IT Fitness Test

2024 V4
FINAL REPORT

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Foreword – Slovak Republic

Mário Lelovský
Chairman of the Digital Coalition

Ladies and gentlemen,

In today's world, where digital technologies shape almost every aspect of our lives, digital skills are a prerequisite for success. They are not only a tool for work, but also a pathway to effective learning, communication, and problem solving. The ability to navigate the digital environment allows us not only to acquire and process information, but to use it creatively and critically. Investing in the development of these skills is key to adapting to rapidly changing conditions and to building a career in any field. Today, digital literacy is no longer an advantage; rather, it is a basic need.

Over the course of 2024, we at the Digital Coalition have devoted maximum attention to ensuring that the young generation in Slovakia acquires the necessary skills for successful entry into the labour market and quality employment, which will help further develop the competitiveness of the Slovak economy. One of our successful projects is the IT Fitness Test, whose record participation and results, evaluated also at the international level, are proof of our joint efforts for a better future.

It is a great honour for me to be able to state today that the interest shown and the results achieved reflect the strength of our younger generation in the digital world. The success of this – the thirteenth year in a row – is the record number of almost 190 thousand pupils tested from among the Visegrad Four countries, which is proof that this project continues strengthening its relevance and importance every year. And I am proud that this year Slovakia has again topped the ranking with the highest average success rate among all participating countries.

This year we tested more than 50 thousand elementary and secondary school pupils from Slovakia. The Bratislava and Prešov regions once again demonstrated excellent results, setting the bar high. We are also pleased that thousands of teachers took part in the testing, whose average results show the importance of their mission in imparting digital skills.

The success of Slovak pupils is not just about their results. They reflect the preparation and commitment of teachers and the necessary systematic support for digital literacy. We need to continue to develop cognitive skills, reading comprehension, and critical thinking. These are fundamental pillars for lifelong learning.

In 2025, the PISA tests will again be conducted, and for the first time the theme will be learning in a digital world. Pupils will have to demonstrate their skills in working with information, communicating effectively online, and solving problems using digital tools. Preparing pupils for the challenges of the digital transformation has already become a fundamental pillar of the education system in Slovakia and abroad.

Let me therefore conclude by thanking all who contribute to the development of digital skills in Slovakia. Together, we are taking the steps to ensure that our children are prepared for the challenges of the 21st century.

Foreword – Slovak Republic

Richard Raši
Minister of Investments, Regional Development, and Informatization of the Slovak Republic

Ladies and gentlemen,

I am extremely pleased that you are once again holding in your hands the result of a year of hard work on the IT Fitness Test 2024 project, which ranks among the truly exceptional projects in Slovakia and the region. Since 2009, it has actively helped pupils, students, and their teachers promote and develop their digital skills.

Many activities are devoted to the measurement of digital skills on a national as well as global level, and for good reason. This year, for example, the results of the international PISA study clearly indicate the extent to which pupils' socio-economic background influences their performance, and Slovakia holds a very specific position in this context. In fact, the difference in results associated with students' socio-economic status is greatest in Romania, followed closely by our country. Unfortunately, in the field of mathematics, Slovakia ranks an unflattering first in this respect. Advantaged students scored 133 points higher in mathematics than their socially disadvantaged peers. This is a long-term trend that has been captured in measurements since 2012.

The results of an international study on computer and information literacy among eighth graders also confirm that children from families with a higher education and easier access to technology perform better. As much as 8% of Slovak pupils were living in a household without a computer at the time of the measurement. Unfortunately, these are precisely the children who scored lowest among their peers in both computer and information literacy and in computational thinking.

Conversely, the highest performing children were those whose households contained 3 or more computers. The study showed the same correlation between pupils' performance and their access to the Internet from home. Pupils without home internet access scored significantly lower compared to those who were more fortunate in terms of connectivity and material provision.

But why do we devote so much space to the PISA survey and its findings? Here at the ministry of informatization, we believe that every child, regardless of their background, should have the opportunity to develop their potential. However, some families do not have the finances to do so and therefore the state must help. That is why we helped equip more than 130 thousand Slovak pupils with computer technology in 2023 under the Digital Pupil project, which also won praise from the European Commission as an example of good practice.

We are even more pleased with the fact that the results of this year's IT Fitness Test confirm this activity, as the success rate has increased in both measured age categories. We will continue doing everything we can to maintain the trajectory we have set with our upcoming projects, which you will hear more about soon.

Finally, I would like to thank the organizer of the IT Fitness Test, the Digital Coalition, for the successful implementation of its most-recent edition. Thanks also to them for making data available to us through this report, which gives us the opportunity to create even more targeted support for pupils, teachers, and schools.

Foreword – Czech Republic

Jaromír Hanzal
Director of the Association for Applied Research in IT

Following last year's IT Fitness Test, which was a great success, we managed to test a significant number of pupils, students, and teachers this year. We are pleased that we have been able to continue to raise awareness of this project in the Czech Republic. It is now fashionable to say that our economy is comprised too much of assembly plants and that the post-revolutionary economic model has run out of steam. In order to have a chance of transforming the Czech Republic and other countries in the V4 region into modern digital economies, we need to systematically build digital skills in all age groups of the population. However, today's pupils and students should be the pillars of the labour market and the main carriers of the digital revolution in the future. We therefore welcome a tool that makes it possible to test their digital competences today and provides the responsible authorities with an additional source of data as well as a tool for evaluating education policies.

Foreword – Poland

IT Fitness Test

Michal Kanownik
President of the Digital Poland Association

We have conducted the IT Fitness Test in Poland for the third time, achieving the highest number of participants ever since the first edition in our country. It shows that the project is gradually becoming more recognizable among students, teachers and schools. Although we are still far from the level of Slovakia, where the IT Fitness Test has established its position as a staple in the annual teaching process, it is clear that our commitment is paying off.

In order to examine the digital skills of Polish students in a cross-sectional manner, we have established partnerships at the regional level with municipal and provincial authorities. This way, we have reached students outside the big cities and outside the list of schools with a technical or IT profile as well. The results, however, are worrying. The young generation is not doing well in the digital world, even if we are talking about issues such as social media.

What is more, young people still cannot handle many of the IT tasks that their parents solve with ease. We can see some progress in this regard, but, unfortunately, it is still not enough. The reason may in fact be the technology itself, which currently is so intuitive that it somehow overrides the need for analytical thinking. Twenty years ago, when a computer suddenly refused to cooperate, you had to know how to seek solutions: for example, find access to the control panel, or change something in the BIOS. With today's smartphones, crashes are rare, and if they do occur, the user cannot always handle them on their own. So today's generation is used to being surrounded by technology, rather than finding solutions to any issues they may face.

Digital competences are an absolute must today, not only in a professional setting, but also in personal life. They are crucial for us in order to navigate a world becoming more digital every day. They allow us to differentiate real and fake information, protect us from cyberattacks and phishing attempts. The entire digital economy - the future of Poland, Europe and the world - is based on employees and their ability to manage the digital reality.

Therefore, the task of schools today should be to prepare children and young people for this very new digital reality. And for this we need a tailored program of teaching and properly preparing schools. Digital competences should not be taught only during IT lessons; this is an element that must be added into the syllabus of every single school subject. I hope that the conclusions of the IT Fitness Test will be taken into account by the Polish Ministry of Education in the process of building a new educational program.

Foreword – Hungary

Krizstina Tajthy
Secretary General of IVSZ
- Association of Digital Companies

The level of digitalization determines the competitiveness of a country. Our digital age demands digitally equipped children, since they will be the future end users, the future digital workforce, as well as the future ICT professionals.

We are pleased that the IT Fitness Test project has maintained its momentum for more than a decade, supplying valuable data on digital readiness. This data has enabled us to make informed decisions and allocate resources more efficiently on necessary actions and programs. We have also been able to track the progress of our digitalization efforts and identify areas of improvement.

Participating in such initiatives is particularly important to IVSZ, an advocacy organization for Hungary's digital companies.

Digital literacy opens doors to creativity, collaboration, and critical thinking. With access to tools such as research databases and multimedia applications, students can engage more deeply with their learning. Moreover, as technology becomes integral to most career paths, developing these skills early ensures they are better prepared for the demands of modern, digital workplaces.

However, the digital world comes with its own set of challenges, including cyberbullying, misinformation, and online privacy concerns. By learning digital skills, children are better equipped to recognize and mitigate these risks. They learn how to evaluate credible sources, protect their personal information, and engage in respectful online interactions. This ethical approach to technology use ensures responsible digital citizens.

As classrooms increasingly adopt technology for teaching and learning, understanding how to effectively use digital tools is no longer optional—it is fundamental. The assessment of teachers' digital skills draws attention to recognizing their importance in fostering a future-ready educational environment, supporting their professional development, and ensuring they are equipped to inspire and guide their students in a digitalized world.

Our goal is to improve the digital readiness of the next generation by identifying gaps and opportunities in the field of digital skills. As we understand the viewpoints of children and teachers, we can build an educational ecosystem that equips everyone with the skills and confidence they need to thrive in the digital age.

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CHARACTERISTICS AND IMPLEMENTATION OF THE IT FITNESS TEST

The test consisted of two parts:

Part I: **Profile**

In this section, respondents filled in their basic **personal information**. As the test was evaluated after the end of the testing period and the most successful participating schools were to be rewarded, the data collected in this part of the IT Fitness Test was used to identify them.

Part II: **Testing**

The **knowledge and competency** part of the test focused on practical skills and the actual testing of the respondents in different IT areas. Two types of tests were used, one with a view to checking the digital skills of regional school graduates aged 15 to 18 for continuing their studies at a higher level of education or in practice; the other for elementary schools. University students, teachers, and members of the public of all ages were also involved in the testing.

The priority target groups targeted by the testing were made up of:

a. pupils and graduates of elementary schools or eight-year grammar schools – aged between 14 and 16;

b. secondary-school and university students – over 15 years of age.

There were two types of questions in the test: questions with a choice of one answer out of four options, with just one being correct, and questions that had several sub-questions (statements) that had to be decided individually – for example, whether they were true/false or correct/incorrect, etc. (so-called cluster dichotomous items). The correct answer was the complete sequence of answers to the sub-statements, i.e. respondents scored a point if they chose the correct answer from the pair of options in all sub-questions.

In order to reduce the risk of advanced knowledge of test questions gained from respondents who had already completed the test, the test was generated randomly for each respondent using four previously created versions of each question.

Each respondent's score was continuously calculated during testing and converted into a percentage success rate at the end of the test, based upon which the respondent was assigned to one of five levels. At the end of the testing, the respondent was not only informed of their result in the form of their pass percentage, but was also shown the level they had achieved, together with an appropriate characterising written comment.

