

## FINANCIAL CULTURE IN TRANSITION

*Levente Kovács – Elemér Terták – Enikő Tomor<sup>1</sup>*

### ABSTRACT

Financial literacy, awareness and knowledge in state education will take centre stage during the financial awareness week, ‘Pénz7’ (2–6 March 2026), as nearly 200,000 pupils will receive training on these topics during this period. In this paper, we present how the subject matter of Pénz7 has changed and evolved over the past 12 years, identify the factors that played a role in this, and looking ahead, outlined the anticipated impact of artificial intelligence (AI). We also publish timely brief summaries of this year’s Pénz7 syllabi.

*JEL codes:* A20, G2, O30

*Keywords:* financial literacy, PÉNZ7, cyberspace, artificial intelligence

### 1 THE LAUNCH OF PÉNZ7

Views on the necessity and the required level of financial literacy are constantly changing. The need for financial literacy is primarily driven by the often turbulent changes in the global economy, such as the impact of economic cycles on people’s financial circumstances and well-being. Financial literacy and the level of knowledge required to understand it, like any other field, are constantly changing and developing fundamentally. However, progress in this area is not even either. There are issues that are made particularly important by current economic conditions or recent developments. Recognising and monitoring these issues concerns not only academics and practitioners, but undoubtedly society as a whole (Kovács–Terták, 2019).

Demand for and interest in financial literacy increased following the 2007/2008 global financial crisis, as many people identified a lack of financial literacy at a societal level as one of the main causes of the outbreak and protracted nature of the economic crisis.

---

<sup>1</sup> *Levente Kovács* Secretary General of the Hungarian Banking Association; Head of Department and University Professor at the Miskolc University. Email: kovacs.levente@bankszovetseg.hu.  
*Elemér Terták* Member of the Board, Hungarian Economic Association. Email: elemertertak@gmail.com.  
*Enikő Barbara Tomor* economist. Email: eniko.tomor@gmail.com.

Due to the financial origins of the crisis, i.e. the collapse of the riskier US sub-prime mortgage market, politicians and the media branded the entire banking sector as the scapegoat. Largely as a result, the financial sector assumed responsibility for strengthening financial literacy as a form of prevention.

In 2013, the Executive Committee of the European Banking Federation called on national banking associations to launch the pan-European Money Week in their respective countries in a coordinated manner. In Hungary, based on this initiative, the Hungarian Banking Association undertook the organisation of Pénz7, finding partners in the government's education and finance ministries, the central bank (specifically the NHB, the Banking Association and the Pénziránytű Foundation, established by Diákhitel), as well as a wide range of financial stakeholders. Thanks to the efforts of the various organisations, the dedication of their staff and widespread collaboration, Hungary's Pénz7 became one of the most active 'Money Weeks' in Europe and globally, and by now it reached the level of a public programme.

Németh et al. (2020) examined training programmes designed to improve financial literacy between 2016 and 2020. The research highlighted that the number of participants in these programmes has almost tripled: while in 2016 461,681 people took part in financial literacy training, by 2020 this figure had risen to 1,310,352. The programmes of Pénz7 had the widest reach. The analysis also highlighted that the vast majority of training courses target pupils in public education. In contrast, among the programmes organised for adults, there is a relatively low proportion of initiatives addressing financially vulnerable groups or those with specific training needs, such as entrepreneurs, pensioners, or the unemployed.

## **2 THE TOPICS OF THE EUROPEAN MONEY WEEK**

The European Banking Federation (EBF) does not set a uniform subject matter for its members for European Money Week (EMW); however, it does make suggestions based on current social needs and challenges in Europe. The recommendations cover overarching European objectives aimed at continuously improving financial literacy and financial awareness across Europe. These are shown in *Table 1*.

