

33 D. Tuesta, *op. cit.*

34 A. Lusardi, O.S. Mitchell (2011), *Financial Literacy around the World: An Overview*, NBER Working Paper Series, Working Paper 17107, National Bureau of Economic Research.

- relevance – the topics covered included basic concepts, related to and used in the daily financial decision-making of people in many regions of the world;
- brevity – keeping the number of research questions to a minimum in order not to discourage responses;
- ability to differentiate – questions were asked on different levels of financial literacy for later comparison of the entire test sample.

The questions focused on three main categories useful in financial decision-making: knowledge of compounding, inflation and risk diversification.

Table 2.9. Comparative statistics on responses to financial literacy questions around the world

Authors	Country	Date	Interest rate		Inflation		Risk diversification		Number of respondents
			Correct answer	Incorrect answer	Correct answer	Incorrect answer	Correct answer	Incorrect answer	
Lusardi, Mitchell (2011)	United States	2009	64.9%	13.5%	64.3%	14.2%	51.8%	33.7%	1,488
Allesie, Van Rooij, Lusardi (2011)	the Netherlands	2010	84.8%	8.9%	76.9%	13.5%	51.9%	33.2%	1,665
Bucher-Koenen	Germany	2009	82.4%	11.0%	78.4%	17.0%	61.8%	32.3%	1,059
Sekita	Japan	2010	70.5%	12.5%	58.8%	28.6%	39.5%	56.1%	5,268
Agnew, Bateman, Thorp	Australia	2012	83.1%	6.4%	69.3%	13.0%	54.7%	37.6%	1,024
Crossan, Feslier, Hurnard	New Zealand	2009	86.0%	4.0%	81.0%	5.0%	27.0%	2.0%	850
Brown, Graf	Switzerland	2011	79.3%	2.8%	78.4%	4.2%	73.5%	13.0%	1,500
Formero, Monticone	Italy	2007	40.0%	28.2%	59.3%	30.7%	52.2%	33.7%	3,992
Almenberg, Säve-Söderbergh	Sweden	2010	35.2%	15.6%	59.5%	16.5%	68.4%	18.4%	1,302
Arrondel, Debbich, Savignac	France	2011	48.0%	11.5%	61.2%	21.3%	66.8%	14.6%	3,616
Klapper, Panos	Russia	2009	36.3%	32.9%	50.8%	26.1%	12.8%	35.4%	1,366
Beckmann	Romania	2011	41.3%	34.4%	31.8%	40.4%	14.7%	63.5%	1,030

Source: A. Lusardi, O.S. Mitchell (2014), “The Economic Importance of Financial Literacy: Theory and Evidence”, *Journal of Economic Literature*, No. 52 (1), DOI: 10.1257/jel.52.1.5, p. 10.

A summary of the studies on financial awareness conducted worldwide is presented in Table 2.9. The vast majority of these studies were conducted after the 2008 financial crisis, thus they present in part the knowledge and skills of society before and during the crisis. Most respondents provided correct answers to the questions on interest rate and inflation. However, the questions on risk, risk diversification and protection posed a problem. These data show how much there is still to be done in the economic education around the world. Society needs to be provided with economic education, starting at an early age in order to prevent further unpleasant experiences which are caused by aggressive financial institutions and ill-advised decisions made by policy-makers. At the same time a comprehensive approach to the education process and the inclusion of each household group must be ensured. Education should not cover exclusively financial topics. It must also address the issues of modern economics and the economy as well as the associated processes.

The following conclusions emerge from the analysis of financial literacy:

1. Financial illiteracy is very common. It is present even in countries where financial markets are well developed (Germany, the Netherlands, Sweden, Italy, Japan, New Zealand). Low levels of financial literacy, as we know it from the United States are also observed elsewhere, rather than being specific to any given country or stage of economic development.
2. The level of financial literacy varies between countries, but there is a correlation between the level of numeracy and the ability to answer questions requiring calculations. In countries, where people score high on math and science tests, they also tend to score high on questions measuring numeracy. As examples, respondents in Sweden and the Netherlands do well on math tests and they also score high on numeracy.
3. People are more knowledgeable about inflation if their country has experienced it and *vice versa*. In a country like Japan that experienced deflation, many fewer people answer the inflation question correctly.
4. The principle identified for inflation applies to risk diversification. If a country has recently undergone pension reform or privatisation processes, its citizens are much better informed on that matter. By contrast, for example, Russians and people born in East Germany know less about risk diversification. It is notable, however, that even in countries with very well developed financial markets, many respondents state that they do not know about risk diversification.³⁵

International research shows that financial literacy varies between the groups studied. Age patterns are noticeable in that financial knowledge follows an inverted U-shaped pattern, being lowest for the young and the older groups, but it peaks in the middle of the life cycle.³⁶

35 A. Lusardi, O.S. Mitchell, "The Economic Importance of Financial Literacy...", pp. 9–10.

36 A. Lusardi, O.S. Mitchell, *Financial Literacy around the World...*, p. 10.

A similar survey on financial literacy and its consequences in Russia was conducted by Lora Klapper, Annamaria Lusardi and Georgios Panos, who asked 1,600 people four questions about interest rates, inflation and discount benefits.³⁷ The results show that 41.4 percent of respondents answered correctly the first question on compound interest; 23.3 percent gave correct answers to the question on calculating monthly payments and credit interest; 45.6 percent answered correctly the question on inflation and almost 70 percent answered correctly the question on shop discounts. A considerable number of respondents could not answer the questions asked, on average 27.4 percent, i.e. every fourth person surveyed. The results of this survey are similar to the studies carried out by other researchers.³⁸ Additionally, the survey proves that financial literacy influences positively extended use of formal sources of finance; however, it influences negatively the use of informal sources. Respondents with higher levels of financial literacy are more likely to have income they do not consume fully and less likely to be indebted. Financial literacy contributes to rational financial decision-making and better protection against unforeseen incidents, such as those caused by financial crises. Better financial literacy not only has a beneficial effect on households but it also affects the economy, contributing to macroeconomic stability.³⁹

37 The Questions asked in the survey:

1. Let's assume that you deposited 100,000 roubles in a bank account for 5 years at 10% interest rate. The interest will be earned at the end of each year and will be added to the principal amount. How much money will you have in your account in 5 years if you do not withdraw either the principal amount or the interest?
 - a) More than 150,000 roubles,
 - b) Exactly 150,000 roubles,
 - c) Less than 150,000 roubles,
 - d) I cannot estimate the amount even roughly.
2. Let's assume that you took a bank credit of 10,000 roubles to be paid back during a year in equal monthly payments. The credit charge is 600 roubles. Give a rough estimate of the annual interest rate on your credit. The interest rate is about:
 - a) 3%,
 - b) 6%,
 - c) 9%,
 - d) 12%,
 - e) I cannot estimate it even roughly.
3. Let's assume that in 2010 your income is twice the amount it is now and that consumer prices also grow twofold. Do you think that in 2010 you will be able to buy more, less, or the same amount of goods and services as today?
 - a) More than today,
 - b) Exactly the same,
 - c) Less than today,
 - d) I cannot estimate it even roughly.
4. Let's assume that you saw a TV set of the same model on sale in two different shops. The initial retail price of it was 10,000 roubles. One shop offered a discount of 1,500 roubles, while the other one offered a 10% discount. Which one is a better bargain – a discount of 1,500 roubles or 10%?
 - a) A discount of 1,500 roubles,
 - b) A 10% discount,
 - c) I cannot estimate it even roughly.

38 L. Klapper, A. Lusardi, G.A. Panos, *op. cit.*, p. 3910.

39 *Ibidem*, p. 3922.

The repeatedly identified low level of financial literacy in households around the world is a challenge for institutions providing education services, both in the domain of economy and finance. Being active in today's economies requires people to make risky and complex financial decisions, therefore people need tools enabling them to make such decisions. The benefits of higher financial literacy proves useful when decisions are made on saving, investing, debt management or retirement planning. This implies a cause-and-effect relationship between financial literacy, behaviour and decision-making.⁴⁰

2.3. Studies on financial knowledge and literacy in Poland

Studies on financial education, level of financial knowledge and literacy in Polish society have been conducted, among others, by Małgorzata Iwanicz-Drozdowska, Beata Świecka, Marta Musiał, Bożena Frączek, Jan K. Solarz and his associates, Dominika Maison. The assessment of financial knowledge can be:

- subjective – resulting from one's own subjective assessment of one's knowledge, not necessarily reflecting its actual level; the assessment may be variable depending on the point of reference, comparison with people from the closest environment, media;
- objective – resulting from the use of appropriate tools for examining the level of knowledge, e.g. tests, practical applications.⁴¹

D. Maison, also includes here relative assessment of one's knowledge, that is assessed in relation to others.⁴² The subjective assessment of Poles' financial knowledge reveals its poor level. Almost *every second* Pole has insufficient financial knowledge. 14 percent of the respondents surveyed on behalf of the Warsaw Banking Institute (Polish: *Warszawski Instytut Bankowości*) and the Stock Exchange Foundation (Polish: *Fundacja Giełdy Papierów Wartościowych*) said that their knowledge is very low, with 35 percent viewing it as rather low, 42 percent as average and 7 percent as high. Only 2 percent of the respondents rated it as very high.⁴³ Knowledge of cyber-security (65 percent), credit and loans (44 percent), savings and public finance (34 percent) was assessed the lowest. Rural residents rate their knowledge even lower, with 58 percent believing they have little knowledge of finance. Based on the test conducted, M. Musiał confirmed low financial knowledge. Respondents scored an average of 5.48 out of a possible 15 points. Only 30 percent of the respondents earned more than half the points available in the test, and only 2 percent scored more than

40 A. Lusardi, O.S. Mitchell, "The Economic Importance of Financial Literacy...", p. 34.

41 B. Świecka, "Generacja Y w świecie finansów...", p. 224.

42 D. Maison, *op. cit.*, p. 187.

43 *Poziom wiedzy finansowej Polaków 2019*, March 2019, Indicator commissioned by the Warsaw Institute of Banking and the WSE Foundation.