Certification testing in the thirteenth edition of the IT Fitness Test took place from 16 April 2024 to 31 October 2024. During this period, test respondents also received an electronic certificate and could compete for incentive prizes according to the rules and status of the competition as announced in each country. Testing was again available in the Ukrainian language in order to test the skills of Ukrainian-speaking pupils involved in the education systems of the Visegrad countries. The test could also be completed in English. After the certification testing was completed, the correct answers were made available to the respondents, and everyone could repeat the test several times in order to improve their IT skills.

A. Test characteristics for respondents over 15 years of age

The test is intended primarily for secondary school and university students and their teachers, allowing for the verification of skills that are focused on more practical advanced knowledge, skills, and competences of IT literacy. Computer literacy is now not only an important competitive advantage in the labour market but is becoming a necessity of everyday life. This test will give a school graduate a clear idea of whether they can work with computers and the Internet at the level commonly required by employers today. Teachers and school digital coordinators had the opportunity to manage student testing in their classroom and thus also use the results of the testing in the educational process.

Of course, the test can also help those who are employed or unemployed to identify areas where they need to improve their IT skills. After completing the test, all participants receive a certificate which, in addition to a short written evaluation, also includes a score of their mastery of the tested five areas as well as a recommendation on what they should work on improving.

The test tasks were divided into five main areas:

I. The Internet
II. Security and Computer Systems
III. Complex Tasks
IV. Office Tools
V. Collaborative Tools and Social Networks

Five items were included in each category of the test for respondents over 15 years of age, making a total of 25 items. Respondents were also given information about their success rate in each category after the testing had been completed.

The test was designed for high-school and college students and was aimed at finding out their level of:

- basic and advanced IT knowledge and skills,
- competences in creating and presenting information (office software, the Internet),
- practical skills in searching for and processing information (sources, searching and sorting, communication).

The assumed optimal time to solve the test was 60 minutes.

Table 1 shows the distribution of success levels and each level's corresponding comments.

B. Characteristics of the test for elementary schools

The test was designed for ninth graders and elementary school graduates. This means that it contained tasks that pupils finishing elementary school and graduates of elementary school should be able to solve, i.e. optimally for the age group of 14- to 16-year-olds.

The tasks were focused on different areas of computer science. The test was designed in such a way that the tasks tested mainly skills, specific subject competenc-

Percentage success rate	Level	Comment
95 – 100%	Excellent level of IT knowledge and skills	Congratulations on a great result! You are probably an IT professional or a very skilled IT user.
81 – 94%	Above-average level of IT knowledge and skills	Very good result. Your IT knowledge and skills are at a very good level, you are familiar with the IT world, and you can work effectively with IT tools.
51 – 80%	Average to above-average level of basic IT knowledge and skills	Your competence in IT basics is at an average to slightly above-average level. In order to use IT effectively, you should focus more on this area.
21 – 50%	Lower to average level of basic IT knowledge and skills	Your IT knowledge and skills are at a below-average to average level. You are on the right track, but you need to work on your IT skills and knowledge to become more IT-savvy.
0 – 20%	Low level of basic IT knowledge and skills	Unfortunately, the test demonstrated only a low level of basic IT knowledge and skills. For better orientation in the modern digital world, we recommend intensive training in this area.

Table 1 Characteristics of the different levels of test results for respondents over 15 years of age

es, but also some key competences. An attempt was made to avoid testing specific knowledge, facts, and encyclopaedic knowledge. Rather, the intention was to focus on testing the ability to analyse input information. Further, emphasis was placed on understanding context and drawing conclusions, problem solving, and critical thinking.

The test includes tasks at different, but chiefly higher cognitive levels (comprehension, application, analysis, and evaluation). Some tasks are more complex and it is important to take several steps to master them successfully (e.g. to open a table in a prepared file, understand the information contained in it, calculate the result using a simple formula, and evaluate it according to a given criterion; to find information on a web page and obtain the resulting information according to a given criterion; to analyse the properties of a certain process, estimate its rules, and predict the next behaviour, etc.).

The test was divided into five categories:

I. The Internet
II. Security and Computer Systems
III. Complex Tasks
IV. Office Tools
V. Collaborative Tools and Social Networks

Percentage success rate	Level	Comment
95 – 100%	Excellent level of basic IT knowledge and skills	Your basic IT knowledge and skills are at an excellent level, you are familiar with the world of IT, and you can work very well with IT tools. You are probably an IT enthusiast and are a very skilled IT user. You are excellently prepared for study at secondary school.
81 – 94%	Above-average level of basic IT knowledge and skills	Your basic IT knowledge and skills are above average, you are familiar with the IT world and can work effectively with IT tools. You only occasionally make mistakes in small details. You are very well prepared for secondary school.
51 – 80%	Average to above-average level of basic IT knowledge and skills	Your IT skills are at an average to slightly above-average level. You can navigate and use IT for work or play. However, you have room for improvement. You are ready for secondary school.
21 – 50%	Lower to average level of basic IT knowledge and skills	Your IT knowledge and skills are at a below-average to average level. You have some skills that you will use in everyday life and will need in further study. However, you still need to work on yourself. You are ready to continue your studies at secondary school.
0 – 20%	Low level of basic IT knowledge and skills	Unfortunately, the test showed only a low level of basic IT knowledge and skills. To better cope with your studies at secondary school and life in the modern world full of IT, we recommend intensive training in this area.

Table 2 Characteristics of the different levels of test results for elementary schools

Each part contained four tasks, meaning the test had 20 questions in total. The optimal time to complete the test was assumed to be 45-60 minutes.

An attempt was made to design the test to include tasks of varying difficulty, but to avoid extremely difficult and extremely easy tasks – as stated in testing theory, the optimal task difficulty is approximately from the interval of 20 to 80%. The goal of the test is to distribute the test takers well, therefore the test was designed so that the average success rate would be around 50 to 60 % (we could only estimate this as the tasks were not pre-piloted).

The aim of the test was to create tasks that are more interesting, more practice-based, and less directly focused on the context that is taught in elementary school. We believe that the test could also be insightful for teachers and show the appropriate direction of teaching in elementary school.

Table 2 shows the distribution of success levels and each level's corresponding comments.

I. EVALUATION OF THE TEST FOR ELEMENTARY SCHOOLS

Ia. Basic overview

	CZ	HU	PL	SK	UA
Total number of respondents	40,288	2,248	14,652	17,095	243
Respondents who completed the test for elementary schools aged 7 – 16	24,995	1,341	8,760	11,008	130
Average success rate, aged 7 – 16	47.36%	50.33%	45.11%	52.10%	42.42%
Average success rate, aged 7 – 13	44.52%	53.38%	43.46%	47.52%	-
Average success rate, aged 14 – 16	48.44%	50.16%	48.27%	54.85%	-
Sensitivity of the test	50.23%	56.68%	55.37%	59.33%	50.00%
Average teacher success rate	61.31%	74.53%	58.69%	65.63%	-
Test reliability (Cronbach's alpha)	0.70	0.76	0.75	0.79	0.69

Table 3 Basic psychometric parameters of the IT Fitness Test 2024 for elementary schools

Note: Please note that a comparison of average year-to-year test pass rates cannot reliably assess the evolution of the population's IT skills as both the test and the test takers change from year to year. Comparisons of test results with previous years should be seen as indicative only.

Ib. General data on respondents

The test was published on a publicly accessible portal and anyone who filled in the required data could participate. **The total number of respondents to the test for elementary schools was 74,526**. In the evaluation of the tests, data from 46,234 tests corresponding to the age group 7 to 16 years was used. In the primary sample, we did not evaluate: respondents due to age outside the interval < 7 to 16 > years; respondents who did not complete the test; teachers (they are evaluated separately); employee respondents; respondents who classified themselves as "Curious (other)".

A. Overview of respondents by age

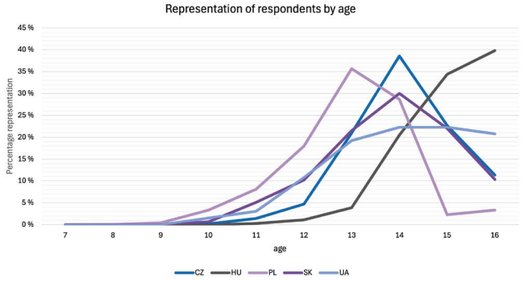


Chart 1 Breakdown of respondents by age group

In Hungary, the largest age group was 16-year-olds. In Poland, the largest age group was 13-year-olds. In the Czech Republic and Slovakia, the largest age group was 14-year-olds. Ukrainian pupils had a comparable representation in the age groups of 13, 14, 15, and 16-year-old pupils.

B. Representation of respondents by gender

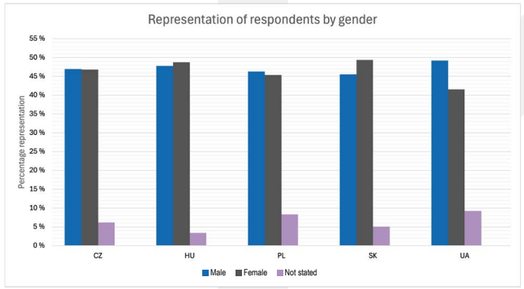


Chart 2 Representation of respondents by gender

Ukrainian pupils were predominantly male. In Poland, males were slightly predominant. In the Czech Republic, gender representation was comparable. Interestingly, in the Slovak Republic, female representation was predominant. The overall representation of males and females could be altered by data hidden in the unreported gender category.

Ic. Evaluation of the test part of the test for elementary schools

A. Raw test score

The raw score captures the results of testing by number of respondents and number of points earned.