**Table 1**  
**Proposed topics for the European Money Week (2015–2026)**

Year	Suggested topic	Description
2015	Launch of EMW: The importance of financial education	Promoting financial education among school-age children, with a particular focus on basic financial skills such as budgeting, saving and responsible financial management.
2016	Raising financial education to the European level	The aim is to raise awareness of financial education and to emphasise the importance of integrating it into the curricula.
2017–2018	Financial literacy and sharing best practices	The events focus on sharing best practices in financial education, in workshops and round-table discussions. In 2018, particular attention will be paid to the issue of the gender gap in financial education, as well as to the integration of a sustainable financial mindset at EU level.
2019–2020	Choice of three topics	It is centred on financial awareness, digital financial literacy and financial education for young people, in line with the objectives of Global Money Week.
2021–2022	Digital finance and young people's financial skills	Strengthening the European Money Quiz as a flagship programme, with the aim of improving the financial literacy of 13–15-year-olds, with a particular focus on digital financial skills, risk awareness, saving and investing.
2023	Financial skills: preparation for a sound financial position	Highlighting financial skills to ensure a secure financial future, pointing out the role of financial awareness, skills and knowledge in everyday decisions.
2024	Strengthening financial education in Europe	The 10th anniversary event focuses on strengthening financial literacy across Europe, digital skills, trends and strategies, as well as exploring how financial education can be further expanded at both policy and educational levels.
2025	Raising financially literate generations	Financial resilience and financial education across generations, with particular regard to national strategies, social partnership, and financial awareness regarding cybercrime in an increasingly digital financial environment.
2026	Preparing for personal finances	An emphasis on financial education and financial literacy, with a particular focus on basic personal finances and financial knowledge, complemented by various events and the European Money Quiz.

Source: Edited by [www.penz.hu](http://www.penz.hu).

Based on the table, the following universal objectives can be highlighted in relation to European Money Week:

- Promotion of financial education for children and young people;
- Development of financial awareness and financial skills;
- Recognition of future trends in financial education,

- Digital financial literacy and cybersecurity (especially from 2024);
- Financial strategies and partnerships;
- Long-term financial resilience, generational financial literacy.

### 3 TOPICS OF THE HUNGARIAN PÉNZ7

When Pénz7 was launched, one of the key tasks, alongside the organisation, was to develop and approve the training curriculum. The aim was to ensure that all key topics related to financial literacy were covered, and that pupils could complete them from Year 7 through to Year 12 (a six-year period). At the outset, the key stakeholders, i.e. the Hungarian Banking Association, the Pénziránytű Foundation and the Ministry for Education, approved the following topics:

- I. Family budget
- II. Savings, financial planning
- III. Bank smart! (Modern cash management)
- IV. Smart borrowing
- V. Smart investing
- VI. Financial security

The plan was to revisit these topics every six years. The topics covered in the textbooks *Missions in the World of Money* (Küldetések a pénz világában, Burkáné et al., 2017), published by the Pénziránytű Foundation and aimed at primary school pupils, and *Compass in Finance* (Íránytű a pénzügyekben, Merényi et al., 2016), written for secondary school pupils, also reflect this division.

Of the relevant requirements for the 21st century, financial education was not integrated in the National Core Curriculum (NAT); therefore, for want of a better solution, financial education was incorporated into the curriculum as a thematic week; this is what we call Pénz7 these days. Similar reasons justified the establishment of Digital Thematic Week and Sustainability Thematic Week, patterned after this initiative. We trust that during the next revision of the National Core Curriculum, proper space will be granted to these fields in the core curricula for public education. The number of thematic weeks is limited by the scope of the National Core Curriculum, which is why the entrepreneurial skills required for economic activity are no longer covered in a stand-alone thematic week. Based on the notable success of Pénz7 and at the request of the Ministry in charge of economy, two training areas have been running in parallel since 2016 during the Pénz7: mainly for financial literacy, in a minor part for entrepreneurship. *Table 2* shows the topics covered by Pénz7, broken down by year.