90 percent of points. One in ten respondents (11 percent) did not give a single correct answer.⁴⁴

The study presented here provides interesting insights on the sources of knowledge and information on personal finances. Media and the Internet, as well as banks and other financial institutions, were the respondents' primary source of information on economics and finance. It is worrisome that only one in three respondents learned about finance at school or at university.⁴⁵

In their comprehensive study on financial education, J.K. Solarz and his team presented the financial education of seniors. The survey covered 181 seniors aged 60 or older (115 men and 65 women), living in the central province of Mazowieckie. Despite the fact that the overall survey did not focus entirely on financial issues, it allowed for drawing conclusions on this topic as well. Seniors make up a special group because of their life experience influencing their attitudes and behaviours when dealing with economics and finances and managing the household budget. Nevertheless, seniors need to be educated not only about finances, but also about safeguarding their banking operations and cashless transactions, including payment transactions. Financial education of older people is important as it builds their financial security and helps them to manage their personal finances. It also raises their financial awareness and determines their access to secure products and services in the investment market. Financial awareness and education of the elderly have a significant impact on their financial literacy and competence.⁴⁶

The attitudes and behaviours of seniors are the subject of a survey carried out periodically by the Citi Handlowy Foundation (Polish: *Fundacja Citi Handlowy*) and the Think! Foundation, examining the attitude of Poles towards finance. The latest survey, conducted in November 2019, focused on Christmas spending. The research identified two groups of people with different approaches to laying out money from their household budgets (see Tab. 2.10).

Key topics for improvement:

Cybersecurity – 51%,
Investing – 35%,
Public Finance – 25%,
Credit and loans – 17%,
Tax system – 17%,
Entrepreneurship, pension system, cashless payments – 14%,
Saving – 13%.

Source: The level of Poles' financial knowledge 2022

Where do we get information:

- the Internet – 74 percent (55% blogs and web portals, 19% podcasts and videos),
- media – 44 percent,
- banks and other financial institutions – 41 percent,
- school and university – 24 percent,
- public institutions – 24 percent,
- other persons – 22 percent.

Source: The level of Poles' financial knowledge 2022

44 M. Musiał, *op. cit.*, p. 147.

45 *Poziom wiedzy finansowej Polaków 2019...*

46 J.K. Solarz *et al.*, *op. cit.*, pp. 40–41.

Table 2.10. Respondent profiles and how they spend money

SHREWD SPENDER – controls their expenses	RECKLESS SPENDER – does not control his/her expenses
aged 60 or older	15–24 years old
plans bigger expenses a year in advance saves regularly	does not plan bigger expenses exhausts all their money
43% keep cash at home and control every item of expense	35% say that there is no point in saving and they do not control any expenses they make

Source: *Postawy Polaków wobec finansów*, the Citi Handlowy Foundation and the Think! Foundation study, November 2019.

The results confirm that older people approach personal financial matters in the broad sense differently. Their behaviour is certainly influenced by their low income (disability pension, retirement pension) that require efficient money management and a rational approach to every expenditure they make. Their financial market behaviour is also affected by the above-mentioned life experience and the fact that they previously functioned under different conditions.

The personal financial management in Polish households was also examined by M. Musiał. One aspect the researcher focused on was the relationship between financial literacy and the effectiveness of the management of personal finances. The study was conducted in two stages. First, surveys were carried out in three Polish

Preferred forms of imparting financial knowledge:

in-person meetings (particularly classes and lectures) – 44 percent, educational movies and other video – 41 percent, series of articles and infographics in the press and Internet – 40 percent, mobile applications – 35 percent, e-learning platforms – 24 percent, financial blogs and social media – 24 percent, radio programmes – 18 percent, webinars, on-line lessons and lectures – 16 percent.
Source: The level of Poles' financial knowledge 2022

provinces (Zachodniopomorskie, Dolnośląskie and Podkarpackie), where the inhabitants have different levels of income and expenditure. 1152 people were interviewed on-line (CAWI) and face-to-face (PAPI). Then, surveys were carried out in Warsaw, Cracow, Łódź, Wrocław, Poznań and Szczecin. During this stage, 1086 persons were interviewed. A positive relationship was found between financial knowledge and the effectiveness of the personal financial management, thus confirming the research hypothesis. Namely, the effectiveness of personal financial management increases when financial knowledge rises.⁴⁷

Such conclusion is also confirmed by the findings of D. Maisson, who showed that the strongest relationship is between the banking penetration of the society and its objective knowledge, while a less significant relationship exists between relative and subjective knowledge. Furthermore, the analysis of the use of specific banking products by people with different levels of economic knowledge reveals the great importance of this knowledge for the utilisation of various financial services. Persons having the

⁴⁷ M. Musiał, *op. cit.*, pp. 92–94, 146.

greatest economic knowledge are more likely to use diverse financial services.⁴⁸ This research shows the impact of economic (financial) knowledge on the level of bank-penetration of society and better personal functioning in the financial world.

B. Świecka and her team conducted an international survey under which 2070 students from Polish secondary, technical and vocational schools (24 schools in 20 cities from 11 provinces) and 327 students from secondary and grammar schools in Berlin and its environs were interviewed. The vast majority of the respondents were born in 2001 and 2002.⁴⁹ The researchers examined the extent of financial knowledge, skills, attitudes and behaviours, and the need for financial information. The Polish students are characterised by an average level of financial knowledge, but as many as three quarters of them know that it will be useful in their life. Their German peers have a very high self-assessment of their own financial knowledge; however, their practical information is low.⁵⁰ A comparison of the two groups and their financial skills is presented in Table 2.11.

Table 2.11. Financial skills self-assessment (%)

Do you know:	Poland		Germany	
	YES	NO	YES	NO
How to open a bank account on-line?	61.0	38.0	31.2	67.6
How to pay with your phone?	66.0	33.2	66.4	32.7
How to pay with Visa/Master Card?	85.5	13.7	51.4	47.7
How to withdraw money from automatic cash dispenser?	87.4	11.5	89.6	9.5

Source: B. Świecka *et al.* (2019), *Financial Literacy and Financial Education. Theory and Survey*, De Gruyter Oldenbourg: Berlin, DOI:10.1515/9783110636956-201, pp. 73, 83.

When comparing the financial knowledge of young people in Poland and Germany, one can conclude that Polish students have greater knowledge than their German peers (Table 2.12). The two groups surveyed have also different understandings of certain financial terms. This may be due to the differences in the educational systems and teaching methods used. Additionally, the fact that parents provide their children with a certain amount of financial knowledge also comes into play here.

⁴⁸ D. Maison, *op. cit.*, p. 199.

⁴⁹ In Poland 94.06 percent of the respondents were born in 2001, while in Germany 65.7 percent were born in 2002 and 28.7 percent in 2001.

⁵⁰ B. Świecka *et al.*, *op. cit.*, pp. 65–69.

Table 2.12. Financial knowledge – comparative analysis

Question	Poland			Germany		
	True	False	Don't know	True	False	Don't know
Balance sheet is a statement of costs and revenues for a given period.	73.6	5.5	20.3	48	2.4	47.4
Overdraft is the amount that an account holder can debit at a given bank.	59.3	10.9	29.5	31.8	15	51.4
Only adults can use on-line banking.	20.1	57.1	22.5	38.5	40.1	19.3
Visa/Master Card are only for withdrawing cash from an ATM.	8.9	75.4	15.3	16.2	53.2	29.4
Budget is a financial plan containing a statement of income and expenditure.	59.8	25.7	14.1	21.1	58.1	18.7
Debit card works just like a credit card.	10.3	64	24.9	5.8	24.2	68.2

Source: B. Świecka *et al.*, *op. cit.*, p. 90.

Studies in the said field are also carried out by various financial and non-financial institutions. An example here is the periodical survey conducted on behalf of the Kronenberg Foundation of the Citi Handlowy Bank (Polish: *Fundacja Kronenberga przy Citi Handlowym*) and Think! Foundation for the Development of a Knowledge Society which tries to find out Poles' attitudes towards finance – managing household budgets, saving and investing. The survey covers a representative group of people aged over 16 years. The periodical analysis of the attitudes towards finance, the identification of behaviours, methods of dealing with major economic challenges and basic macroeconomic categories reveals the evolution of public attitudes towards the management of family budgets and saving and investments.

This is especially interesting in the context of the COVID-19 pandemic. In 2021, a smaller number of people declaring short-term spending planning was observed (maximum 1 month in advance). On the other hand, the group of people who do not plan and do not save for shopping has increased (in 2021 – 40 percent, an increase of 16 percentage points compared to previous years)⁵¹. The percentage of people planning their expenses in the long term has also decreased significantly to 40 percent (in 2019 – approx. 25%). It is significant that the number of people controlling their expenses continues to fall (2021 – 66%, 2019, 2018 – 76%, 2016 – 77%). This may be surprising in the face of COVID-19 pandemic, but it may also be a sign of the impact of low interest rates in Poland (until 2020).

An important element of any economy are savings that contribute to financial resilience and absorb financial shocks. The number of savers has remained at a similar

⁵¹ *Poles' attitudes towards finance*, Fundacja Rozwoju Społeczeństwa Wiedzy Think!, the Kronenberg Foundation of the Citi Handlowy Bank, February 2021.

level for several years (in 2018 – 70%, in 2019 – 67%, and at the beginning of 2021 – 64%), although with a downward trend. Between 2019 and 2021, the number of people who do not save for specific purposes has increased, but for a “rainy day” to secure the future. This may be a reaction to the pandemic crisis, uncertainty related to it on the one hand, lack of implementation of some plans (e.g. related to travel, entertainment) on the other. The youngest people are the least likely to save (15–24 years old – 45%), the tendency to postpone current consumption increase with age. The impact of education on the value of savings is also noticeable (80% of people with higher education save), but the place of residence has no influence.

Since 2018 the Warsaw Institute of Banking Foundation and the GPW Foundation have been conducting cyclical surveys “The level of economic knowledge of Poles” making a valuable contribution to economic education in Poland. The latest, conducted in February 2022 on a representative sample of adults, indicate the average level of the respondents’ own economic knowledge (2.91 on a 5-point scale). 37 percent of those who assess their knowledge as very or rather small are concerned, only every third respondent believes that their knowledge of economics is large or very large. There is a relationship between the education and age of the respondents but special conditions have no influence. The youngest (2.00) and poorly educated people (2.46) assess their knowledge lower, while people with higher education assess their knowledge higher (3.69). The study also showed the impact of the COVID-19 pandemic on long-term savings and investment decisions (58%).⁵²

Research on the knowledge of basic financial issues and attitudes among young people was also conducted by the author. The study covered primary and secondary school students in three voivodships: Lubuskie, Wielkopolskie and Zachodniopomorskie. A survey consisting of questions about the practical attitudes of young people to finance and their knowledge of inflation, investments and the ability to perform simple mathematical calculations was carried out in years 2019–2022 and covered 542 respondents, including 258 women and 284 men. 131 respondents attended the primary school, 129 the high school and 282 the technical school. Over 97 percent of respondents lived in city with up to 50,000 inhabitants.

Almost half of the respondents regularly received pocket money (47.6%), while every fourth respondent indicated that “yes, but not every month” and “no” (Chart 2.1). The differences between the response rates to this question were statistically significant ($\chi^2(2) = 49.75, p < 0.001$).

52 *Poziom wiedzy finansowej Polaków*, 5th Edition, Fundacja Warszawski Instytut Bankowości, Fundacja GPW, March 2022.