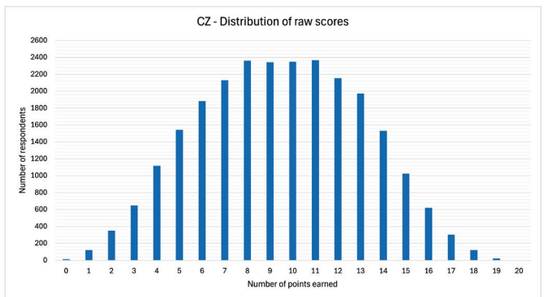


Chart 3 CZ – Distribution of pupils' raw scores

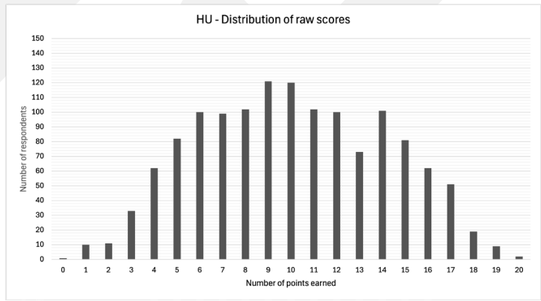


Chart 4 HU - Distribution of pupils' raw scores

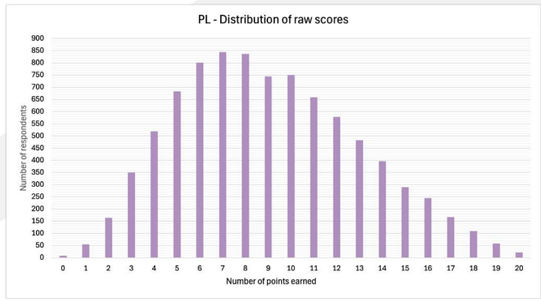


Chart 5 PL - Distribution of pupils' raw scores

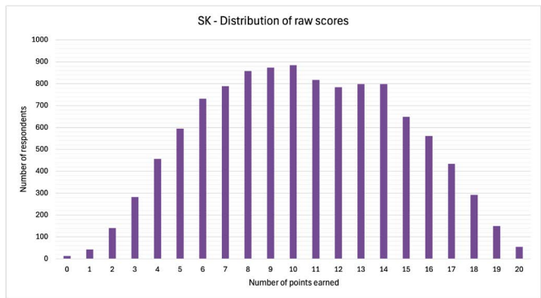


Chart 6 SK - Distribution of pupils' raw scores

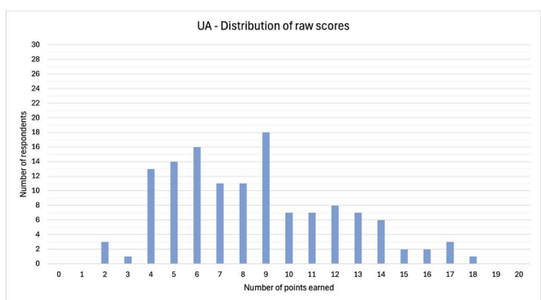


Chart 7 UA - Distribution of pupils' raw scores

Comparing the distribution of raw scores, we see slight differences between the countries. In the Slovak and Czech Republics, the peak of the distribution curve is shifted more towards the middle (compared to Poland), which means that respondents scored higher on the test. The sample of Ukrainian students was too small for statistical evaluation.

B. Success rate of respondents by age group

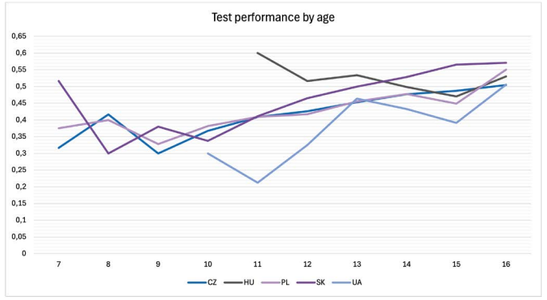


Chart 8 Pupils' performance on the test by age

In the Czech Republic and Poland, the pattern of respondents' success rates in the test by age is roughly similar, and even part of the graph almost overlaps. Interestingly, the success rate of the youngest participants is relatively higher. However, it is possible that this could reflect respondents' misrepresented age here. We see more pronounced fluctuations for Ukrainian pupils, which may also be due to the small number of respondents. Interestingly, in Hungary the success rate of the oldest respondents is lower compared to the younger age categories.

C. Respondent success rate by region

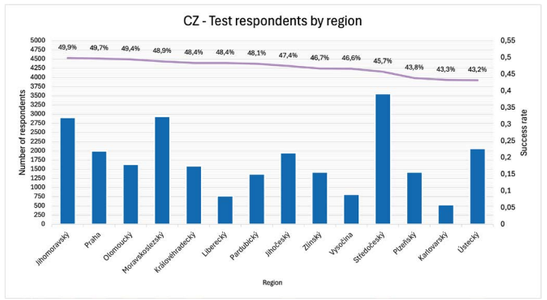


Chart 9 CZ - Representation of test respondents by region and their success rate

The highest success rate was obtained by pupils from the Jihomoravský Region. The lowest success rate was in the Ústecký Region. The difference between the regions with the highest and the lowest success rate is approximately 7 percentage points. From the graph it can be seen that a region's success rate does not depend on the number of respondents.

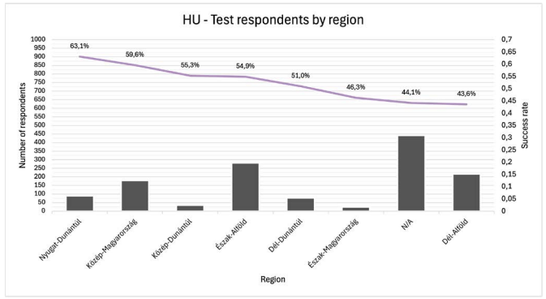


Chart 10 HU - Representation of test respondents by region and their success rate

The highest success rate was achieved by pupils from the region of Nyugat-Dunántúl (western Hungary). The lowest success rate was in Dél-Alföld (south-eastern Hungary). The difference between the highest and the lowest regions is significant - approximately 19 percentage points. It can be seen from the graph that a region's success rate is not dependent on the number of respondents, although it should be noted that in most regions turnout was very low. A large proportion of respondents did not indicate the region in which they live.

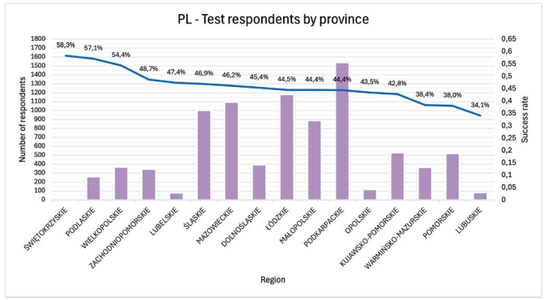


Chart 11 PL - Representation of test respondents by province and their success rate

The highest success rate was achieved by pupils from the PODLASKIE Province. Only three pupils from the province of ŚWIĘTOKRZYSKIE were tested, therefore this result cannot be considered statistically significant. The

lowest success rate was in the province of LUBUSKIE. The difference between the provinces with the highest and the lowest success rate is significant - more than 20 percentage points. It can be seen from the graph that a province's success rate does not depend on the number of respondents, although it should be noted that in most provinces there was very low turnout. The Subcarpathian Province had significantly better turnout.

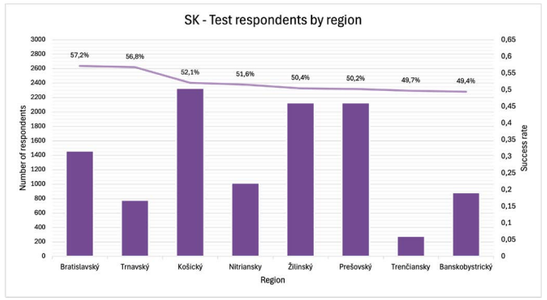


Chart 12 SK - Representation of test respondents by region and their success rate

The highest success rate was achieved by pupils from the Bratislavský Region. The second in order is the Trnavský Region. There is a slight jump in success rates between the first two regions and the following six regions. The lowest success rate was in the Banskobystrický Region. The difference between the regions with the highest and the lowest success rate is approximately 8 percentage points. From the graph it can be seen that a region's success rate does not depend on the number of respondents. The Košický Region had the highest participation rate.

D. Success rates in individual test categories

The test was divided into five thematic categories. Each category contained four test items. The following table shows the average success rate in each category:

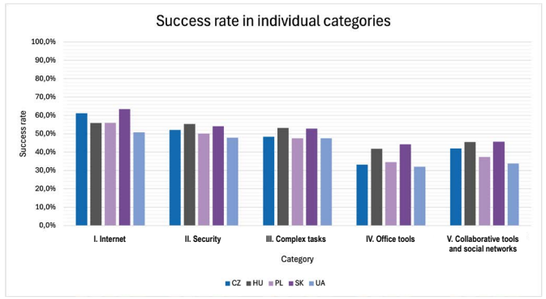


Chart 13 Success rate in each test category

The maximum differences (highest and lowest scores) in the countries' performance in each category of the test are at a level of 13 percentage points. The smallest differences between countries are in the Complex Tasks and Security categories. The highest differences between countries are in the area of The Internet. The highest success rates are in The Internet category, while respondents' lowest success rates are in the Office Tools and Collaborative Tools and Social Networks categories. Students from the Slovak Republic had the highest success rates in The Internet category. In the other categories, pupils from Hungary and Slovakia had the highest success rates.

	success rate				
Category	**CZ**	**HU**	**PL**	**SK**	**UA**
I. The Internet	61.1%	55.9%	56.0%	63.4%	50.8%
II. Security and Computer Systems	52.1%	55.4%	50.2%	54.2%	47.9%
III. Complex Tasks	48.4%	53.2%	47.5%	52.9%	47.5%
IV. Office Tools	33.2%	41.8%	34.6%	44.3%	32.1%
V. Collaborative Tools and Social Networks	42.0%	45.5%	37.4%	45.7%	33.8%

Table 4 Success rate in each test category

E. Success rates for individual test items

In the following table, the average success rate of all four variants of the test items is shown:

Role	CZ	HU	PL	SK	UA
I. 1 Artificial intelligence I	50.67%	49.59%	43.69%	54.17%	48.46%
I. 2 Tourist spot information	60.85%	57.72%	58.04%	64.68%	53.08%
I. 3 Train route	68.34%	58.09%	60.86%	67.99%	54.62%
I. 4 Tutorial	64.60%	58.24%	61.12%	66.89%	46.92%
II. 1 Troll	43.82%	51.30%	48.32%	47.67%	40.77%
II. 2 Threat	51.25%	55.26%	48.42%	57.35%	45.38%
II. 3 Advertisement	55.48%	56.23%	54.67%	53.06%	54.62%
II. 4 Find my device	57.93%	58.69%	49.22%	58.52%	50.77%
III. 1 Artificial intelligence II	50.51%	52.20%	49.46%	52.20%	48.46%
III. 2 Secret number	54.09%	51.75%	47.47%	57.30%	42.31%
III. 3 Vacuum cleaner I	57.17%	64.95%	55.58%	59.73%	56.92%
III. 4 Vacuum cleaner II	31.60%	43.70%	37.42%	42.25%	42.31%
IV. 1 Vocabulary	23.76%	26.92%	21.11%	26.41%	20.00%
IV. 2 Schedule	30.52%	30.50%	34.10%	37.92%	25.38%
IV. 3 Names I	54.06%	57.05%	35.30%	57.42%	46.15%
IV. 4 Names II	24.36%	52.57%	47.64%	55.62%	36.92%
V. 1 YouTube channel	54.22%	52.13%	40.25%	54.86%	38.46%
V. 2 Instagram	37.76%	36.91%	34.94%	41.88%	40.00%
V. 3 Chat	54.75%	70.17%	53.32%	63.86%	39.23%
V. 4 Drive	21.43%	22.67%	20.95%	22.01%	17.69%

Table 5 Percentage success rate in each test item

The following graph shows the success rate of pupils in the test for elementary schools aged 7-16 years for each test item.