**Table 2**  
**Pénz7's financial and entrepreneurship topics (2015–2026)**

<b>Year</b>	<b>Financial topics</b>	<b>Entrepreneurship topics</b>
<b>2015</b>	Family budget	
<b>2016</b>	Savings, financial planning	
<b>2017</b>	Bank smart! (Modern cash management)	Business ideas and collaboration – Needs and demands – Creativity and business ideas – Brainstorming, entrepreneurship
<b>2018</b>	Smart borrowing	Business ideas and partnerships – Creativity – Developing a business idea – Investors
<b>2019</b>	Smart investing	Take the Leap! – Identification of issues – Developing your own business idea
<b>2020</b>	Financial security	From an idea to a business
<b>2021</b>	Responsible money management within the family – Family budget	InnoVÁL(L) – Smart entrepreneurship – Resolutions, ideas, goals – Opportunities for starting a business – Financial and legal aspects of starting a business – Psychological factors in making a business a success
<b>2022</b>	Financial planning, savings	InnoVÁL(L) – Smart entrepreneurship – Starting a small business – Efficient management – Social media marketing
<b>2023</b>	Modern cash management and digital security in cyberspace	Think and take the leap! – Design thinking – Business communication – Profit and loss
<b>2024</b>	“Life lessons in finance” – Smart borrowing	Think and take the leap! – Competitive advantage and becoming unique – Figures and statistics – Forecasting in sales
<b>2025</b>	Smart investing	– Energy efficiency – IT in the business sector
<b>2026</b>	Financial security (insurance) and artificial intelligence in finance	Think and take the leap! – – Resources – Business correspondence – Inventory management – Human resources

Source: Edited by [www.penz.hu](http://www.penz.hu).

This year, i.e. 2026, marks the closure of the second the six-year cycle of the finance-thematic week. The plan is to retain the six-topic rotation, although the order in which the topics are dealt with may vary depending on current challenges. This has also been the case recently, as the curriculum has been revised from a cybersecurity perspective due to the significant presence of cyber risks in recent years.

Looking ahead, given the constant evolution of forms of cyber fraud, it is expected that appropriate cybersecurity solutions will be continuously incorporated in the Pénz7 annual curriculum. A major overhaul of the curricula may become necessary due to the spread of AI use, as this could fundamentally transform the use of financial services and the making of financial decisions.

#### **4 THE APPEARANCE OF CYBER IN THE PÉNZ7 TRAININGS**

The financial literacy and knowledge required are constantly evolving in the light of dynamic changes in the surrounding world. In retrospect, the following main effects of the past twelve years are worth highlighting at regional level:

- The wave of migration, originated primarily from war-torn countries and secondarily as a consequence of the climate crisis, peaked in 2014 and has since flattened out (Frontex, 2015).
- In 2019, the global outbreak of the COVID-19 pandemic precipitated a temporary standstill in the world economy, fundamentally reconfigured the organisation of work through the widespread adoption of remote working, and accelerated the expansion of digital services, e-commerce, and payment systems.
- While the pace of digital transformation has accelerated, cyber defence systems have not developed commensurately; moreover, in many areas, the euforic success of the digital transition has overshadowed the establishment of adequate defence mechanisms, both at the regulatory level and, to some extent, on the part of service providers (Terták–Kovács, 2025).
- From 2020 onwards, it can be said that certain IT companies have achieved significant success with their technological advances in the application of artificial intelligence at a societal level. The best-known achievement is ChatGPT, launched in 2022, which is an AI-based chatbot developed by OpenAI.
- As of 2022, following the outbreak of the Russia–Ukraine war, the volatile fluctuations in energy prices have driven up food prices worldwide, fuelled inflation and slowed economic growth.

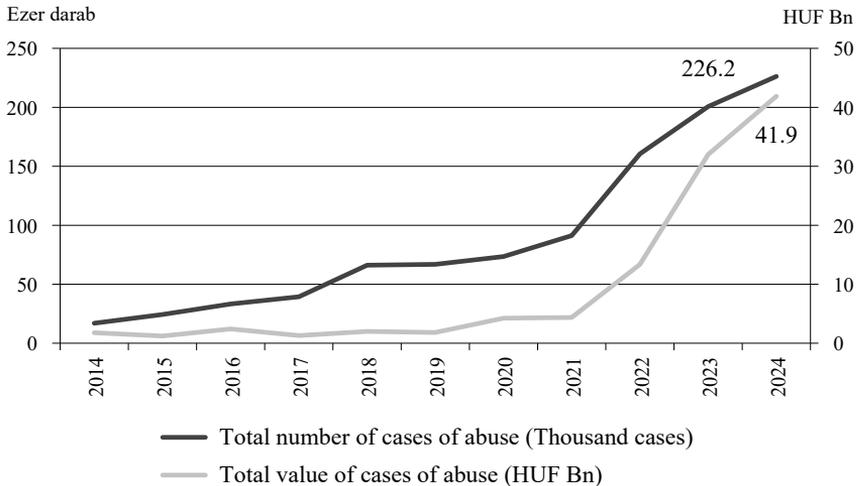
- In 2023, the regional effects of the Israel– Hamas war raised global security concerns and induced economic uncertainty, further exacerbating the economic impact of the Russia– Ukraine war.
- In 2024, the election of the new US president significantly reshaped the framework and methods of political and economic cooperation, which rocked the global economy and accelerated the increase of defence expenditure.
- The issue of foreign exchange lending has emerged as a recurring theme in parliamentary election campaigns across the Central and Eastern European region, a trend further amplified by populist rhetoric portraying the banking sector in an adverse light.