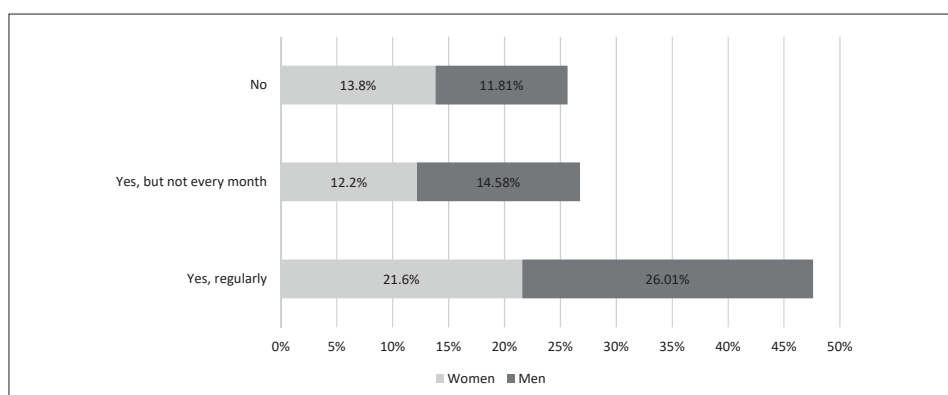


Chart 2.1. Do you receive pocket money?

Source: Own elaboration.

Pocket money was the most often received by the youngest people (<15 years old), and the least often by the oldest respondents (>17 years old). The existing statistical trend indicated that more people from technical secondary school did not receive pocket money, while people attending primary school more often than it would result from random distribution indicated that they regularly received pocket money ($\chi^2(4) = 8.84, p = 0.06$). When asked what the respondents would do with the received pocket money, the dominant answer was “I spend some of the money and save some” – 63.8%, 15.5% of the respondents put everything aside without a clearly defined purpose for what they will spend the saved money, more than every tenth respondent saves for a predetermined purpose (11.8%), while 8.9% spend the received money immediately ($\chi^2(3) = 440.81, p < 0.001$). Boys admitted to saving more often, while girls more often spent the received money (Chart 2.2). Among the savers, the youngest people dominated, while among the spenders (“I spend immediately...” and “I spend part of ...”) the oldest. More than half of the respondents have a bank account – 53.3% ($\chi^2(1) = 8.53, p < 0.01$), this group is dominated by people aged 17 and older (Chart 2.3). Despite this, almost 60% keep their savings at home, every third respondent does it in the bank, and less than 10% have both at home and in the bank ($\chi^2(2) = 193.72, p < 0.001$). Also in this case, more elderly respondents (17+) cooperated with the bank, the youngest (<15) more often kept their savings at home (Chart 2.4). It is interesting that high school students keep money in the bank more often, while youth from technical and primary school at home.

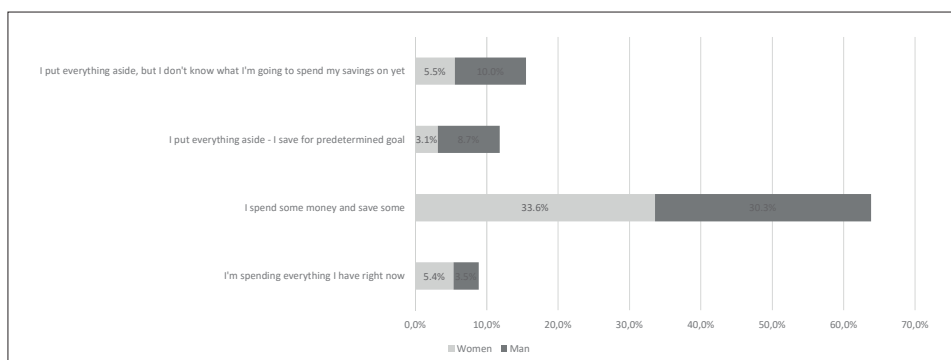


Chart 2.2. If you have your money, what do you do with it?

Source: Own elaboration.

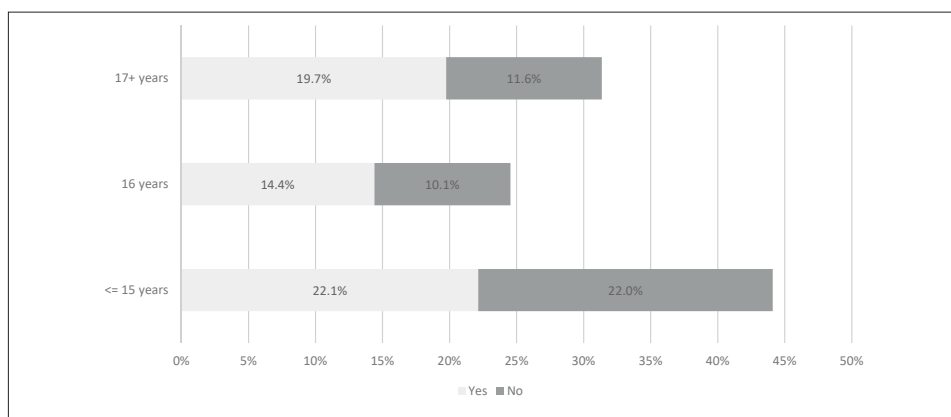


Chart 2.3. Do I have a bank account?

Source: Own elaboration.

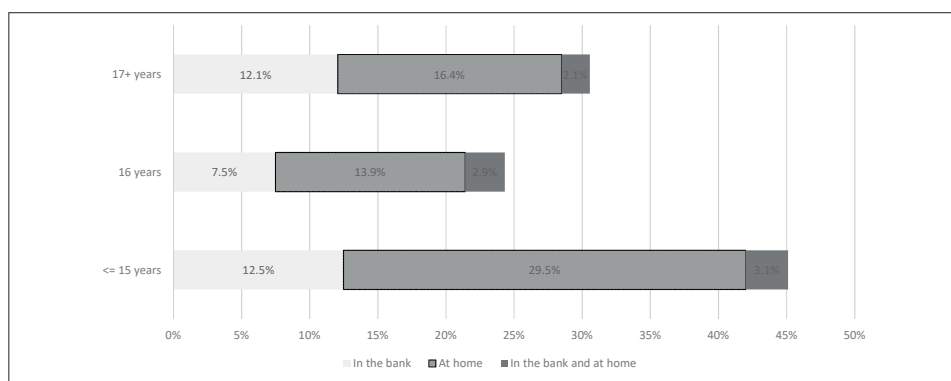


Chart 2.4. Where I keep my savings?

Source: Own elaboration.

During the survey, young people's mathematical and economic knowledge was also checked. To the question concerning simple percentage estimation, just over half gave the correct answer (51.3%), almost every third could not estimate and every fifth (20.4%) gave an incorrect answer ($\chi^2(3) = 247.93, p < 0.001$). "I don't know" was more often answered by students from primary school and the youngest people and the correct answer was more often indicated by students of technical secondary school. Also, knowledge about inflation was not satisfactory, despite the fact that less than half of the respondents (47.7%) gave the correct answer, every third indicated that they "do not know", and 22.6% answered incorrectly ($\chi^2(3) = 200.93, p < 0.001$). Another researched issue was knowledge about risk and its diversification. Less than 40% of the respondents did not know how to answer, every third said that the statement was "true", the same number indicated that it was "false" ($\chi^2(3) = 192.09, p < 0.001$). Wrong answer were more often given by younger people, older respondents had better knowledge, indicating the correct answer. On the other hand, the question relating to the ability to count quickly was answered correctly by the majority of respondents (68.6%), almost every fifth could not estimate, and 12.5% gave an incorrect answer ($\chi^2(3) = 307.14, p < 0.001$). Also in this case, technical secondary school students gave the correct answer more often. The above mentioned studies indicate differences in the knowledge and attitudes of young people. While the level of knowledge depends on age, attitudes and skills do not. The place of residence does not have a statistically significant influence on the answers provided, but the type of school does.

Polish studies on the economic (financial) knowledge of the Poles presented here show the significance of this problem and the importance of comprehensive financial education. They all point to low economic and financial awareness of society, reflected in their financial decision-making. Additionally, the studies make us realise the importance, inevitability and urgency of a proper process of economic education of society that would comprehensively cover groups at every stage of life. Providing education to children will prevent them from spending money irrationally in the future, make them realise that they need to save money first in order to boost future consumption and to accumulate funds for their future retirement pension. It will also enable adults to make rational decisions on taking out credit and investing, including in the retirement context. It will also improve seniors' self-confidence when operating in an environment that becomes confusing to them due to the ubiquitous virtualisation of life, and thus exposing them to the threats caused by cyber criminals.

2.4. Economic education programmes in Poland

It has been repeatedly said and proven that economic (financial) education plays an important part in moulding social and economic well-being. Its lack negatively affects not only the lives of people and decisions made in households, but also the economy, both nationally and globally.⁵³ An adequate level of economic knowledge is essential for proper functioning in society. People capable of adapting quickly to changes and applying their knowledge, including economic knowledge, will be a strength of any economy, especially nowadays when change is a rule.

Studies demonstrate the need for teaching all the topics related to economics and finance and disseminating this knowledge not only among children and young people, but also among adults who are starting or have started their professional careers, as well as among adults who leave or have left the labour market. It appears that financial subjects are introduced too late in the domain of formal education in Poland and they are taught only for a short period of time. Additional problems arise due to the use of a theoretical approach to the topics taught and due to the missing link between financial education and mathematical knowledge. As a result, students leaving school have low financial knowledge and skills.⁵⁴ The gap in education thus created is filled by various types of institutions, mainly financial ones, but also by foundations and associations, implementing broad educational programmes. They make use of modern technologies and contemporary knowledge, but these activities are generally incidental. They cover only certain elements and are not comprehensive. They reach just a selected group of recipients and are not generally accessible as they are the result of initiatives undertaken by individuals or institutions that operate in a specific area. This diminishes the extent of their impact. Above all, these activities, particularly at the national level, lack coordination, which impedes the creation of appropriate framework, scope and forms of outreach to the individual groups of recipients.

Many educational initiatives are carried out incidentally, often as a result of sudden actions undertaken by institutions that, at the given moment, find them beneficial to their policy or compliant with the CSR strategy.⁵⁵ Many initiatives are financed from EU funds, which limits their sustainability and scope. It would also be advantageous if children living in small towns and villages were covered by these initiatives, since the said programmes usually reach only children in large cities, where access

53 B. Frączek (2013), "National Strategies for Financial Education – the Concept and First Experiences in the World", *Annales Universitatis Mariae Curie-Skłodowska Lublin – Polonia*, Vol. 44, No. 4, section H, p. 26.