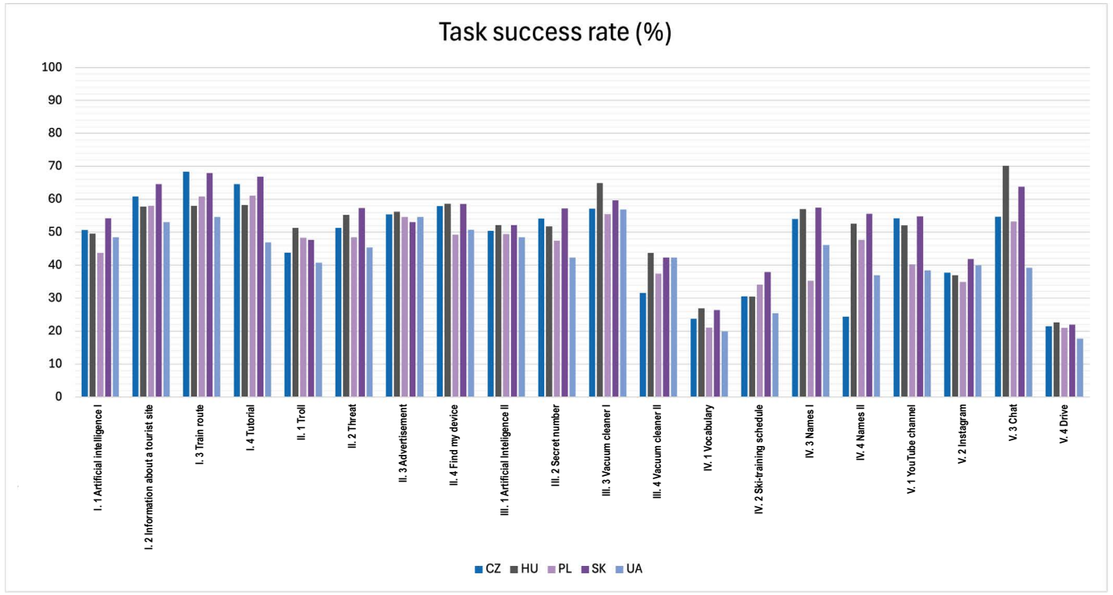


Chart 14 Success rate in individual test items

Pupils had the lowest success rates in the Drive task (category: Collaborative Tools and Social Networks) and in the Vocabulary task (category: Office Tools). The task with the highest success rate varies from country to country. In the Czech Republic and Slovakia, it was the Train Route task (category: The Internet). In Hungary it was the Chat task (category: Collaborative Tools and Social Networks), in Poland the Tutorial task (category: The Internet), and for Ukrainian pupils it was the Vacuum Cleaner I task (category: Complex Tasks).

There were also significant differences between countries in the success rates of individual tasks. The maximum difference between countries in individual tasks was approximately 31 percentage points – in the Names II task (category: Office Tools). This difference was between pupils from the Czech Republic and Slovakia. Compared to other countries, pupils from the Czech Republic had the lowest success rate in this task.

F. Sensitivity in individual categories

Task sensitivity is the ability to divide pupils into strong and weak. Task sensitivity is the difference in the average percentage success rate of the overall most-successful fifth and least-successful fifth of test takers.

We consider a task that has a sensitivity above 30% to have good sensitivity – that is, it distributes the tested sample of students well.

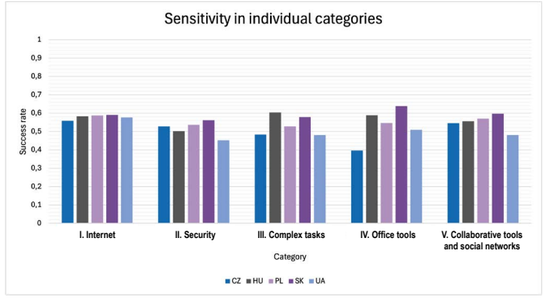


Chart 15 Sensitivity in individual categories of the test for elementary schools

Each of the categories divided the test sample very well. Sensitivity in The Internet category was roughly the same. It is not possible to clearly identify the area with the lowest sensitivity for all countries as the sensitivities in most areas also varied considerably from country to country.

In the Czech Republic, the Office Tools category had the lowest sensitivity, while The Internet category had the highest sensitivity. In the Slovak Republic, the Office Tools category had the highest sensitivity and the Security category the lowest. In Hungary, the highest sensitivity was in the Complex Tasks category and the lowest in the Security category. In Poland, the highest sensitivity was in The Internet category and the lowest in Security. The largest differences in sensitivity were in the Office Tools category.

G. Sensitivity of individual test items

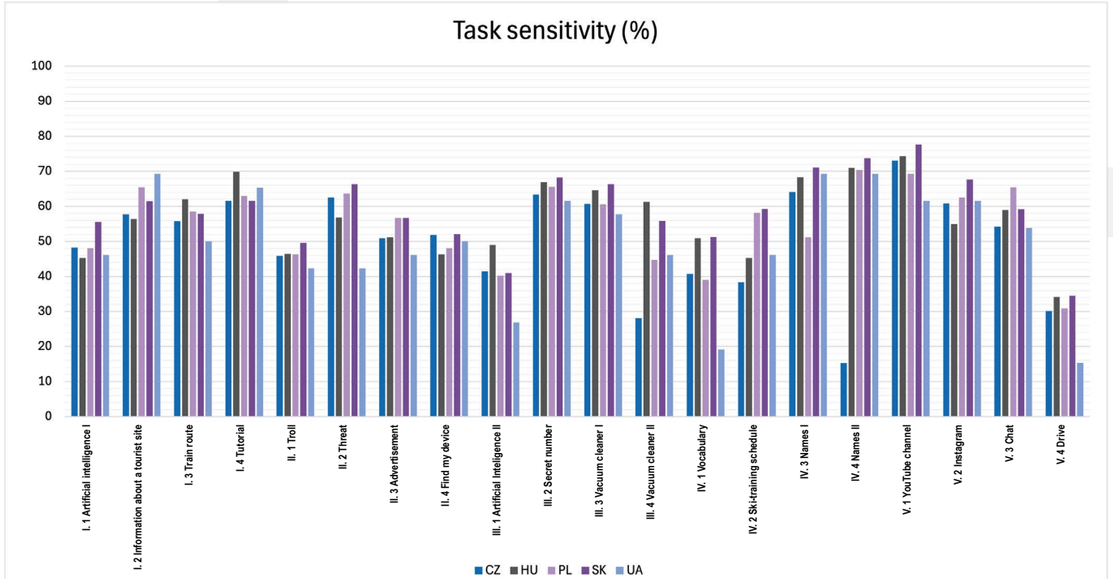


Chart 16 Sensitivity in individual tasks of the test for elementary school

There are significant differences in the sensitivity of individual tasks (compared to the categories). The lowest sensitivity was for the Names II task in the Czech Republic (in the other countries, it had excellent sensitivity – about 70%). The YouTube Channel task had the highest sensitivity (category: Collaborative Tools and Social Networks). In most cases, a task's lower sensitivity in a given country is due to, among other things, a lower success rate on the task.

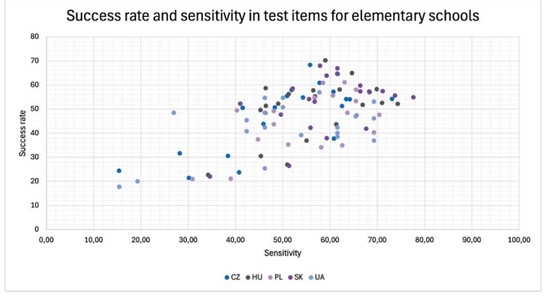


Chart 17 Success rate and sensitivity of individual tasks of the test for elementary schools

Three tasks had low sensitivity for pupils from Ukraine (Artificial intelligence II, Vocabulary, Drive), but it should be noted that the sample of pupils from Ukraine was small. In the Czech Republic, two tasks had low sensitivity (Names II and Vacuum Cleaner II). The other tasks had good sensitivity and thus distributed the test sample well. Interestingly, the Names II task had low sensitivity in the Czech Republic, but conversely, in the Slovak Republic it was the task with the second-highest sensitivity.

H Examples of some of the tasks in the test for elementary schools

Task with the highest success rate - I. The Internet - Train route

Success rate: CZ: 68.34%; HU: 58.09%; PL: 60.86%; SK: 67.99%; UA: 54.62%;
Sensitivity: CZ: 55.71%; HU: 61.98%; PL: 58.46%; SK: 57.85%; UA: 50.00%;

Task assignment:
At which station does the train EC 112 Silesia usually stop?
a) Bratislava hl. *b) Brno hl. n.*
c) Győr *d) Ostrava hl. n*

The task with the highest sensitivity - V. Collaborative Tools and Social Networks - YouTube channel

Success rate: CZ: 54.22%; HU: 52.13%; PL: 40.25%; SK: 54.86%; UA: 38.46%;
Sensitivity: CZ: 73.04%; HU: 74.29%; PL: 69.22%; SK: 77.58%; UA: 61.54%;

Task assignment:
There are several videos on programming with Scratch on the Scratch Team YouTube channel (the official channel of scratch.mit.edu). Find this channel on YouTube and decide whether the following statements are true or false.

(1) The channel contains a maximum of 80 videos.
TRUE / FALSE
(2) The channel was created more than five years ago.
TRUE / FALSE
(3) The video "Hide and Seek Game" is one of its ten most popular videos.
TRUE / FALSE

Id. School performance in the test for elementary schools in the Czech Republic

The test for elementary schools is designed for ninth graders and graduates of elementary school. This means that it contained tasks that pupils finishing elementary school and graduates of elementary school should be able to solve, i.e. optimally for the age group of 14- to 16-year-olds. In the following evaluation, we present the evaluation for the primary target group (aged 14 to 16). Pupils at this age may be in elementary school, eight-year grammar school, or even in the first year of secondary school. Of course, if a pupil is in the first year of secondary school, we cannot interpret the resulting achievement as a credit to that secondary school. However, in cases where a secondary school shows a good success rate for its first-year students, we can appreciate that the school has selected good elementary-school graduates and motivated them to participate in the testing. Such a school was involved in their education for less than one academic year, but obviously the previous school was more involved in their success.

810 schools with pupils aged 14 to 16 took part in the testing for elementary schools. Of these, 513 schools had at least 10 respondents aged 14 to 16. Of these schools, the table below shows the ranking of the most successful schools, including the school's percentile (above 90%), the school's average pass rate, the average age of pupils tested, and the number of pupils tested.