Each of the factors listed had such an in-depth effect on the real economy and the financial sector that funds it, that it became necessary to refresh the basic financial literacy at a societal level. In financial literacy, change does not occur in the same manner as in disciplines such as physics, where new discoveries may render previously accepted knowledge obsolete and necessitate the development of entirely new models. In the context of financial literacy, change tends to signify progress; that is, evolving needs and opportunities bring the requisite knowledge to greater prominence across additional domains. The level of expertise required to understand inflation varies significantly: near-zero inflation demands different level of knowledge than double-digit inflation. Inflation related knowledge is hardly useful, but it is essential in the event of double-digit inflation.

Of the above-mentioned global effects, the most significant changes have been induced by cyber risks and the emergence of artificial intelligence. The latter is presented in **CHAPTER 6**.

In the context of the surge in cyber risks, it is worth studying *Figure 1*.

**Figure 1**  
**Trends in the number and value of abuses in Hungary**



Source: (NHB, 2026)

The graph shows that the incidence of cyber fraud has been rising by leaps and bounds since 2023. Accordingly, knowledge on preventing cyberattacks has been incorporated into the PÉNZ7 financial syllabi with increasing emphasis. In 2026, cybersecurity appeared for the first time as a standalone curriculum within PÉNZ7's financial track, alongside the [annually rotating] insurance topic.

## 5 PÉNZ7'S FINANCIAL TOPICS IN 2026

In 2026, at first, two financial syllabi were developed for PÉNZ7. Based on the six-year rotation, the topic of insurance was next; however, due to the rapid rise of artificial intelligence and related cybersecurity topics, this theme was also developed separately.

### 5.1 The insurance curriculum

In 2026, financial security will be in the thematic focus of the Pénz7 programme for primary and secondary schools. Insurance is a particularly effective topic in school-based financial education, as it provides a framework for raising pupils' awareness of everyday risks and the insurance or other strategies available to

manage them (for example insurance-based solutions, such as accident insurance for accidents or pension insurance as a form of saving; and non-insurance measures, such as defensive driving to reduce risk exposure or building short-term emergency savings to absorb unexpected financial shocks). Insurance policies are typically designed to cover uncertain future events that may result in minor or greater financial losses (e.g. repairing a car damaged in a road traffic accident; renovating or rebuilding homes rendered uninhabitable by fire or water damage). In this context pupils can learn about risk allocation mechanisms, the risks that insurers can underwrite, the process of concluding the contract, and the settlement of claims.

From a theoretical perspective, the functioning of insurance is closely linked to the expected utility theory and risk-averse behaviour. Households are willing to pay insurance premiums in order to mitigate the financial impact of future adverse events with uncertain but potentially significant financial consequences. The curriculum (such as property, accident or health insurance) provides pupils with an opportunity to have a practical understanding of the theoretical framework. The easy-to-interpret examples descriptively explain the concepts, such as water damage to a flat (loss event), a large group of customers taking out home insurance (a risk pool), and, in many cases, quick and straightforward payments (compensation).

From an educational perspective, it is equally important that insurance is not presented merely as a financial product, but as a subject that equips customers to make informed decisions. However, primarily from an individual and societal perspective, and with the view to manage risks appropriately, it is important that young people be sufficiently informed and aware in this field.