54 M. Jurek, P. Marszałek, A. Warchlewska (2019), *Mapa edukacji finansowej*, 6th Edition, Part 2, Chapter 6: *Ocena działań z zakresu edukacji ekonomicznej i finansowej w Polsce*, Poznań, p. 276.

55 OECD (2022), *Financial Literacy in Poland: Relevance, evidence and provision*, <https://www.oecd.org/financial/education/Financial-Literacy-in-Poland-Relevance-evidence-and-provision.htm>.

to many projects is easier and more common. Moreover, these activities are not continued or coordinated nationally, hence they repeat themselves. In general, projects and programmes, especially those grant funded, do not have any follow-ups and they do not aim at consolidating the acquired knowledge or skills after their completion.⁵⁶ Projects are very often terminated when they start to be expedient. Instead, another project is implemented as this is consistent with the schedule of the competitions for this type of activity. Lack of continuity and systematic approach are one of the biggest problems of economic education in Poland. The use of modern forms of approaching learners and teaching, such as educational platforms, e-learning, webinars, instructional videos and other interactive forms of teaching and getting to know about practical aspects of finance, can increase the impact of the educational programmes in point. Sylwia Wojciechowska-Filipek showed how information and communication technologies (ICT) can be used in financial education.⁵⁷

Financial education is to be viewed as a process consisting of integral parts that should be consistent with one another. According to B. Frączek, these are:

- (diagnostic) studies determining the financial literacy of the population (society) under study;
- listing the biggest and most important shortcomings and defining the most vulnerable social groups;
- preparing appropriate programmes and initiatives with relevant educational content, taking into account the verified deficiencies and addressing the so-called target groups;
- carrying out the initiatives prepared, implementing the programmes prepared;
- evaluating the actions taken;
- reviewing the existing programmes and other initiatives by evaluating actions carried out, including repeatable surveys of public literacy.⁵⁸

Numerous projects and programmes are implemented to increase the knowledge and financial awareness of Poles due to their unsatisfactory economic knowledge. The Financial Education Map, ordered by the Polish Bank Association (Polish: *Związek Banków Polskich*) and the Polish Insurance Association (Polish: *Polska Izba Ubezpieczeń*), analyses and evaluates periodically educational initiatives carried out in Poland. The latest edition (the sixth) in Poland provides for the following scheme of the initiatives in question:

- national educational programmes for primary school students – 16 programmes;
- national competitions for primary school students – 12 competitions;
- national educational programmes for secondary school students – 15 programmes;

⁵⁶ *Ibidem*, s. 277.

⁵⁷ See J.K. Solarz *et al.*, *op. cit.*, p. 91–115.

⁵⁸ B. Frączek, “Innowacje w edukacji finansowej społeczeństwa...”, p. 251.

- national competitions for secondary school students – 12 competitions;
- publications and educational portals for primary school students – 9;
- publications and educational portals for secondary school students – 15;
- national programmes for primary school teachers – 5 programmes;
- national programmes for secondary school teachers – 13 programmes.⁵⁹

As mentioned earlier, financial education in Poland is provided by many organisations and institutions. The financial sector is active here as well since it appreciates educated customers. For example, the National Bank of Poland (Polish: *Narodowy Bank Polski*) has introduced its own educational programmes and initiatives. The most important ones include:

- NBPportal.pl – mainly multimedia and interactive content that is intended for children and young people, students, teachers and adults to enable them to deepen their economic competence;
- The Sławomir S. Skrzypek Money Center of the National Bank of Poland (Polish: *Centrum Pieniądza NBP im. Sławomira S. Skrzyppka*) – an interactive educational and exhibition facility, encompassing thematic rooms with multimedia exhibitions, presenting the history of money and banking, the role of central banks, explaining economic processes taking place in the economy and their importance, providing insights into the principles of investment.⁶⁰

The financial community, headed by the Polish Bank Association, implements projects for various groups. The Modern Business Management Programme (Polish: *Program Nowoczesne Zarządzanie Biznesem*), started in 2009 as an initiative of the Polish Bank Association and the Loan Information Bureau (Polish: *Biuro Informacji Kredytowej*), supported by the Ministry of Science and Higher Education, the National Clearing House (Polish: *Krajowa Izba Rozliczeniowa*), the Social Insurance Institution (Polish: *Zakład Ubezpieczeń Społecznych*), the Economic Information Bureau (Polish: *Biuro Informacji Gospodarczej*), cooperative banks which are members of Polish Cooperative Bank (Polish: *Bank Polskiej Spółdzielczości BPS*) and Cooperative Banking Group (Polish: *Spółdzielcza Grupa Banków SGBa*), and other banking institutions – is an example of such a comprehensive approach to education.⁶¹ The programme aims at improving knowledge on building financial credibility, risk management in business and personal life, the financial market or entrepreneurship. It is run in cooperation with over 130 Polish higher education institutions and it offers practical lectures, seminars, meetings, debates, scientific and student conferences, cooperation with scholars, student self-governments and other student organisations. By the end of 2019, more than 265,000 students, both full-time and

59 M. Jurek, P. Marszałek, A. Warchlewska (2019), *Mapa edukacji finansowej*, 6th Edition, Part 2: *Skrócona informacja o programach opisanych w mapie*, Poznań.

60 Retrieved from: www.nbp.pl/home.aspx?f=/edukacja/edukacja.html (accessed: 29.02.2020).

61 Retrieved from: www.nzb.pl (accessed: 29.02.2020).

part-time, participated in various forms of the programme (2050 lectures, 500 educational zones). The beneficiaries of the Modern Business Management Programme (Polish: *Nowoczesne Zarządzanie Biznesem*, NZB) are also scientists (2100 persons), who, among others, take part in academic conferences.

The Warsaw Institute of Banking (Polish: *Warszawski Instytut Bankowy*, WIB) is actively engaged in economic education in Poland. It runs the BAKCYL project/ Bankers Supporting Youth Financial Education (Polish: *Bankowcy dla Edukacji Finansowej Młodzieży*) which is part of the financial sector's educational programme – Bankers Supporting Education (Polish: *Bankowcy dla Edukacji*). The WIB collaborates with companies and institutions operating in the banking sector in order to promote practical financial knowledge among the young generation. Practical activities such as classes conducted by volunteers from among the bank employees, meetings with bank presidents, competitions and other forms address primary and secondary schools. Student competitions employing modern technical solutions are part of the educational activities organised by the WIB (Table 2.13).⁶²

Table 2.13. Results of financial education activities carried out by the Warsaw Institute of Banking

Year	2016	2017	2018	2019	2020	2021	2022
Pupils, students, seniors	82 114	163 267	404 511	446 000	383 000	361 000	370 000
Volunteering bank employees	383	650	1 061	1 250	735	645	550
Teachers	462	1 801	4 622	5 500	5 230	5 635	5 800
Local governments	8	282	403	420	380	345	320
Schools and universities	441	3 470	5 330	6 620	6 940	7 150	7 250
Banks and companies	31	108	172	190	175	154	145
Classes and lectures	1 036	4 957	17 741	21 170	21 900	22 500	23 000

Source: The Warsaw Institute of Banking.

WIB's educational activities target several segments of beneficiaries, including primary and secondary school students, university students and senior citizens. Programmes that influence economic education indirectly are also intended for persons working in the financial sector, as these persons affect the progress of education in banks and other financial institutions.

The programmes referred to above are only a few examples of all the programmes implemented in Poland (a comprehensive list can be found in the Map of Financial

⁶² For more information on WIB educational activities, refer to: <http://bakcyl.wib.org.pl>.

Education), but they do show how seriously the problem is viewed by the financial sector that cares for financially literate and savvy customers. The important thing is that all the initiatives, not only those implemented by the financial sector, should be coordinated by superior bodies, ministries and they should be included in the so-called Strategy for Economic (Financial) Education.

Based on the relevant literature and the experiences gathered by various entities, some recommendations for financial education and financial literacy can be made:

1. This process should be initiated as early as possible, at primary schools, starting at an early age, by correlating economic education with the curriculum implemented at each level of school education. The quality of education is also an important aspect here. Particular emphasis should be placed on teaching mathematics and numeracy. However, financial education should not be treated as an end in itself. It must be linked to the quality of teaching and the improvement of teachers' competences. For example, teachers in the Flemish-speaking part of Belgium, with superior and most accessible financial education, achieve the best results in providing financial education.
2. We should replace one-size-fits-all programmes with programmes tailored for individual groups. Particular emphasis of the financial education process needs to be placed on refugees, young people, low income earners and women. Its aim should be the development of skills required for negotiating contracts, making calculations or understanding basic financial terms.
3. Financial education is a lifelong learning process. It is important to provide financial education to citizens before they engage in risky, expensive financial transactions. We need to focus on young people to prevent them from undertaking unfavourable operations, rather than helping them get out of financial troubles. The importance of accumulating funds for retirement needs to be imparted. Older people who may invest often their entire life savings in risky operations, securities, shortly before they retire constitute important beneficiaries of the educational services in the domain under discussion. Furthermore, financial education should also include various financial activities.
4. Appropriate tools for financial literacy assessment need to be provided. It is important to understand the relationship between financial literacy and saving, spending and consumption habits in different EU countries.
5. The private sector must be more involved in the education process to draw on its experience and good practices. However, its engagement must be monitored and supervised to avoid potential conflicts of interest.
6. More is not always better. Learners must not be overburdened and discouraged from education and making decisions. The ability to calculate and process information will be helpful in rational decision-making and understanding the rules.
7. In-depth research assisted by economists, sociologists, psychologists, taking account of behavioural aspects needs to be carried out in order to get

a comprehensive picture of the situation and in order to trigger particular behaviours and decisions.⁶³

The fact remains that financial education should not end at the school level. It needs to be continued throughout life, at university, at work and in old age. It should be comprehensive. All its elements need to complement one another and build the foundation for the beneficiaries to function safely in the economy and in the world of finance. Modern programmes should also take into account current trends and principles of social coexistence for children, young people and adults, with a particular emphasis placed on the security of cashless payments, protection of data and personal information. Numerous enterprises seeking for more data enter the virtual world dominated by social media whose services are not free of charge, as many young people think. Nowadays, the most valuable and most precious product is the data we provide for free, and which later on become a desirable object of transactions that others make. All educational activities should promote the active involvement of pupils and students in financial education, prepare them for entering the labour market and teach them the management of household budgets, especially in times when consumerism is a fact and many products and forms of financing are easy accessible. Such actions will be possible to reduce financial and social exclusion and to facilitate informed decision-making.