Ranking	School	School percentile	Average success rate	Average age	Number of students
1	Gymnázium, České Budějovice, Česká 64	100.00%	73.21%	14.9	53
2	Střední průmyslová škola, Česká Lípa, Havlíčkova 426, příspěvková organizace	99.80%	71.94%	16.0	31
3	Gymnázium, Praha 6, Nad Alejí 1952	99.60%	70.98%	14.3	41
4	Gymnázium Evolution, s.r.o.	99.40%	70.50%	14.2	20
5	Základní škola Vitae, s.r.o.	99.20%	70.36%	14.4	28
6	Gymnázium, obchodní akademie a jazyková škola s právem státní jazykové zkoušky Svitavy	99.00%	68.79%	15.0	29
7	Gymnázium a Jazyková škola s právem státní jazykové zkoušky Zlín	98.80%	67.95%	14.8	22
8	Gymnázium Bohumila Hrabala v Nymburce, příspěvková organizace	98.60%	67.69%	14.9	52
9	Gymnázium Karla Sladkovského, Praha 3, Sladkovského náměstí 8	98.40%	67.61%	15.3	23
10	Základní škola Frýdek-Místek, Československé armády 570	98.20%	67.50%	15.0	14
11	Gymnázium Josefa Kainara, Hlučín, příspěvková organizace	98.00%	67.39%	14.9	23
12	Gymnázium, Olomouc - Hejčín, Tomkova 45	97.80%	66.88%	14.2	96
13	Karlínská obchodní akademie	97.60%	66.67%	15.6	30
14	Mendelovo gymnázium, Opava, příspěvková organizace	97.40%	66.59%	16.0	22
15	Gymnázium, Broumov, Hradební 218	97.20%	66.58%	14.2	19
16	Gymnázium Jiřího Wolkera, Prostějov, Kollárova 3	97.00%	66.25%	15.1	74
17	Gymnázium, Střední pedagogická škola, Obchodní akademie a Jazyková škola s právem státní jazykové zkoušky Znojmo, příspěvková organizace	96.80%	66.11%	15.9	27
18	Gymnázium T. G. Masaryka Hustopeče, příspěvková organizace	96.60%	66.07%	14.4	14
19	Gymnázium, Teplice, Čs. dobrovolců 11, příspěvková organizace	96.40%	66.00%	14.0	20
20	Gymnázium, Hranice, Zborovská 293	96.20%	65.88%	14.2	17
21	Gymnázium Brno, Slovanské náměstí, příspěvková organizace	96.00%	65.65%	14.6	31
22	Obchodní akademie a vyšší odborná škola Brno, Kotlářská, příspěvková organizace	95.80%	65.44%	16.0	126
23	Gymnázium, Česká Třebová, Tyršovo náměstí 970	95.70%	65.00%	15.8	55
24	Lauderova mateřská škola, základní škola a gymnázium při Židovské obci v Praze	95.50%	64.67%	14.1	15
25	Gymnázium, Česká Lípa, Žitavská 2969, příspěvková organizace	95.30%	64.60%	14.6	25
26	Základní škola a mateřská škola Špindlerův Mlýn	95.10%	64.38%	14.4	16
27	Vyšší odborná škola, Obchodní akademie, Střední odborná škola a Jazyková škola s právem státní jazykové zkoušky EKONOM, o.p.s., Litoměřice, Palackého 730/1	94.90%	64.18%	15.2	61
28	Střední průmyslová škola a Vyšší odborná škola Brno, Sokolská, příspěvková organizace	94.70%	63.70%	15.4	27
29	Podkrušnohorské gymnázium, Most, příspěvková organizace	94.50%	63.65%	14.5	37
30	Základní škola Jindřichův Hradec V, Větrná 54	94.30%	63.45%	15.1	29
31	Wichterlovo gymnázium, Ostrava-Poruba, příspěvková organizace	94.10%	63.41%	15.2	110

32	Střední průmyslová škola strojní a elektrotechnická, České Budějovice, Dukelská 13	93.90%	63.10%	15.6	126
33	Základní škola Dřevohostice, okres Přerov, příspěvková organizace	93.70%	63.00%	14.1	10
34	Gymnázium Otokara Březiny a Střední odborná škola Telč	93.50%	62.59%	14.1	27
35	Gymnázium Dr. Josefa Pekaře, Mladá Boleslav, Palackého 211	93.30%	62.50%	14.2	18
36	Gymnázium, Dvůr Králové nad Labem, nám. Odboje 304	93.10%	62.45%	14.3	49
37	Střední průmyslová škola stavební, Hradec Králové, Pospíšilova tř. 787	92.90%	62.28%	16.0	125
38	Základní škola, Trutnov, V Domcích 488	92.70%	62.19%	14.3	16
39	Gymnázium a Střední průmyslová škola elektrotechniky a informatiky, Frenštát pod Radhoštěm, příspěvková organizace	92.50%	62.08%	14.6	77
40	Škola příběhem - církevní základní škola	92.30%	61.67%	15.5	15
41	Masarykovo gymnázium, Střední zdravotnická škola a Vyšší odborná škola zdravotnická Vsetín	92.10%	61.61%	14.1	24
42	Gymnázium a Střední odborná škola, Frýdek-Místek, Cihelní 410, příspěvková organizace	91.90%	61.43%	15.4	14
43	Polské gymnázium - Polskie Gimnazjum im. Juliusza Słowackiego, Český Těšín, příspěvková organizace	91.70%	61.36%	15.2	77
44	Základní škola Litomyšl, U Školek 1117, okres Svitavy	91.60%	61.35%	14.0	26
45	Vyšší odborná škola zdravotnická, Střední zdravotnická škola a Obchodní akademie, Trutnov	91.40%	61.32%	15.9	19
46	Gymnázium, Střední odborná škola a Vyšší odborná škola Ledeč nad Sázavou	91.20%	61.25%	15.2	12
47	Základní škola Be Open s.r.o.	91.00%	61.00%	14.3	10
48	Střední odborné učiliště a Střední odborná škola SČMSD, Znojmo, s.r.o.	90.80%	60.91%	15.3	22
49	Jiráskovo gymnázium, Náchod, Řezníčkova 451	90.60%	60.79%	14.1	38
50	Gymnázium, Soběslav, Dr. Edvarda Beneše 449/II	90.40%	60.67%	14.1	30
51	Základní škola Dobřichovice	90.20%	60.44%	14.4	113
52	Základní škola Galaxie s.r.o.	90.00%	60.00%	14.3	18

Table 6 Top-performing elementary schools – pupils aged 14 to 16 in the Czech Republic

Ie. School performance in the test for elementary schools in Hungary

57 schools with pupils aged 14 to 16 took part in the testing for elementary schools. Of these, 21 schools had at least 10 respondents aged 14 to 16. Of these schools, the table below shows the ranking of the 10 most successful schools, including the school's percentile, the school's average pass rate, the average age of pupils tested, and the number of pupils tested.

Ranking	School	School percentile	Average success rate	Average age	Number of students
1	Kőrösi Csoma Sándor Két Tanítási Nyelvű Baptista Gimnázium, Szentendrei út 83., Budapest III. kerület	100.00%	78.75%	14.8	12
2	Budapesti Műszaki SZC Bolyai János Műszaki Technikum és Kollégium, Váci út 21., Budapest XIII. kerület (1134)	95.00%	78.25%	15.9	20
3	Budapest II. Kerületi II. Rákóczi Ferenc Gimnázium, Keleti Károly utca 37., Budapest II. kerület	90.00%	74.23%	15.3	13
4	Budapesti Műszaki SZC Petrik Lajos Két Tanítási Nyelvű Technikum, Thököly út 48-54., Budapest	85.00%	70.00%	15.2	11
5	Sashegyi Arany János Általános Iskola és Gimnázium, Meredek utca 1., Budapest XII. kerület	80.00%	66.82%	15.9	11
6	Vas Megyei SZC Sárvári Tinódi Gimnázium, Móricz Zsigmond utca 2., Sárvár	75.00%	63.76%	15.9	85
7	Veszprémi SZC Bethlen István Közgazdasági és Közigazgatási Technikum, Csap utca 9., Veszprém	70.00%	61.00%	15.9	15
8	Szegedi SZC Gábor Dénes Technikum és Szakgimnázium, Mars tér 14., Szeged (6724)	65.00%	57.50%	16.0	22
9	Békéscsabai SZC Nemes Tihamér Technikum és Kollégium, Kazinczy utca 7., Békéscsaba (5600)	60.00%	56.43%	15.4	28
10	Debreceni Ady Endre Gimnázium, Liszt Ferenc utca 1., Debrecen	55.00%	56.02%	15.2	245

Table 7 Top-performing elementary schools – pupils aged 14 to 16 in Hungary

If. School performance in the test for elementary schools in Poland

379 schools with pupils aged 14 to 16 took part in the testing for elementary schools. Of these, 101 schools had at least 10 respondents aged 14 to 16. Of these schools, the table below shows the ranking of the most successful schools, including the school's percentile (above 70%), the school's average pass rate, the average age of pupils tested, and the number of pupils tested.