Taking out insurance (e.g. home, health or travel insurance) is, in theory, typically a collective decision taken at household level. Within the interpretative framework of microeconomic household decision-making models (e.g. the unitary or collective model), the choice of insurance is not solely the result of individual optimisation, but also the consequence of bargaining processes, preferences and coordination mechanisms within the family. Members of a household have differing risk attitudes, preferences and perceptions regarding potential loss events and their financial and welfare consequences. In practice, income constraints, the degree of risk aversion, risk attitudes, and information asymmetries – particularly differences in financial literacy – play a decisive role in the decisions made by adult household members. Based on this, individuals and members of households exposed to the same or similar risks may arrive to different decisions regarding risks that affect them in the same way. Young people might find it useful to learn about insurance in an interesting and easy-to-understand way, while

still in school with the view to understand the relevant issues and respond to them appropriately.

Insurance decisions therefore require household members to have adequate financial knowledge. Being aware of basic concepts such as risk, uncertainty, loss event, and risk allocation – and, above all, the ability to understand them and apply them in practice – is essential for recognising the need for insurance and making rational choices among alternative options. The insurance decision is a good illustration of expected utility theory, the importance of risk diversification, and the nature of intertemporal decisions, as it is based on weighing present costs against uncertain future outcomes. Learning about and understanding insurance solutions may therefore make a material contribution to improving financial literacy and responsible decision-making, as well as providing greater security in everyday life.

## **5.2 Artificial Intelligence / Cybersecurity curriculum**

The title of the 2026 cybersecurity curriculum is: Artificial intelligence in finance: foundations and risks.

The curriculum has been designed to present artificial intelligence as an engaging topic of interest to everyone, at the same time including knowledge of cybersecurity. This was necessary because, according to a Mastercard survey, while 92% of Hungarians consider themselves prepared in terms of cybersecurity, only 70% could identify what sensitive (unique, confidential, secret) information banks are never permitted to request by phone, and only 46% were able to recognise a clearly fraudulent email as such.

As a new field, many people find AI exciting and appealing, so the curriculum itself is likely to attract widespread interest among the younger generation. Despite its many useful features, AI already poses numerous risks in our daily lives, such as:

- Deception and fraud (deepfakes);
- Data breaches and leaks;
- Excessive reliance; the development of dependence;
- AI hallucination;
- Copyright issues;
- Environmental impact.

Environmental pressure is one of the least understood areas. Users often forget that complex internet searches require an exorbitant computing power, with significant global energy consumption. The same way, polite “thank you” emails also place a heavy burden on our environment.

Today AI is already an integral component of the financial services. The curriculum provides a detailed overview of banking applications that are convenient, accurate, and due their design consumers consider them increasingly natural and, after initial hesitation, they are capable of using them properly.

The developed curriculum assists in understanding of AI-based financial services in a forward-looking manner, helps acquiring the necessary knowledge of cybersecurity, and reinforces a sense of personal responsibility towards the green environment.

## 6 THE IMPACT OF ARTIFICIAL INTELLIGENCE ON FINANCIAL LITERACY

In the 19<sup>th</sup> century, railways and shipping relied on coal mining; in the 20<sup>th</sup> century, motorisation relied on oil mining; and in the 21<sup>st</sup> century, digitalisation relies on data mining. Figuratively speaking, the data may well be lying in the street but collecting and organising it – and uncovering the connections between its various elements – requires enormous computing power.

The first general-purpose electronic computer, the American ENIAC (Electronic Numerical Integrator and Computer), was completed eighty years ago. It could calculate a projectile's trajectory in 30 seconds – this task that far took an artillery officer 20 hours to complete. It was this dramatic increase in speed that marked the beginning of the era of modern computers.

Since the creation of ENIAC, computer science and information technology have undergone huge development. A today's laptop costs only a fraction of what the ENIAC did, still, it can process billions of times more data, billions of times faster, while its weight and power consumption are also a fraction of those of the first computer.