The whole educational process, both with regard to its design and institutionalisation, could be coordinated and organised under a national strategy for financial education, consisting of an adapted framework or programmes which recognise the importance and meaning of financial education, identify its leader and its importance, and establish a roadmap to achieve predetermined objectives within a set period of time according to the guidelines provided.⁶⁴

63 U. Batsaikhan, M. Demertzis, *op. cit.*, pp. 15–16.

64 OECD (2013), *Advancing National Strategies for Financial Education*, p. 19.

3. Analysis of the economic competence of the children attending the Children's University of Economics

3.1. Organisation of the didactic process at the Children's University of Economics

The didactic process is a set of complex, interrelated and repetitive activities, designed to enable people to obtain understanding of the surrounding natural and social reality.¹ The main actors in the didactic process are educators and teachers on the one hand and students acquiring knowledge and skills under this process on the other. Other participants are parents, interested in improving the competence of their children and government bodies, supervising the quality of activities carried out by teachers, and the society that expects continuous development of skills and knowledge, influencing the development of society as a whole. The outcomes of the process can be viewed from individual, family and societal perspectives. They affect the functioning of individuals and social groups and, consequently, social and economic development.

The didactic process carried out at the Children's University of Economics includes the following activities, participants and stakeholders:

- training programme in economics, finance, marketing and management;
- set of teaching methods and techniques adapted to the process;
- children and young people interested and motivated to take part in non-formal education activities (not included in compulsory education curricula);

¹ T. Wujek (1974), "Przedmiot i zadania pedagogiki", [in:] M. Godlewski, S. Krawcewicz, T. Wujek (eds.), *Pedagogika. Podręcznik akademicki*, PWN: Warszawa.

- parents and guardians interested in improving the knowledge and skills of their children and children in their care;
- volunteers supporting correct and effective implementation of the process;
- trainers and academics taking on the challenge of imparting knowledge and improving skills of children and young people in economics, finance, management and marketing;
- originators and sponsors (institutions financing the activities of the Children’s University of Economics, the University of Szczecin, providing funds and resources for the implementation of the initiative), ensuring organisational and financial conditions necessary for the execution of the process.

Defining its objectives is an important part of the didactic process. These are adapted to both the cognitive abilities and attitudes of the students. Cognitive objectives are referred to as the taxonomy of learning objectives and include the level of formation of students’ knowledge and skills (Table 3.1).

Table 3.1. Taxonomy of learning objectives

Taxonomy of learning objectives at the Children’s University of Economics	
Level	Category
I. Messages	1. Remembering messages
	2. Understanding messages presented in classes
II. Skills	3. Applying messages in typical everyday situations
	4. Applying messages in difficult everyday situations
	1. Remembering facts means the student’s readiness to recall terms, issues, phenomena and working principles after classes. It depends on how well these messages were understood.
	2. Understanding messages means that a child is able to pass on the messages acquired, summarise and compare terms.
	3. Applying facts in typical everyday situations means the ability to practically apply acquired messages in everyday situations.
	4. Applying messages in difficult everyday situations means the ability to solve problems using messages acquired in classes.

Source: K. Kruszewski (ed.) (1998), *Sztuka nauczania. Czynności nauczyciela*, Wydawnictwo Naukowe PWN: Warszawa, p. 13.

The objectives related to attitudes are called the taxonomy of educational objectives (Table 3.2). Educational and learning objectives are interdependent. They are interrelated and they both take part in the operationalisation for optimising the didactic outcomes of the classes.

Table 3.2. Taxonomy of educational objectives

Taxonomy of educational objectives at the Children's University of Economics	
Level	Category
I. Activities	1. Participating in activity
	2. Pursuing activity
II. Attitudes	3. Valuing activity
	4. Organisation of activities
1. Participating in activity means consciously receiving stimuli and executing the role resulting from the responsibility assigned. The child adapts to the situation e.g. by performing tasks in the workshop.	
2. Pursuing activity means that child autonomously initiates adequate activities under the circumstances, but these behaviours are not yet fixed, i.e. the child solves problematic situations in the workshop.	
3. Valuing activity means consistent activities in a particular area. The child is convinced that the activity is appropriate and worthwhile. The child is very active, she/he has formed views, e.g. she/he remains active in planning and organising her/his activities, based on the experience gained in the workshop she/he took part in.	
4. Organisation of activities, i.e. applying a harmonious set of principles and identifying with them fully. This means that the child understands the interdependence of the activities performed. She/he undertakes activities consciously, anticipating the expected outcome, e.g. the child communicates openly during school teamwork, which she/he has practised in the workshop, consolidated and adopted as the most effective way of communication.	

Source: K. Kruszewski (ed.), *Sztuka nauczania...*, p. 14.

Classes at the Children's University of Economics in Szczecin touch on economics, finance, management and marketing topics. They cover a wide range of problems related to market mechanisms, economics, banking, planning and organising activities, teamwork, project work and advertising. In each edition of the EUD classes, the topics are different but they focus on the issues described above. The basic terms taught in each discipline are presented in Table 3.3.

Classes are taught by academic lecturers and business practitioners who discuss with the children various aspects of economics, finance, management methods and their own business experiences. In 2015–2019, 30 teachers and practitioners were involved in this initiative. In this period 118 volunteers, mainly students, graduates and technical staff, supported the didactic process. Volunteers, as supportive observers, accompanied the children during group work. They maintained a safe learning environment, they kept the participants engaged and motivated, but they did not intervene in the decisions made in the teams and they did not solve the problems for the participants. Some student assistants were tasked with organisation and supervision duties, ensuring smooth and safe movement of children around the university, dividing participants into working groups and verifying attendance in classes.

Table 3.3. Terms taught in classes and tests at the Children's University of Economics in Szczecin

Disciplines and topics of the didactic process			
economics	finance	marketing	management
– economic market – globalisation – market liberalisation – business ethics – corporate social responsibility – economic growth – recycling – natural resources	– currency, banknote, coins – issuer – securities – stock exchange – dividend – central bank – bank account – gross domestic product – bank credit	– brand, brand elements – marketing – marketing mix, 4 Ps – marketing relations – advertising – customer, on-line marketing – product life cycle	– project – project team, leader, manager – project risks – planning actions – stakeholders – communication – verbal and nonverbal communication – management styles – strategy, mission – motivation

Source: Prepared by the authors.

Children attend afternoon sessions on average twice a month, for a total of two lessons (90 minutes). Classes are held by lecturers in the building of the University of Szczecin. There is a presentation of didactic content with subsequent practical workshops and discussions. Children work in groups. The lecturer acts as an observer, supporting and inspiring creative problem solving. The behavioural approach was abandoned in favour of the constructivist approach which provides for knowledge to be used in real life situations. This strengthens the effective application of knowledge in problem solving. Textbook knowledge is not required.

Each child has a student's registration book. Every participation in the meeting is confirmed by the lecturer in the registration book without being graded. Participation in the meetings is required for graduation. During the graduation ceremony, children are awarded diplomas by the Dean of the faculty of the University of Szczecin. Children who take the final test at the end of the semester and score the highest number of points receive prizes.

The final test at the end of semester includes questions on specific topics of economics, finance, management and marketing covered in the classes. Its result does not condition the award of the diploma from the Children's University of Economics. The project does not make use of the typical behavioural assessment. The test is a competition where children who achieve particularly high scores are rewarded. Hence, it can be assumed that it has a summative or final character, and it is designed to evaluate what the programme participants have learnt in the classes. It is individual and differential in nature, meaning that it allows for comparing individual performances with one other.

Knowledge is tested traditionally with a paper-and-pencil-test, containing 15 single-choice questions. The learner scores 2 points for each correct answer, –1 point for an incorrect answer and 0 points for no answer. The authors of this monograph had to standardise the test results anew, as in the past different rules for awarding points were in place due to electronic testing. For the purpose of this study, the following uniform scoring method was applied: 1 point for a correct answer and 0 points for each skipped or incorrectly answered question. The questions are prepared by the lecturers conducting the classes and they cover topics discussed during the course.

3.2. IPMA Polska Kids certification as an element of children's education on management

Growing interest in project management stems from the increasing number of projects executed and the so-called projectification, not only in the business but also in the social area. Successful project implementation is contingent on many factors, both internal and external, such as correctly defined and implemented processes, continuous improvement as well as people and their competences.

Project management competences can be divided into:

- technical competences, relating to methods and techniques of planning, implementing and concluding projects;
- behavioural competences, encompassing all the relations and personal relationships in project teams;
- contextual competence, concerning the project context, in particular the organisational strategy, the relationship between the project and the operational activities, the relationship between the project manager and the project management team with the line management and the business management, related to the environment and the external conditions of project implementation.²

In 2014, the University of Szczecin (Faculty of Economics, Finance and Management) became a partner in a consortium that is composed of IPMA Polska³ and more than 20 faculties of Polish universities implementing the student certification programme in project management called IPMA-Student (IS). The IS competence model is based on the IPMA international competence model for managers and project team members. Students of the faculty attend the accredited classes and – upon their completion – they may take part in the IPMA-Student Certification, i.e. they

2 *Polskie Wytyczne Kompetencji IPMA. Wersja 3.0*, SPMP 2009; Retrieved from: <https://docplayer.pl/1683073-Ncb-polskie-wytyczne-kompetencji-ipma.html> (accessed: 17.06.2019).

3 The International Project Management Association (IPMA) is an international, non-profit association of national project management associations in 70 countries worldwide (as of April 2020). The main objective of the association is to build a platform for the exchange of experience in project management and to create professional and ethical standards for project managers.

can have their project management knowledge evaluated by taking the certification exam. After having passed the test, they receive the IPMA Student Certificate.

The reason for introducing project management issues to the children's education programme was the fact that project management competences have become indispensable for the labour market and for the organisation of other social activities. Topics covered in the project management classes include: planning, organisation, time management, communication, leadership, conflict, ethics and teamwork. In addition, children participating in these classes were awarded the IPMA Polska-Kids or IPMA Poland-Junior certificate depending on their age (Figure 3.1). IPMA-Kids certification was initiated in 2016 and it continues to the present.

Children's classes in project management are conducted by a team of several people. These are: a lead trainer, usually a university lecturer, having experience in holding workshops in this field, and 4 or 5 student assistants who support the trainer in keeping the students engaged. Additionally, each team is assigned a volunteer tutor. A project management class for children consists of four parts (Figure 3.2):

- lecture and subsequent discussion;
- workshop combined with teamwork;
- trainer's evaluation of workshop outcomes;
- awarding certificates.