Ranking	School	School percentile	Average success rate	Average age	Number of students
1	VI LICEUM OGÓLNOKSZTAŁCĄCE IM. KRÓLA ZYGMUNTA AUGUSTA W BIAŁYMSTOKU, ul. Warszawska 8, Białystok	100.00%	73.93%	15.7	42
2	SZKOŁA PODSTAWOWA NR 11 IM. WŁADYSŁAWA BRONIEWSKIEGO W BĘDZINIE, ul. Władysława Broniewskiego 12, Będzin	99.00%	73.89%	14.0	18
3	I LICEUM OGÓLNOKSZTAŁCĄCE IM. ZYGMUNTA KRASIŃSKIEGO W CIECHANOWIE, ul. 17 Stycznia 66, Ciechanów	98.00%	70.00%	14.5	17
4	X LICEUM OGÓLNOKSZTAŁCĄCE IM. WISŁAWY SZYMBORSKIEJ W BIAŁYMSTOKU, ul. Stołeczna 6, Białystok	97.00%	67.57%	15.9	103
5	SZKOŁA PODSTAWOWA NR 7 IM. ERAZMA Z ROTTERDAMU, ul. Galileusza 14, Poznań-Grunwald	96.00%	63.75%	14.0	24
6	SZKOŁA PODSTAWOWA NR 85 IM. KS. KAZIMIERZA JANCARZA W KRAKOWIE, os. Osiedle Złotego Wieku 4, Kraków-Nowa Huta	95.00%	61.76%	14.1	17
7	SZKOŁA PODSTAWOWA NR 1 IM. ADAMA MICKIEWICZA W RZESZOWIE, ul. Bernardyńska 4, Rzeszów	94.00%	61.67%	14.2	12
8	SZKOŁA PODSTAWOWA NR 5 Z ODDZIAŁAMI INTEGRACYJNYMI IM. BOHATERÓW WESTERPLATTE W DZIERŻONIOWIE, os. Osiedle Błękitne 25, Dzierżoniów	93.00%	60.58%	14.0	26
9	CLXIII LICEUM OGÓLNOKSZTAŁCĄCE, ul. Klimatyczna 1, Warszawa	92.00%	60.50%	14.7	10
10	ZESPÓŁ SZKÓŁ SALEZJAŃSKICH IM. KSIĘDZA BOSKO, 34, Łódź	91.00%	59.62%	14.0	13
11	ZESPÓŁ SZKÓŁ MUZYCZNYCH NR 1 IM. KAROLA SZYMANOWSKIEGO, ul. Fryderyka Szopena 32, Rzeszów	90.00%	59.38%	14.1	16
12	SZKOŁA PODSTAWOWA NR 10 IM. KS. J.TWARDOWSKIEGO W CZECHOWICACH-DZIEDZICACH, ul. Polna 33, Czechowice-Dziedzice	89.00%	58.50%	14.0	20
13	SZKOŁA PODSTAWOWA NR 293 IM. JANA KOCHANOWSKIEGO, ul. Jana Kochanowskiego 8, Warszawa	88.00%	56.88%	14.1	32
14	SZKOŁA PODSTAWOWA NR 67 Z ODDZIAŁAMI DWUJĘZYCZNYMI I SPORTOWYMI, os. Stefana Batorego 101, Poznań-Stare Miasto	87.00%	56.79%	14.0	14
15	SZKOŁA PODSTAWOWA NR 28 IM. PŁK. ŁUKASZA CIEPLIŃSKIEGO, ul. Ignacego Solarza 12, Rzeszów	86.00%	56.76%	14.0	17
16	SZKOŁA PODSTAWOWA IM. STEFANA ŻEROMSKIEGO W OGRODZIEŃCU, ul. Kościuszki 67, Ogrodzieniec	85.00%	55.79%	14.0	19
17	SZKOŁA PODSTAWOWA NR 34 IM. WOJSKA POLSKIEGO, os. Bolesława Śmiałego 107, Poznań-Stare Miasto	84.00%	55.76%	14.1	33
18	SZKOŁA PODSTAWOWA NR 53 IM. PAWŁA EDMUNDA STRZELECKIEGO, ul. Głuszyna 187, Poznań-Nowe Miasto	83.00%	55.75%	14.1	20
19	SZKOŁA PODSTAWOWA NR 1 IM. KLEMENTYNY HOFFMANOWEJ W TARNOWIE, ul. Władysława Reymonta 30, Tarnów	82.00%	55.24%	14.0	42
20	SZKOŁA PODSTAWOWA NR 22 Z ODDZIAŁAMI INTEGRACYJNYMI IM. RAFAŁA POMORSKIEGO, ul. Harcerska 25, Tychy	81.00%	55.00%	14.0	36
21	SZKOŁA PODSTAWOWA NR 137 IM. PROF. ALEKSANDRA KAMIŃSKIEGO, ul. Florecistów 3b, Łódź-Polesie	80.00%	54.50%	14.0	30
22	SZKOŁA PODSTAWOWA Z ODDZIAŁAMI INTEGRACYJNYMI NR 247 IM. KAZIMIERZA LISIECKIEGO "DZIADKA", ul. Wrzeciono 9, Warszawa	79.00%	54.00%	14.2	10
23	SZKOŁA PODSTAWOWA NR 14 IM.STEFANA JARACZA W TARNOWIE, ul. Krzyska 118, Tarnów	78.00%	53.50%	14.0	10
24	SZKOŁA PODSTAWOWA NR 133 IM. STEFANA CZARNIECKIEGO, ul. Antoniego Fontany 3, Warszawa	77.00%	52.25%	14.1	20
25	SZKOŁA PODSTAWOWA NR 2 IM. MIKOŁAJA KOPERNIKA W KARTUZACH, ul. Wzgórze Wolności 1, Kartuzy	76.00%	51.82%	14.0	22
26	SZKOŁA PODSTAWOWA NR 35 IM. MARIANA PIECHALA, ul. Generała Tadeusza Kutrzeby 4, Łódź-Bałuty	75.00%	51.54%	14.2	13
27	SZKOŁA PODSTAWOWA NR 5 IM. SZARYCH SZEREGÓW, ul. Tadeusza Kościuszki 21, Bielsk Podlaski	74.00%	51.36%	14.1	11
28	SZKOŁA PODSTAWOWA NR 209 IM. HANKI ORDONÓWNY, al. Aleja Władysława Reymonta 25, Warszawa	73.00%	51.07%	14.0	14
29	PUBLICZNA SZKOŁA PODSTAWOWA NR 9 IM. JURIJA GAGARINA W KĘDZIERZYNIE-KOŹLU, ul. Jurija Gagarina 3, Kędzierzyn-Koźle	72.00%	51.03%	14.0	29

30	SZKOŁA PODSTAWOWA NR 2 IM. POLSKICH OLIMPIJCZYKÓW, ul. Żytnia 47, Włocławek	71.00%	50.25%	14.1	20
31	III LICEUM OGÓLNOKSZTAŁCĄCE IM.ADAMA MICKIEWICZA W TARNOWIE, ul. Kazimierza Brodzińskiego 6, Tarnów	70.00%	50.14%	15.5	37

Table 8 Top-performing elementary schools – pupils aged 14 to 16 in Poland

Ig. School performance in the test for elementary schools in the Slovak Republic

446 schools with pupils aged 14 to 16 took part in the testing for elementary schools. Of these, 195 schools had at least 10 respondents aged 14 to 16. Of these schools, the table below shows the ranking of the most successful schools, including the school's percentile (above 85%), the school's average pass rate, the average age of pupils tested, and the number of pupils tested. The table shows mainly eight-year grammar and secondary schools, with more elementary schools in the lower (undisclosed) ranks in this comparison.

Ranking	School	School percentile	Average success rate	Average age	Number of students
1.	Základná škola Zoltána Kodálya s vyučovacím jazykom maďarským - Kodály Zoltán Alapiskola, Švermova 8, Galanta	100.00%	89.09%	14.27	11
2.	Gymnázium Ladislava Dúbravu, Smetanov háj 285/8, Dunajská Streda	99.40%	85.83%	14.83	18
3.	Gymnázium Leonarda Stöckela, Jiráskova 12, Bardejov	98.90%	84.47%	15.83	47
4.	Gymnázium Svätej Rodiny, ako organizačná zložka Spojenej školy Svätej Rodiny, Gercenova 10, Bratislava-Petržalka	98.40%	81.90%	14.59	29
5.	Gymnázium sv. Uršule ako organizačná zložka Spojenej školy sv. Uršule, Nedbalova 4, Bratislava-Staré Mesto	97.90%	81.44%	14.94	52
6.	Gymnázium, Varšavská cesta 1, Žilina	97.40%	81.01%	14.99	84
7.	Gymnázium Martina Hattalu, Železničiarov 278, Trstená	96.90%	80.80%	15.26	50
8.	Gymnázium Federica Garcíu Lorcu, Hronská 3, Bratislava-Podunajské Biskupice	96.30%	80.45%	14.36	11
9.	Gymnázium Vojtecha Mihálika, Kostolná 119/8, Sereď	95.80%	80.00%	14.83	18
10.	Gymnázium Antona Bernoláka, Lichnerova 69, Senec	95.30%	79.74%	15.00	19
11.	Obchodná akadémia, F. Madvu 2, Prievidza	94.80%	79.17%	15.75	12
12.	Gymnázium Jána Adama Raymana, Mudroňova 20, Prešov	94.30%	79.09%	15.73	11
13.	1. súkromné gymnázium v Bratislave, Bajkalská 20, Bratislava-Ružinov	93.80%	78.71%	14.23	31
14.	Gymnázium, Školská 234/8, Považská Bystrica	93.20%	77.67%	14.93	15
15.	Gymnázium sv. Tomáša Akvinského, Zbrojničná 3, Košice-Staré Mesto	92.70%	77.00%	14.43	35
16.	Gymnázium, Alejová 1, Košice-Juh	92.20%	76.85%	14.28	65
17.	Gymnázium Angely Merici, Hviezdoslavova 10, Trnava	91.70%	76.74%	14.87	23
18.	Základná škola, Moskovská 1, Michalovce	91.20%	76.67%	14.38	21
19.	Obchodná akadémia, Lúčna 4, Lučenec	90.70%	76.50%	15.10	10
20.	Gymnázium, Kukučínova 4239/1, Poprad	90.20%	76.43%	15.14	49
21.	Súkromná základná škola pre žiakov so všeobecným intelektovým nadaním, Bajkalská 20, Bratislava-Ružinov	89.60%	75.42%	14.25	12
22.	Gymnázium Antona Bernoláka, Ul. Mieru 307/23, Námestovo	89.10%	75.41%	14.63	19
23.	Základná škola s materskou školou Milana Hodžu, Škarniclova 1, Bratislava-Staré Mesto	88.60%	74.86%	14.30	37
24.	Obchodná akadémia, Watsonova 61, Košice-Sever	88.10%	73.33%	15.40	15
25.	Spojená škola, Dominika Tatarku 4666/7, Poprad	87.60%	72.80%	15.39	100
26.	Gymnázium Andreja Vrábla, Mierová 5, Levice	87.10%	72.61%	14.64	44
27.	Gymnázium, Komenského 13, Lipany	86.50%	70.74%	14.07	27
28.	Základná škola Pavla Horova, Kpt. Nálepku 16, Michalovce	86.00%	70.54%	14.65	37
29.	Gymnázium, Ľ. Štúra 26, Michalovce	85.50%	70.45%	15.00	11
30.	Gymnázium Andreja Kmeťa, Kolpašská 1738/9, Banská Štiavnica	85.00%	70.44%	15.21	57

Table 9 Top-performing schools – pupils aged 14 to 16 in the Slovak Republic

In order to have a better idea of the success rate of just elementary schools, the following table presents the ranking of the most successful elementary schools (omitting eight-year grammar schools) in the 14-16 age group. Most of the schools cannot be found in the previous table because they did not have an overall ranking percentile above the 85th percentile.