**Table 3**  
**Summary Table: ENIAC (1945) versus a laptop (2026)**

Features	ENIAC (1945)	Modern laptop
<b>Speed</b>	5,000 additions per second	Billions of operations per second
<b>Memory</b>	~60–80 bytes	8 GB to 32 GB+ (gigabytes)
<b>Weight</b>	~30 tonnes	~1.5 to 2.2 kg
<b>Programming</b>	re-wiring/connections	software/operating system
<b>Performance</b>	150 kW	< 100 W
<b>Price (at today's prices)</b>	\$7 million	\$100 and \$1,000

*Source:* Based on Haigh et al., 2014

However, these days even laptops are considered relics of the past. They are replaced by cloud computing and nanocomputers, representing a revolutionary technological leap that condenses enormous computing power into a remarkably small form factor. The development of nanocomputers is still in early stage, but the results achieved so far are indeed impressive.

What is the relevance of these new technologies? Advances in networking equipment have made it possible for computer networks to become increasingly faster. Faster internet connections (high bandwidth) gave rise to a range of new IT solutions. The essence of cloud computing is that services and data, accessible via a network or the internet, are not physically located on a single hardware device (e.g., a central server), but are distributed across multiple devices (e.g., multiple servers). Nanocomputers are revolutionising the field because they are smaller, faster, and more energy-efficient than the earlier ones. The implications of this technology are astonishing, and they may revolutionise many aspects of our lives. Above all, they enable the development and everyday use of artificial intelligence, based on rapid processing of vast amounts of data.

Artificial intelligence also rapidly transforms the banking sector, moving from experimental, rule-based automation toward proactive, intelligent systems, thereby enhancing efficiency, security, and the customer experience. Last year, more than 90% of banks reported about active investment in AI, with applications ranging from fraud detection to generative AI (GenAI), and autonomous “agent” systems (PwC, 2025).

### **6.1 What are the main areas of application and use of AI in the field of finance?**

#### **a) Fraud Detection and Prevention**

Based on its full knowledge of customers’ past transaction history, AI can identify uncommon orders and determine whether additional approval is required or that transaction should rather be blocked. In the case of bank account numbers of beneficiaries already known from fraud, blocking is clearly the appropriate course of action.

#### **b) Customer Service (Chatbots/Virtual Assistants)**

AI-powered chatbots, available 24/7, handle routine customer inquiries, update account balances, record transactions, receive and by default investigate complaints, and provide basic financial market and service information.

- c) Property management consulting: Robo-advisors are able to provide personalised investment advice and portfolio restructuring based on an understanding of the customer's financial situation and risk appetite.
- d) Credit assessment and credit rating  
AI evaluates a wider range of data sources to assess creditworthiness more accurately and almost instantly than traditional credit assessment procedures. There may be banking or public databases that enable the bank to provide a preliminary loan offer, as these can be used to generate personalised offers and carry out credit assessments at minimal cost. With regard to accuracy, it should be noted that the judgement of bank risk managers, which incorporates human factors, can introduce some distortion via the programmer, meaning that not all financial providers' offers will be exactly identical.
- e) Operations performed by AI agents  
For example, AI-powered autonomous agents can independently manage and track a customer's loan application from submission through to disbursement and repayment, thereby eliminating time-consuming and costly manual efforts.
- f) Generative AI and Content Creation  
Banks use GenAI to create personalised marketing materials, summarise multi-element documents and generate codes.

## **6.2 What are the benefits of AI in banking services?**

- a) Greater efficiency  
The introduction of AI could improve cost-efficiency in the financial sector by up to 15 percentage points.
- b) Cost reduction  
Once the systems have been developed, automation of routine tasks, such as data entry and compliance checks, reduces overhead costs.
- c) Enhanced personalisation  
Banks can offer customers personalised financial products and advice based on their spending habits and behaviour. AI can also provide effective support for cross-selling activities.
- d) More reliable risk management  
Real-time monitoring strengthens the up-to-date monitoring of customers' financial situations, cybersecurity, and anti-money laundering (AML) efforts, as well as preventive measures.