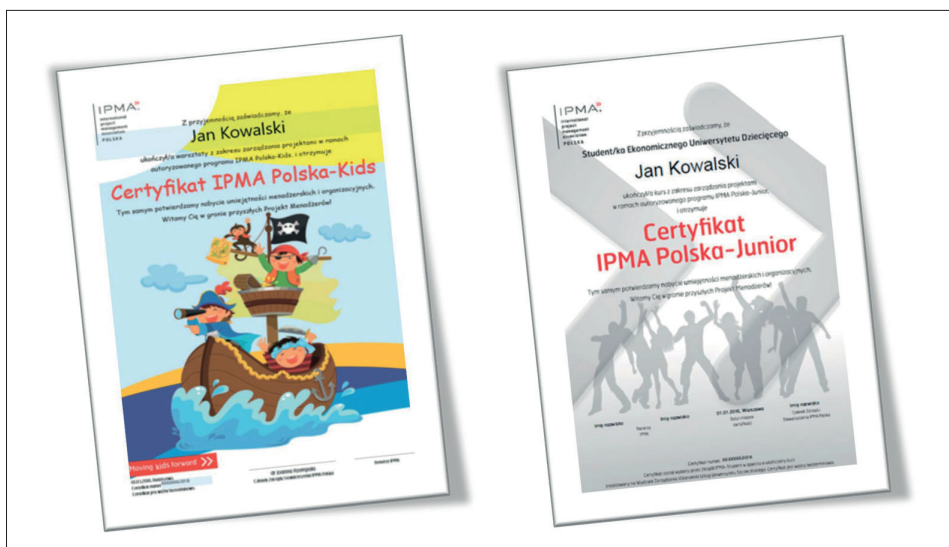


Figure 3.1. Diplomas for children participating in project management classes

Source: Prepared by the authors.

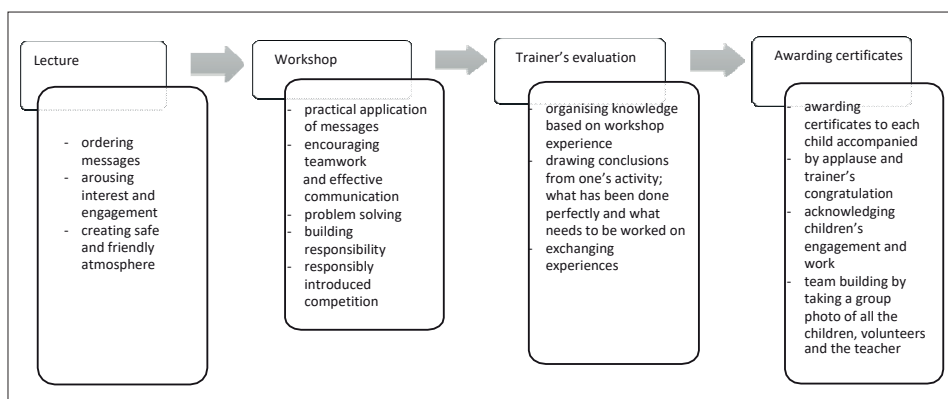


Figure 3.2. Stages of project management classes

Source: Prepared by the authors.

The total duration of a class is 90 minutes. Each part of the class lasts for a predefined period of time, regardless of the class or workshop topic (Chart 3.1).

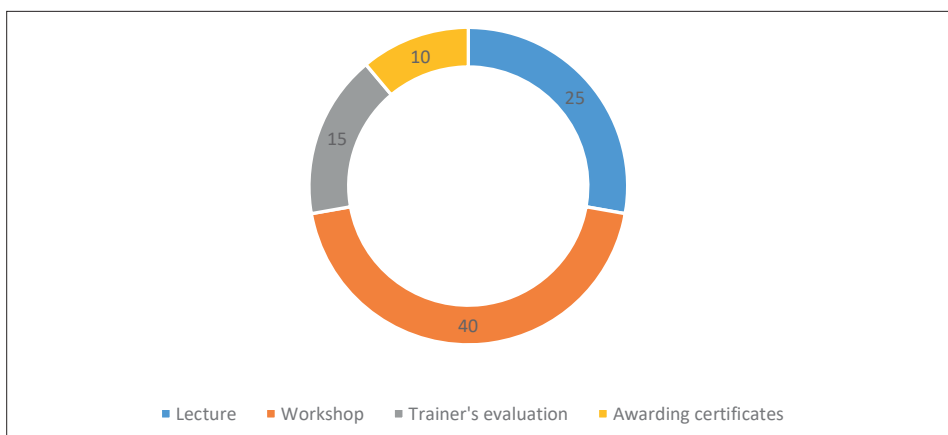


Chart 3.1. Duration of each part of project management classes

Source: Prepared by the authors.

First part – lecture including presentation of theoretical issues and discussion; duration: approximately 25 minutes. This time is devoted to organising knowledge and understanding of the following concepts: project, objective, triple constraint, planning or communication. Children take part in the discussion by telling how they understand the said concepts, presenting their experiences with school projects and teamwork. Observations made by the trainers show that the children are aware of different stages of project management. They can perfectly identify roles necessary for process implementation, the responsibilities of the project manager and project

team members. They actively exchange their observations and doubts on the topics presented. The aim of this part of the class is to organise the messages, to structure the relevant knowledge and to arouse curiosity and enthusiasm for further work. The tools used in this part include a computer presentation used for summarising the concepts discussed and a magnetic board on which ideas and experiences are written and subsequently organised and summarised.

Second part – workshop; duration: approximately 40 minutes. The children carry out the project according to the quality requirements, time and resources presented. They work in teams of eight. They define a goal, plan activities, appoint a project manager and assign other roles in the team. The team implementing the project most effectively wins. Competition between the teams triggers motivation for action. A well thought-out and planned workshop determines the need for action planning, team cooperation, active management of the environment (contacting other teams, the client and the project sponsor). Children deal with the problems arising out of communication, conflicting interests, conflicts, time planning and management of other resources. The aim of the workshop is to demonstrate in practice that awareness and focus on the goal, cooperation and communication are required for achieving success. The workshop usually combines conceptual and manual work. The project result has a tangible dimension that can be captured and compared with the results produced by other teams. Different stages of the workshop parts and the main activities carried out in the respective parts of the workshop are presented in Figure 3.3.

The next part is the evaluation conducted by the trainer and discussion on the project implemented; duration: approximately 15 minutes. The main emphasis here is placed on gathering experience in teamwork, ethics and behaviour towards competitors, by individual learners and by the whole team. Factors essential for the success of the winning team, as well as difficulties and limitations encountered during the work carried out, are identified. Children perfectly diagnose the team atmosphere and external factors affecting their work. They discuss behaviours and situations strengthening team unity. They point out the importance of planning and organising work as well as identifying risks.

Finally, participants are congratulated and awarded IPMA Polska-KIDS and/or JUNIOR certificates. This part lasts for approximately 10 minutes. Celebrating success and building self-esteem is the final part of the workshop. All participants receive an IPMA-Kids or IPMA-Junior certificate (depending on the age of team members), confirming the acquisition of the project management competences. Each child is awarded a certificate and the group celebration follows. The team of trainers makes sure that this special moment has the proper setting. The final element is a group photo that builds a sense of community of all the participants, both the children and the trainers as well as volunteers involved.

Project management classes aim to develop specific, mainly interpersonal competences as well as those related to planning and organising work. The intended outcome here is improvement of children's ability to successfully implement school projects during classroom activities and at home.

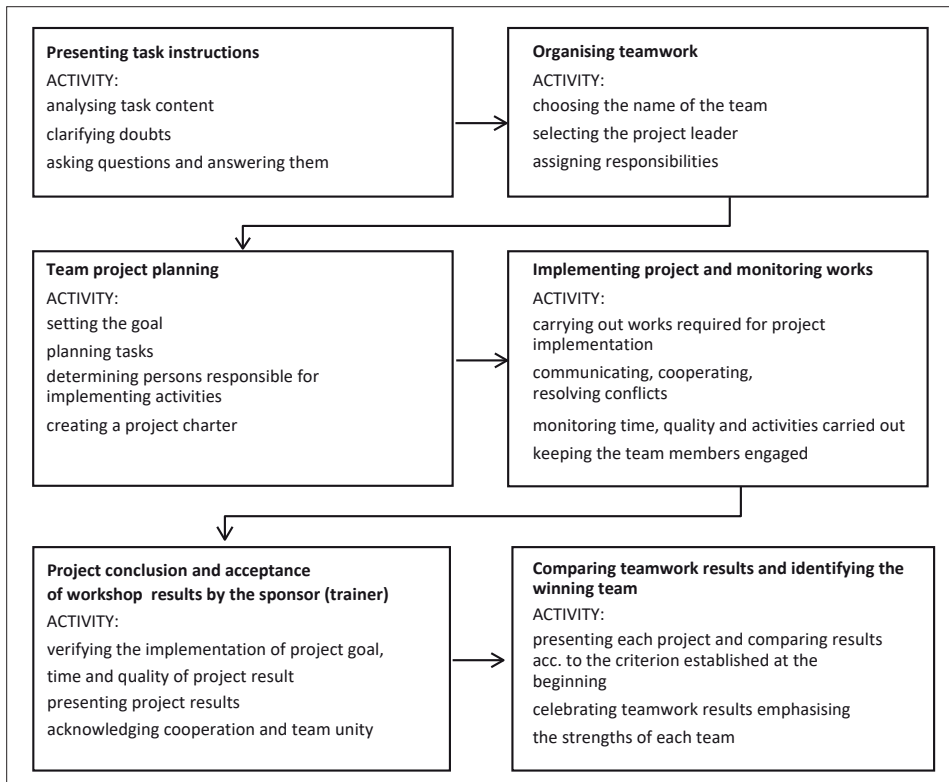


Figure 3.3. Core stages of the workshop part with the activities at the individual stages
Source: Prepared by the authors.

3.3. Method and data description

The study covers children who participated in the extracurricular economic education programme implemented at the Children's University of Economics organised by the Faculty of Economics, Finance and Management (formerly Faculty of Management and Economics of Services) of the University of Szczecin. The children took part in six lecture and workshop sessions.

The study applied methods of statistical analysis. It began with the calculation of descriptive statistics to assess the distribution of variables, sources of variation and associations between variables. This was followed by an analysis of variance

(ANOVA) to verify hypotheses about the differences in the groups studied (boys and girls).

The object of study are the results of final tests in economics, marketing, finance and management, taken as part of the Children's University of Economics project. The analysis covers six editions of the EUD conducted at the University of Szczecin from June 2015 to June 2019. Tests were paper and pencil-tests taken at the end of each edition of the programme. They consisted of 15 single-choice questions. Each question was equally weighted. A total of 289 learners were surveyed from 2015 to 2019 (two editions of the EUD were surveyed in 2017). The numbers of participants surveyed in each year are presented in Chart 3.2.