Ranking	School	School percentile	Average success rate	Average age	Number of students
1.	Základná škola Zoltána Kodálya s vyučovacím jazykom maďarským - Kodály Zoltán Alapiskola, Švermova 8, Galanta	89.09%	14.27	11	11
2.	Základná škola, Moskovská 1, Michalovce	76.67%	14.38	21	18
3.	Súkromná základná škola pre žiakov so všeobecným intelektovým nadaním, Bajkalská 20, Bratislava-Ružinov	75.42%	14.25	12	47
4.	Základná škola s materskou školou Milana Hodžu, Škarniclova 1, Bratislava-Staré Mesto	74.86%	14.30	37	29
5.	Základná škola Pavla Horova, Kpt. Nálepku 16, Michalovce	70.54%	14.65	37	52
6.	Súkromná základná škola, Gorkého 4, Skalica	69.72%	14.50	18	84
7.	Základná škola Gejzu Dusíka, Mierová 1454/10, Galanta	62.50%	14.80	20	50
8.	Základná škola s materskou školou kráľa Svätopluka, Mierové nám. 10, Šintava	62.32%	14.86	28	19
9.	Základná škola s materskou školou Petra Pázmánya s vyučovacím jazykom maďarským - Pázmány Péter Alapiskola és Óvoda, P. Pázmaňa 48, Šaľa	61.31%	14.48	25	37
10.	Základná škola, Sv. Michala 42, Levice	60.95%	14.58	84	15
11.	Základná škola, Sokolíkova 2, Bratislava-Dúbravka	60.34%	15.14	29	100
12.	Základná škola Andreja Kmeťa, M. R. Štefánika 34, Levice	60.00%	14.20	41	
13.	Základná škola, Školská 257, Dunajská Lužná	59.93%	14.75	73	
14.	Základná škola, Bernolákova 16, Košice-Západ	59.21%	14.63	19	
15.	GYMNÁZIUM a Základná škola s vyučovacím jazykom maďarským - Márai Sándor Magyar Tanítási Nyelvű Gimnázium és Alapiskola, Kuzmányho 6, Košice-Staré Mesto	58.70%	15.15	46	

Table 10 Top-performing elementary schools – pupils aged 14 to 16, excluding eight-year grammar schools and secondary schools in the Slovak Republic

Ih. Teacher performance in the test for elementary schools in the Slovak Republic

The test for elementary schools was taken by 371 respondents who indicated that they were teachers. The average success rate of teachers in the test for elementary schools was 65.63%.

	2024		2023	
Region	average teacher success rate	number of teachers tested	average teacher success rate	number of teachers tested
Banskobystrický	71.90%	29	73.33%	27
Trenčiansky	71.85%	27	72.50%	24
Nitriansky	68.77%	73	74.79%	47
Košický	66.69%	59	64.46%	92
Žilinský	65.85%	47	72.12%	106
Trnavský	63.10%	21	70.57%	35
Bratislavský	62.73%	44	79.10%	39
Prešovský	59.01%	71	76.27%	55

Table 11 Teacher performance on the test for elementary schools by region

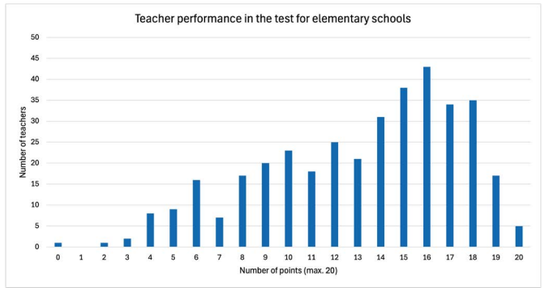


Chart 18 Teacher performance in the test for elementary schools

Ii. Interpretation of results and recommendations for elementary schools

Each year the test developers aim to create a test that can distinguish respondents with good knowledge and skills from respondents with poor knowledge and skills. A test that discriminates well between respondents should have a success rate of approximately 50 to 60%. The test items are not pre-piloted, which means that estimating their parameters is very difficult. The test's success rate in Slovakia for the primary age group of 14 to 16 is 54.85% (it was 61.51% in 2023 and 58.72% in 2022), which means that it is almost in the middle of the required interval. The success rate in the Czech Republic – 48.4%, Hungary – 50.16%, Poland – 48.27% (in the previous year the success rate in the Czech Republic – 54.96%, Hungary – 50.42%, Poland – 49.93%). Ukrainian pupils had a success rate of 42.42% in the age group of 7 to 16 (there was a low number of pupils tested in the primary group). The success rate in the test in the Slovak and Czech Republics decreased by about 6.5 percentage points compared to the previous year, in the Slovak Republic it decreased by 3.87 percentage points compared to 2022. In Hungary and Poland, the success rates are almost the same as in the previous year, or at the level of statistical error. At the same time, however, we must point out that no firm conclusions can be drawn from such a simple comparison.

This year again, the test discriminated very well between respondents' scores. The overall sensitivity (discriminatory power of the test) ranged from 50.23% to 59.33% across countries, which is very good, although it has decreased slightly year-on-year. Sensitivity is also enhanced by a good mix of tasks with appropriate difficulty. The test did not contain very easy tasks, and two tasks were (according to the results) on the borderline of very difficult (which is difficult to estimate without piloting the tasks).

The Internet category tends to have **the best results** in the long term, and that was again the case this year. The second most successful category was Security and Computer Systems.

Pupils from the Slovak Republic achieved the best results in the tasks in The Internet category in comparison with the other countries. Pupils from Ukraine achieved a weaker result compared to other countries. Pupils in Poland had the weakest results in this category (also when compared to other countries) in the task focused on artificial intelligence tools. Pupils from the Slovak and Czech Republics performed best in the task on finding train routes.

Pupils from Poland and Hungary did best in searching for videos and finding information in them. Overall, pupils are good at searching for information. They are better at searching for simpler information than for information that is in a structured form, where it must be compared or evaluated.

The **Security and Computer Systems** category was the second most successful category in each country. Pupils achieved an average score in the range of 48 to 55%.

Hungarian pupils as well as the weakest pupils from Ukraine and Poland have the best results in this category. The most similar results among the countries tested were achieved by pupils in the Advertisement task (for which it was necessary to judge whether an advertisement was fraudulent). Pupils performed least well in the Troll task, where they had to decide which behavioural characteristics are typical of an internet troll and how they can avoid them, even with the ability to access information sources for help. The task was not about knowledge of the concept itself, but indirectly about whether they could identify such a person and react appropriately to them in cyberspace.

Pupils have a relatively good understanding of what the safety warnings they commonly encounter mean. They have gaps in less-standard situations, e.g. how to properly protect sensitive data and lost/stolen equipment. More theoretical knowledge prevails, but if they have to react appropriately to a situation or use some new knowledge to which a source is attached and relate the two to each other and come to a conclusion, their results are weaker.

In the **Complex Tasks** category, the average success rate across countries ranges from 47.5 to 53.2%. The area included two tasks of an algorithmic character, and one task focused on artificial intelligence tools. Pupils from the Czech Republic, Poland and Ukraine had similar success rates; in comparison pupils from Hungary and the Slovak Republic had success rates approximately 5 percentage points higher. Pupils in all tested countries have more significant deficiencies in solving complex problems of an algorithmic nature. Pupils in the Czech Republic had significantly more difficulties with the Vacuum Cleaner II task (a task of an algorithmic character). **Pupils are deficient in solving problems with higher cognitive demand where it is necessary to solve the problem at a complex level (also algorithmic problems). When solving, they prefer answers resulting from a quick decision. They are less willing to investigate the properties of the system in more detail, to doubt the correctness of the result, and then to verify the quickly offered answers.**

The **Office Tools** area was also one of the lowest-performing areas in this year's testing. In a comparison of countries, Slovak and Hungarian pupils achieved the highest success rates. Pupils from the Czech Republic, Poland, and Ukraine shared similar success rates. The Names II task saw the differences between countries be most pronounced from the entire test. The difference between pupils from the Slovak and Czech Republics was as high as 31 percentage points. In this task it was necessary to identify which data from the table was the source for the graph produced. The task in the text editor, Vocabulary, in which it was necessary to find out directly in the document which settings / tools had been applied to a given part of the text, also had a low success rate. For example, pupils cannot tell whether automatic numbering has been used in a given text; they only decide based on the visual impression.

In the area of **Collaborative Tools and Social Networks**, all countries had the second-lowest success rate (compared to other areas). In the country comparison, pupils from Ukraine had the lowest success rate in this area, followed by pupils from Poland (the difference compared to the most successful country is almost 12 percentage points). There were significant differences between countries in the Chat task, where pupils had to understand a picture of the online communication between several people. Here, pupils from Ukraine performed least well, and conversely, pupils from Hungary performed best. The difference in their performance was almost 31 percentage points. There were also larger differences between countries in the YouTube Channel task, where pupils from Poland and Ukraine fared less well compared to other countries. Pupils from all countries had very low success rates in the Drive task, which focused on content sharing and its structure in the cloud. Pupils did not perceive a difference in structure between a folder and a file. They appear to focus more on trial-and-error verification but have no real context and do not know the meaning of the information displayed.

II. EVALUATION OF THE TEST FOR RESPONDENTS OVER 15 YEARS OF AGE

IIa. Basic overview

	CZ	HU	PL	SK	UA
Total number of respondents	42,930	1,532	25,851	39,265	105
Average success rate (all)	**39.74%**	**36.25%**	**36.03%**	**45.38%**	**36.10%***
Average student success rate	38.81%	34.60%	35.83%	44.52%	33.59%*
Average teacher success rate	56.22%	52.58%*	46.81%	54.08%	-
Average employee success rate	-*	-*	-*	-*	-
Sensitivity of the test	53.12%	51.89%	55.95%	60.58%	58.25%*
Test reliability (Cronbach's alpha)	0.79	0.79	0.83	0.84	0.85*

Table 12 Basic psychometric parameters of the test for respondents over 15 years of age
* - data has been evaluated from a small sample of respondents

IIb. General data on respondents

As the test was published on a publicly accessible portal, anyone who filled in the required data could take part. The **total number of respondents to the test was 109,683.** This evaluation excludes respondents who were under the age of 15 or used an obviously false profile and excludes respondents whose sessions expired (began the test but did not submit it within the time limit). In the following sections, we offer an evaluation based on the data from 86,843 respondents according to different criteria.

A. Overview of respondents by age group

Although the test was designed primarily for high school and university students, respondents included both younger and older age groups. Their representation is shown in the next graph.

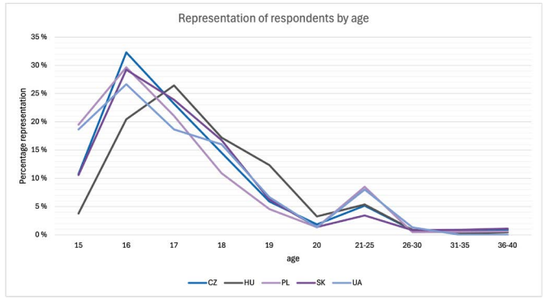


Chart 19 Representation of respondents age categories in the test

As can be seen from the graph, the strongest age group was made up of respondents aged 15-18, which corresponds to high school students. In Hungary, 17-year-old students had the largest representation and participation decreased with increasing age. In the remaining countries, 16-year-old students had the highest representation.