### **6.3 Challenges and risks in the use of AI in banking applications**

- a) **Data Protection and Security**  
Processing large volumes of customer data increases the risk of violations of law. Data protection rules will therefore likely need to be adapted to the specific features of the AI era. Any nation that fails to adopt the new data protection principles will lag behind more flexible countries in terms of economic development.
- b) **Regulatory Compliance**  
As artificial intelligence advances, banks must ensure that their operational and decision-making models are explainable, transparent, and compliant with strict regulatory requirements, particularly in the case of credit decisions.
- c) **Bias in algorithms**  
Decision-making models powered by artificial intelligence can “inherit” potential biases originating in training data, which could potentially lead to unfair lending practices.
- d) **Integration with legacy systems**  
Older, inflexible IT infrastructure can often make it difficult to implement AI-based tools and software. This will necessitate a transition to a common IT platform.

### **6.4 Other risks associated with the use of AI**

- a) Deception and fraud involving manipulated audio and video (deepfakes);
- b) Excessive reliance when making decisions; the development of dependence;
- c) AI hallucination;
- d) Environmental impact.

### **6.5 Future trends in the field of banking AI applications**

- a) **Autonomous finances**  
Artificial intelligence manages and optimises financial matters with minimal human intervention. This can boost customer confidence while reducing encryption-related issues and costs.
- b) **Multimodal artificial intelligence**  
Simultaneous processing of various types of data, such as images, audio, and text.

- c) The future of the banking sector depends to a large extent on the use of artificial intelligence. The industry is moving toward “artificial intelligence” strategies with the view to boost competitiveness and could potentially generate \$1 trillion in annual value growth by 2028 through these technologies (PwC, 2025).

Organisations that fully embrace artificial intelligence could see an improvement of up to 15 percentage points in their efficiency metrics (PwC, 2025). A shift of this magnitude could alter shareholders’ yield expectations.

Today, the use of AI can be perceived through the in-depth changes taking place in banking customer service, as artificial intelligence becomes increasingly integrated into day-to-day customer interactions. In the field of retail financial services, for example, AI-powered chatbots scan internal databases, customer account data, customer relationship records, and service receipts to provide immediate, accurate, and personalised customer support. In asset and property management, many banks already use GenAI to provide real-time information and to build portfolios tailored to individual customers’ risk appetite, spending habits, and long-term goals. Customers who receive this personalised service can have a positive impact on customer satisfaction and customer retention.

For example, the customers’ personal financial advisory platform combines budget planning, borrowing, investing and insurance into a single chat. The personal financial advisor module then creates a personalised portfolio or submits a loan application once the customer has approved the loan proposal. While a customer is searching for flights to Italy, the same digital agent automatically fills out a credit card application that offers travel rewards and immediately issues a digital bank card calibrated to the customer’s expected expenses. In the background, autonomous AI agents can monitor stock and bond markets and prepare orders, awaiting the customer’s confirmation before executing the transaction. These capabilities are currently still in the experimental phase, but they project the prospect that banking will once again become a personal experience, sparking interactions that are proactive and deeply personal, yet seem almost invisible.

## 6.6 How does AI shape customer impact and growth?

- *AI embedded in everyday platforms:* Through AI tools integrated into non-financial applications, such as travel or telemedicine applications, banks can generate financial offers, such as credit card approvals and emergency health insurance funds, based on real-time needs, without requiring the customer to open the bank’s application.
- *Proactive financial decision-making:* AI “anticipates” needs before they even arise, for example, by offering student loans when customers are looking for

colleges for their children, thus continuing shift toward a proactive commitment. *Lifestyle-Based Financial Planning*: Artificial intelligence puts into context spending and saving habits to provide personalised financial advice.

- Módosné, Jenei and Németh (2025) examined the correlations between objective financial knowledge, subjective financial confidence and digital financial behaviour, based on a nationally representative Hungarian sample from the 2023 OECD International Survey on Financial Literacy. The results show that higher levels of education and income are associated with greater financial literacy and more frequent use of FinTech, whilst age shows a negative correlation.

### **6.7 What can be anticipated in banking AI applications?**

Banks already use artificial intelligence internally to identify potential customers, liaise with existing customers, and optimise sales and marketing processes.

AI assistants help account managers prepare for customer meetings by revealing customer-specific information, recent transactions, revenue data and product usage trends. In the fields of sales and consulting, artificial intelligence tools synthesise large volumes of transactional, market, and behavioural data to enable the creation of personalised awareness campaigns and product recommendations tailored to customers' needs. These tools shorten sales cycles and deepen customer relationships without reducing staff numbers.