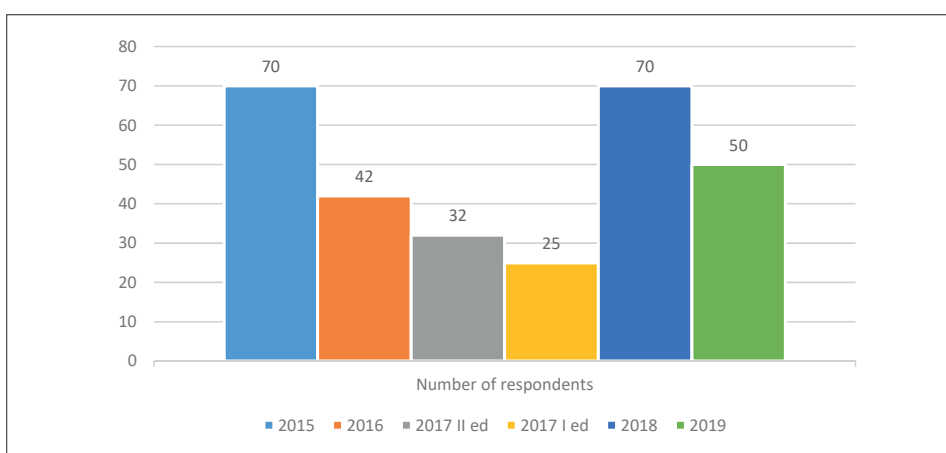


Chart 3.2. Sample size for the years 2015–2019

Source: Prepared by the authors.

Six editions of the Children's University of Economics were attended by 289 children, 141 girls and 148 boys aged 10–13.

3.4. Results of the knowledge survey of learners taking part in the Children's University of Economics 2015–2019

The aim of this statistical study was to analyse the test results (participants' level of knowledge in economics, finance, marketing and management) in the surveyed group, divided by age, sex and didactic topics, as well as to investigate the correlations. In the study group of children, the mean test score over the whole period was 9.6. Table 3.4 shows average results scored in 2015–2019. The highest average result was scored in 2015 (10.46 points), the lowest in 2019 (8.82 points). In the girls group, the highest score was earned in 2018 (9.97 points), while in the boys group it was in 2015 (11.18 points).

Table 3.4. Year-by-year breakdown of test results by gender

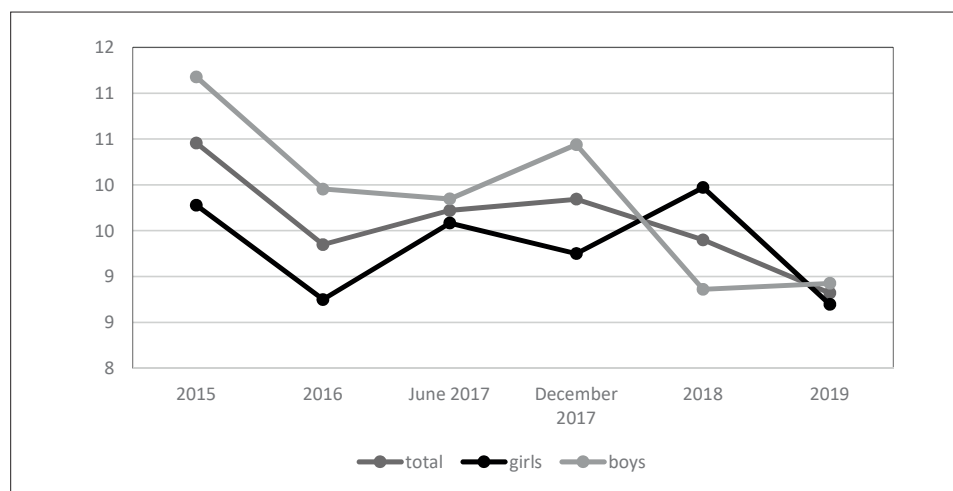
	2015			2016		
	Mean	Median	Standard deviation	Mean	Median	Standard deviation
Total	10.46	10	2.38	9.35	9	2.08
Girls	9.78	10	2.80	8.75	9	2.20
Boys	11.18	11.5	2.87	9.95	10	1.86

	2017, 1st ed.			2017, 2nd ed.		
	Mean	Median	Standard deviation	Mean	Median	Standard deviation
Total	9.72	10	2.39	9.84	10	2.78
Girls	9.58	10	2.54	9.25	10	2.91
Boys	9.85	10	2.34	10.44	10	2.61

	2018			2019		
	Mean	Median	Standard deviation	Mean	Median	Standard deviation
Total	9.4	10	2.32	8.82	9	2.55
Girls	9.97	10	2.11	8.69	9	2.53
Boys	8.86	9	2.40	8.92	9	2.62

Source: Prepared by the authors.

Scores in both groups vary slightly over the years – by up to 2 points (Chart 3.3), with a median of 9–10 points.

**Chart 3.3.** Average test score in 2015–2019 (in points)

Source: Prepared by the authors.

One-way analysis of variance was used to examine the differences in the results of girls and boys. The results are shown in Table 3.5. They indicate that the F value

(Fisher value) is less than the theoretical value of the F -test, while the p -value is high (typically below 0.05). This shows that the test score of these two groups analysed by gender do not differ in a statistically significant way. This means that the awareness of economics, finance, marketing and management topics does not differ between the various age groups of boys and girls. Both groups have a similar interest in these disciplines.

Table 3.5. Analysis of variance for comparing the results of two groups: boys vs. girls

SUMMARY						
Groups	Counter	Total	Average	Variance		
Girls	141	1329	9.425532	5.789058		
Boys	148	1454	9.824324	6.200221		
ANALYSIS OF VARIANCE						
<i>Source of variance</i>	<i>SS (Sum of Squares)</i>	<i>Df (Degree of Freedom)</i>	<i>MS(Mean Square)</i>	<i>F</i>	<i>p-value</i>	<i>F-test</i>
Intergroup	11.48357	1	11.48357	1.914038	0.167591	3.874064
Intragroup	1721.901	287	5.999653			
Total	1733.384	288				

Source: Prepared by the authors.

The surveyed results were also analysed in relation to disciplines discussed in classes: economics, finance, marketing and management. In 2015, children earned the highest score in economics, in 2016 – in finance, in 2017–2018 – in management and in 2019 – in marketing (Chart 3.4).

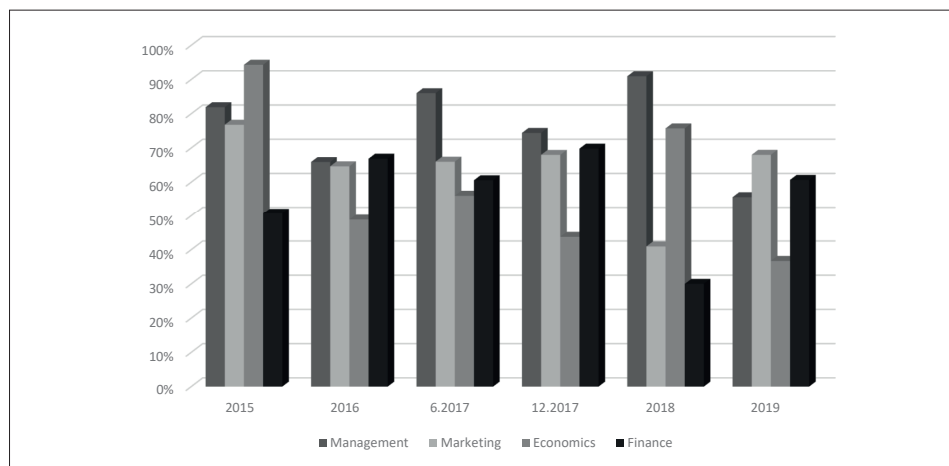


Chart 3.4. Test results by discipline in subsequent years

Source: Prepared by the authors.

Detailed percentages for each discipline are shown in Table 3.6. The highest scores in each discipline are highlighted.

Table 3.6. Test results by discipline in subsequent years (%)

	Management	Marketing	Economics	Finance
2015	81.9	76.8	94.3	50.7
2016	65.9	64.7	48.8	66.9
2017, 1st ed.	86.0	66.0	56.0	60.6
2017, 2nd ed.	74.4	68.0	43.8	69.8
2018	91.0	41.0	75.7	30.0
2019	55.6	68.0	36.7	60.7

Source: Prepared by the authors.

In the study, test results scored by age group of children over the whole period were analysed (Chart 3.5).

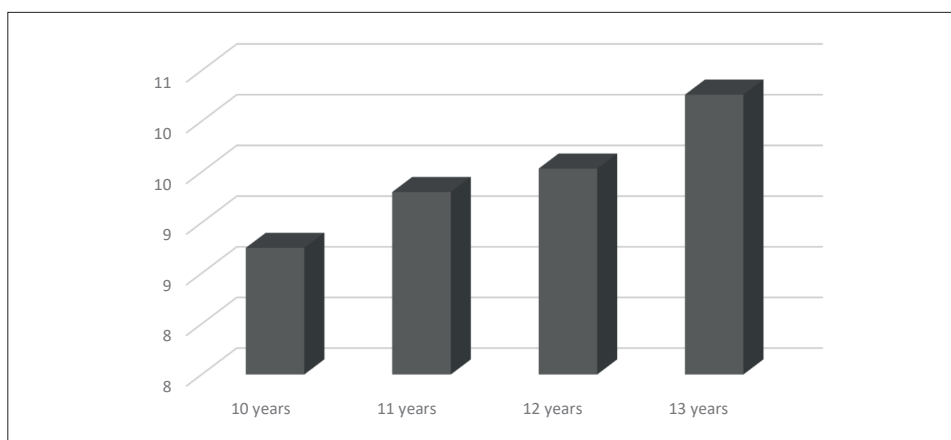


Chart 3.5. Average test score by children's age

Source: Prepared by the authors.

The oldest children are the best performers, with an average test score of 10, while the youngest children aged 10 have the worst results, with an average score of less than 9 points. Table 3.7 shows the results of each age group and the statistical confirmation, i.e. the analysis of variance.

On this basis, it can be observed that the older the group, the better the mean score (also the median), while the standard deviation decreases. This is also confirmed by the analysis of variance, where the *F*-statistic is greater than the theoretical value of the *F*-test with a normal *p*-value (less than 0.05). This means that the difference in test scores between the age groups analysed is statistically confirmed.

Table 3.7. Test results by children’s age

SUMMARY						
<i>Groups</i>	<i>Counter</i>	<i>Total</i>	<i>Mean</i>	<i>Variance</i>	<i>Median</i>	<i>Standard deviation</i>
10-year olds	16	140	8.75	9.4	9	3.06
11-year olds	63	586	9.30	5.56	9	2.35
12-year olds	139	1325	9.53	5.96	10	2.44
13-year olds	69	708	10.26	5.34	10	2.31

ANALYSIS OF VARIANCE						
<i>Source of variance</i>	<i>SS (Sum of Squares)</i>	<i>Df (Degree of Freedom)</i>	<i>MS (Mean Square)</i>	<i>F</i>	<i>p-value</i>	<i>F-test</i>
Intergroup	47.89118	3	15.96373	2.701706	0.045903	2.636504
Intragroup	1672.179	283	5.908758			
Total	1720.07	286				

Source: Prepared by the authors.

The study also looked at differences in mean test score in relation to age and gender. The results show that boys score higher in all age groups except for children aged 12 (Chart 3.6.). However, these differences between boys and girls are not statistically significant.

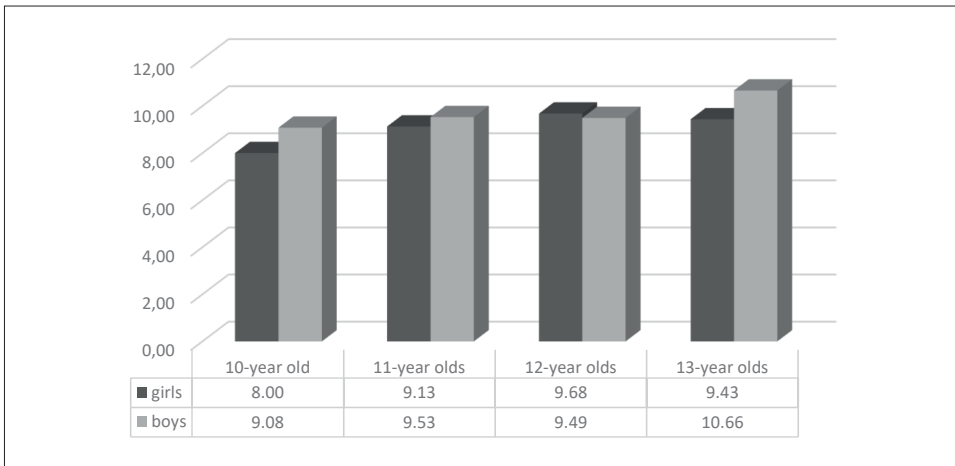


Chart 3.6. Average test scores by gender in respective age groups

Source: Prepared by the authors.

3.5. Study findings

The aim of the study was to determine the competences in economics, finance, marketing and management of children attending the Children's University of Economics in Szczecin. The study was based on the results of tests carried out after the didactic process was completed. The study included a group of 289 children aged 10 to 13 years, participating in the project in 2015–2019. In the group under study, there were 141 girls and 148 boys.

Based on the results, it can be concluded that:

- in the group of children studied, the average test score over the whole period was 9.6, meaning that 64 percent of answers were correct. This is a satisfactory result given that the terms covered in classes were very difficult and abstract in relation to the children's age;
- the means for girls and boys do not differ statistically, which implies that the ability to comprehend concepts presented does not differ significantly in these two groups;
- older children earn more points than younger ones. The score of younger children was below the group average. The relevant results seem plausible and are associated with the capacity to perceive and understand the contents in relation to the children's age (from 10 to 13 years);
- average scores for individual disciplines such as economics, finance, marketing and management vary from year to year, which is understandable given the difficulty of topics covered in each discipline every year;
- average test scores decrease gradually, the lowest results were earned in the last year. This may be explained by the fact that trainers choose more difficult topics as some participants take part in classes again in subsequent editions. This is why more specialised approaches and concepts were introduced to the programme to make the lessons attractive to all participants. The study shows that this can affect the average score of the whole group. Still, 60 percent of answers are correct.

The above analysis and the findings presented show the diversity of the group studied, also in terms of knowledge of broadly defined economic topics. Despite the obvious and explicable differences, it can be said that the financial knowledge resulting from the EUD classes is satisfactory in individual age categories. The thematic scope of classes, teaching methods applied at the EUD and their design corresponded to the age of the participants, as did the test questions. Hence the results of the analysis presented confirm the high knowledge of the participants (children) on the one hand, and the high quality of classes on the other hand.

Conclusions

Development potential depends on the innovation potential of a given economy, which – in turn – is positively correlated with the involvement of the community in the implementation of the lifelong learning concept. Continuous improvement and acquisition of additional competences deemed, pivotal by European guidelines enable people to be competitive in the labour market and provide an opportunity for self-fulfilment. The market needs knowledge workers who should not be linked with only selected professions, because knowledge workers rely on their experience, learn and share knowledge, even when carrying out simple activities. However, people with interdisciplinary competences, e-leaders combining managerial, economic, financial, analytical and IT skills are the most sought after specialists in the market.

The education of children must not be overlooked in these processes. It should be interesting, innovative and allow for experiencing and “touching” topics discussed for the education to be effective. Efforts made to build economic awareness and maturity in children will pay off when they are ready to start their careers. Decisions they will make are likely to be well thought out as they will draw on experience they have gained already. The idea of the Children’s University is unique. The application of standards recommended by the European Children’s University Network makes it possible to ensure the quality level of education that universities are known for, even though this solution has not yet been fully defined. The Children’s University fully embodies the idea of non-formal education as it promotes equality in children’s access to knowledge, it focuses on clearly defined goals, i.e. increasing the financial literacy of its students. Additionally, it is a flexible formula, both in terms of organisation and the teaching methods used.

The participants think of this form of education very highly. Most of them are pleased to have taken part in the Children’s University programme. They stress that

these extracurricular activities are the main source of their financial knowledge, although the study findings reveal a growing role of school here, which may be the result of schools cooperating with Children's Universities. According to the study findings, two thirds of children manage their own budget (pocket money), with only 13 percent spending all of their money at once. Young students also show entrepreneurial flair as they believe that the right idea and start-up capital are most important for a successful business.

Children's Universities must ensure that both children and their parents benefit from the latest trends in learning. EUD and AME take on this task too. The didactic tasks conducted make it possible for children to develop their creativity, problem-solving skills, their commitment to collaboration and effective communication. These are key competences for present and future leaders.

The theoretical issues presented in this monograph and in the studies on the economic (financial) literacy of Poles demonstrate how important this problem and comprehensive financial education are. They all attest to the low economic literacy of the population, which translates into the quality of financial decisions made. The research also reveals the importance, inevitability and urgency of proper financial education covering every social group and adapted to the human life cycle. By providing education to children we make sure that they won't be spending their funds irrationally in the future. They are taught the importance of saving money now to be able to spend it later or to accumulate funds for retirement. Financially literate persons in their prime will make rational decisions on taking out credit and investing, including for retirement purposes. It will also boost seniors' self-confidence when operating in an environment that becomes confusing to them due to the ubiquitous virtualisation of life, and thus exposing them to threats caused by cyber criminals.

It is widely recognized that financial literacy, financial inclusion, together with a strong framework for protecting consumers of financial services are crucial to strengthening the role of actors in the economy and can contribute to the stability of the financial system. This means that the issues of economic (financial) education and information on the level of financial integration of the society should be important for decision-makers.

Economic (financial) education should be an integral part of any educational system. It is very common that education is provided informally, by various institutions, organisations supplementing formal channels. Many studies that have been carried out worldwide and in Poland indicate the importance of financial education and they demonstrate the existence of low financial literacy, competence and skills. The beneficial influence of financial education on decision-making in individual households and the overall economy is confirmed by global and national studies conducted periodically and incidentally. Hence we may say that it has micro and macro effects. It affects not only individual households with all of their members, from children to seniors, but also other economic entities and both their decisions on laying out money

and broadly understood general economic decisions. It impacts the entire economy visibly. It influences the shape of the social insurance system and public spending. Scientific research also shows that financial literacy varies by age group.

The conclusion can be drawn that there is a relationship between age and financial literacy that follows an inverted U-shaped pattern. Young and old people score low, while the maximum results are earned by people in the middle of the life cycle.

Economic education should begin in primary school, in the youngest year groups. It should be correlated with the curriculum at each level of school education and adapted to the developmental stage of the learners. An important element is also the scope of education that needs to include topics related to communication, teamwork, problem solving and conflict resolution, in addition to mathematics, reasoning and logical thinking. Undoubtedly, the commitment of teachers and their willingness to include these topics in their classes is another very important element of this system. The combination of these two aspects determines whether didactic effects such as a significant increase in both the awareness and competence of children and young people in understanding economic and management processes are achieved. Education should be a process adapted to the needs of young learners. It would be beneficial to replace one-size-fits-all programmes with programmes tailored to the specific needs that different age groups of learners have. Education needs to be understood and treated as a continuous process requiring cyclical updating and permanent improvement. As time passes by, each economic entity and each individual household develop new and distinct needs and they have various demands associated with the stage of their life cycle. Apart from the education process, learners must be given access to more modern tools that support their decision-making, help them evaluate the effectiveness of their decisions, make calculations and estimate the consequences of their actions. The process of economic (financial, management) education should be one of the priorities of the authorities to make it possible to introduce and systemically coordinate activities intended for improving lifelong learning. Scientists of various scientific disciplines, such as economists, sociologists and psychologists, need to be included in the education system in order to identify the path to be followed, especially in the analysis of the behavioural aspects affecting decision-making.

A national strategy for financial education containing all the elements necessary for successful implementation of the education process would be very helpful here. The OECD has issued relevant guidelines, thus emphasising the importance of the problem. In Poland, no national strategy for financial education has yet been developed. Its implementation would help to organise the entire economic (financial) education system. The projects and programmes currently in place need to be systematised and structured. Numerous efforts made here are the result of one-off initiatives that often compete with one another. To make the education process more effective, individual initiatives should be complementary to each other and structured

to reach particular segments and groups of recipients. This should replace the piecemeal approach as currently, every now and then, projects financed from EU funds are implemented without being followed up.

Financial education should be introduced early in the life of children and continued afterwards. Unfortunately, financial education is carried out unsystematically, subject to the interests of the implementing or financing entity. There are various initiatives in Poland which need to be organised for their impact and effects to be increased. It would be advantageous if many institutions refrain from pursuing chaotic and sporadic activities on their own in favour of a reduced number of long-lasting financial education initiatives reaching every group of society. Several coordinated programmes are in place, but the efforts are not yet strung together.

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Abstract

The key factor in the process of innovativeness development is competences. In order to even out the development level which differs from region to region, and to stimulate the European economy as a whole, experts emphasise the need to intensify actions taken by academics and recommend that the concept of lifelong learning (LLL) should be implemented to the widest possible extent, indicating which of the competences should be considered as the key ones. At the same time, the technological leap will convert the labour market and the occupational inclusion of society. The desired employee is a knowledge-based employee, also an e-leader, who combines business, analytical and IT competences. Slightly surreptitiously, in the context of competence management under the LLL concept the authors of the study bring to the foreground education of children and youths – which is a “short” version of long-life learning. In this way, they want to underline the role of education that takes place outside school (or in cooperation with the school), in the special form of non-formal education, i.e. at children’s universities. They present the research findings in the area of economic, financial and managerial education based on the example of the programme implemented at the University of Szczecin. The study also describes the innovative case of young project managers as an example of learning by playing, competences appreciated also in the world of adults.