However, the use of AI in the financial sector is still in the early stages. It is therefore difficult to predict precisely what other changes this will bring to day-to-day banking transactions. However, it is almost certain that the customer retention rate will increase if the bank is able to proactively predict where and how customers will spend most of their time, and tailor its offers accordingly.

In the coming years, artificial intelligence is expected to become a central component of front-office productivity, transforming the work of bankers and the banks' growth pace. Intelligent agents will support real-time service and offer generation, and will display dynamic content based on customer behaviour, context, and preferences. Calendar-based marketing campaigns shift towards adaptive, AI-driven engagement strategies that continuously learn and adapt. Account managers will spend more time on value creation, supported by AI-powered assistants that act as real-time research assistants, collect data, carry out compliance checks, and act as strategic thinking partners in identifying which customers are the most profitable and which products are best suited to the customer's portfolio. Future customer services will be faster, more accurate and more responsive, with artificial intelligence acting as the fuel that drives revenue growth.

As a consequence of AI, the scope of financial knowledge required for financial literacy undergoes an essential transformation, leading to a revision of the PÉNZ7 curriculum.

## 7. SUMMARY

Teaching of financial literacy in the Hungarian public education takes place in the framework of the PÉNZ7 thematic week. The division into six subject areas established 12 years ago is retained, but the curriculum taught constantly evolves and adapts to a changing environment and new challenges. The first significant change came with the preparation for cybersecurity, which has become an integral part of the curricula. In 2026, alongside the next insurance-related topic, the topic of artificial intelligence was introduced, partly as a new area and also containing cybersecurity knowledge.

The take-up of AI will certainly enhance the customer experience, potentially increase customer loyalty, and at the same time improve operational efficiency in the banking sector. At the same time, since its operations are based on organising and analysing customer data in a database, the bank inadvertently gains deep insight into individual customers' personalities, habits, and past; therefore, warranting maximum data security becomes crucial.

## REFERENCES

- Burkáné, Sz. Á. – Merényi, Zs. – Székely, J. (2017): Küldetések a pénz világában, (126.) *Könyvtárellátó Kft.*, Budapest.
- Frontex (2015): Annual Risk Analysis 2015. (59). 2015.04.27.
- Haigh, T. – Priestley, M. – Rope, C. (2014): Engineering “The Miracle of the ENIAC”: Implementing the Modern Code Paradigm, *IEEE Annals of the History of Computing* 36(2), 41–59. *IEEE Computer Society*.
- Kovács, L. – Terták, E. (2019): Financial Literacy – Theory and Evidence, 50. *Verlag Dashöfer*, Bratislava.
- Merényi, Zs. – Vasné, B.Á. – Arnaldo, F.S.P. (2016): Iránytű a pénzügyekhez (200.) *Könyvtárellátó Kft.*, Budapest.
- MNB (2026): A hazai pénzforgalom helyzete: digitális fizetések és csalási trendek, tanulmány.
- Módosné Szalai, Sz. – Jenei, Sz. – Németh, E. (2025): Knowledge or Confidence? Exploring the Interplay of Financial Literacy, Digital Financial Behavior, and Self-

Assessment in the FinTech Era. *FINTECH*, 4 (4). No. 75. <https://doi.org/10.3390/fintech4040075>.

Németh, E. – Vargha, B.T. – Domokos, K. (2020): Pénzügyi kultúra. Kik, kiket és mire képeznek? Összehasonlító elemzés 2016–2020. *Pénzügyi Szemle/Public Finance Quarterly*, 65 (4), 554–582.

PwC (2025): The future of banking: How AI is reshaping the industry, 10.16.2025, <https://www.pwc.com/us/en/industries/financial-services/library/how-ai-is-reshaping-banking.html>.

Terták, E. – Kovács, L. (2025): Kiberbiztonság – kibertér. (208). *Magyar Bank-szövetség*

[www.kiberpajzs.hu](http://www.kiberpajzs.hu)

[www.penz7.hu](http://www.penz7.hu)