B. Representation of respondents by gender

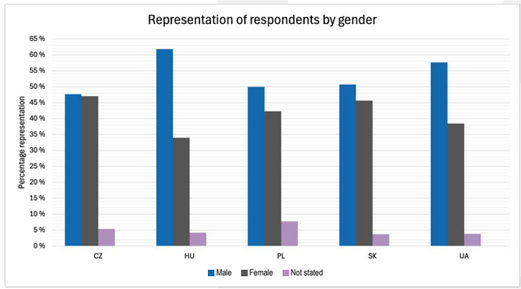


Chart 20 Representation of test respondents by gender

The Czech Republic has almost equal representation by men and women in the test. In contrast, Hungary and students from Ukraine are significantly over-represented by males. In Poland and the Slovak Republic, males are slightly over-represented. In Hungary, the difference in male representation is the highest – up to almost 28 percentage points.

IIc. Evaluation of the test part of the test for respondents over 15 years of age

A. Raw test score

The raw score shows how many respondents achieved each total score.

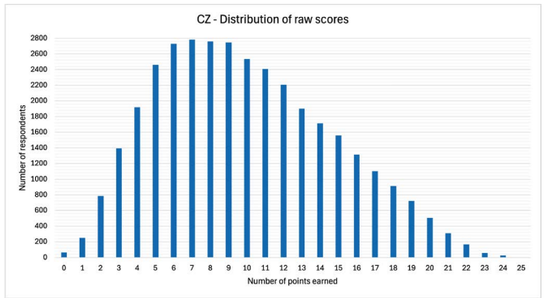


Chart 21 CZ - Distribution of respondents' raw scores

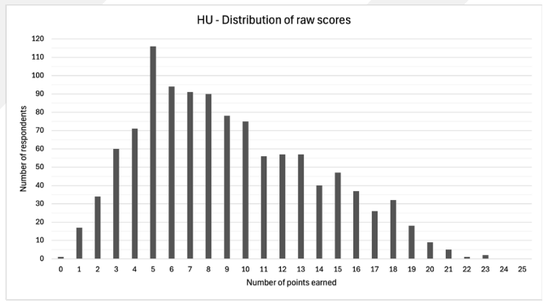


Chart 22 HU - Distribution of respondents' raw scores

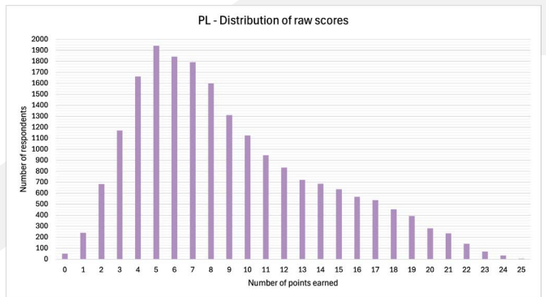


Chart 23 PL - Distribution of respondents' raw scores

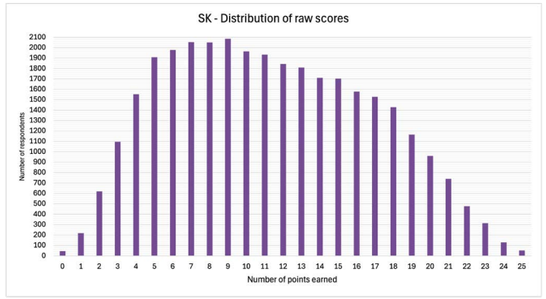


Chart 24 SK - Distribution of respondents' raw scores

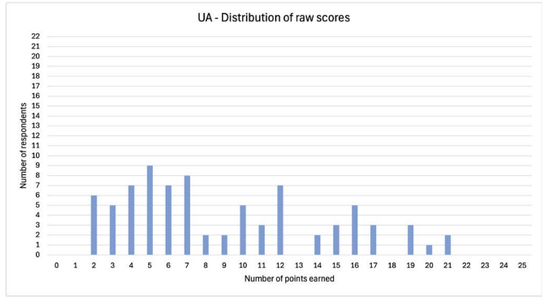


Chart 25 UA - Distribution of respondents' raw scores

Comparing the distribution of raw scores, we see differences between the countries. In Slovakia the peak of the distribution is at 9 points, in Poland and Hungary at 5 points, and in the Czech Republic at 7 points. For Ukrainian pupils the number of respondents is small. Compared to last year, the distribution has shifted more to the left and the success rate in the test was lower.

B. Success rate of respondents by age group

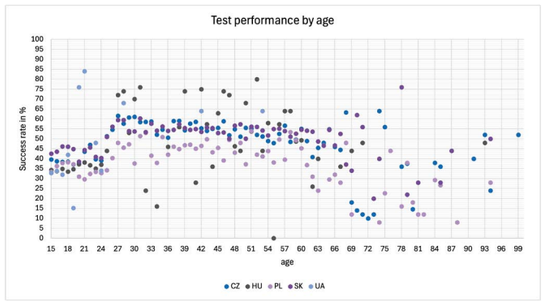


Chart 26 Test performance of respondents by age

The number of respondents over the age of 20 is small in each age category, so no relevant conclusions can be drawn from the data. Most respondents are under 20 years of age.

C. Respondent success rate by region

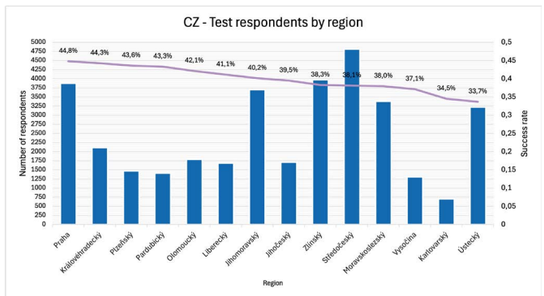


Chart 27 CZ - Representation of test respondents by region and their success rate

The highest success rate was achieved by respondents in Praha – 44.8% and the lowest in the Ústecký Region – 33.7%. The differences in success rates are significant, reaching approximately 11 percentage points. Respondents in the Středočeský Region had the highest representation in the testing. The Karlovarský Region has the lowest representation. It can be seen from the graph that the success rate in a region does not depend on the number of respondents.

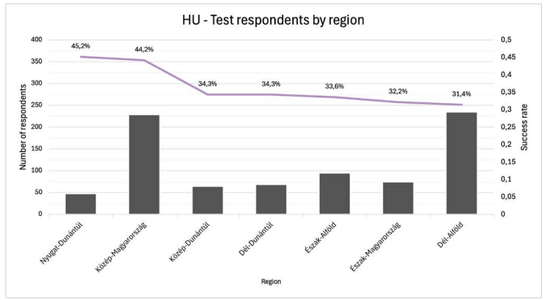


Chart 28 HU - Representation of test respondents by region and their success rate

The highest success rate was achieved by respondents in the region of Nyugat-Dunántúl – 45.2%. In the region of Dél-Alföld (south-eastern Hungary), the success rate was the lowest – 31.4%. It should be noted that in some regions there was a very small sample of respondents tested. The differences in success rates are even more pronounced than in the Czech Republic, amounting to about 14 percentage points. Respondents from the Dél-Alföld region had the highest representation in the testing. The region of Nyugat-Dunántúl had the lowest representation.

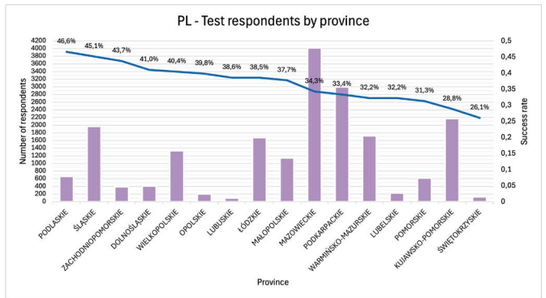


Chart 29 PL - Representation of test respondents by province and their success rate

In Poland, the highest success rate was achieved by students from the province of PODLASKIE – 46.6%. The lowest success rate was in the province of ŚWIĘTOKRZYSKIE – 26.1%. The difference is very significant – up to 20 percentage points. It should be noted that in some provinces there was a very small sample of respondents tested. Province of MAZOWIECKIE had the highest number of respondents.

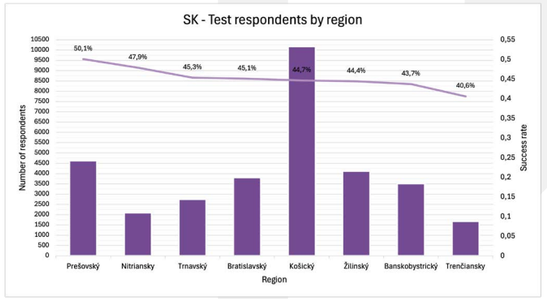


Chart 30 SK - Representation of test respondents by region and their success rate

Respondents from the Košický Region had the highest representation in the testing, just like last year. The lowest representation this year is again from the Trenčiansky Region, although it is not the smallest region in terms of population. The highest success rate this year was once again achieved by respondents in the Prešovský Region – 50.1%, and the lowest in the Trenčiansky Region – 40.6%. Compared to the other countries, Slovakia and the Czech Republic have the smallest regional differences in success rates – around 10 percentage points.

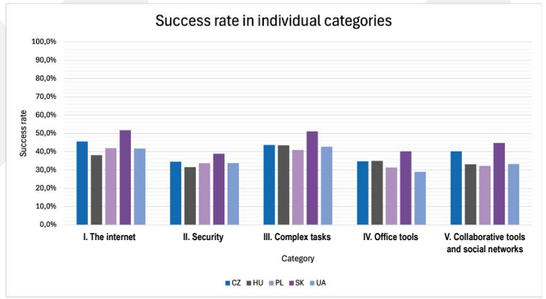


Chart 31 Success rate in each test category

The highest success rates are in The Internet category (in the Czech Republic, Slovakia, and Poland). In Hungary and for pupils from Ukraine, the highest success rates were in the Complex Tasks category. The lowest success rates were achieved by respondents from the Czech Republic, Slovakia and Hungary in the Security category. A common category with low success rates was Office Tools (in Poland and for pupils from Ukraine, this category had the lowest success rate).

The maximum differences (highest and lowest scores) in the countries' performance in each category of the test are at 13 percentage points. The smallest differences between countries are in the Security category (as they were the previous year). The highest differences between the countries are in The Internet category and the Collaborative Tools and Social Networks category (the same as in the previous year of testing).

D. Success rates in individual test categories

The test was divided into five thematic categories. Each category contained five test items. The following table shows the average success rate in each category:

	success rate				
Category	**CZ**	**HU**	**PL**	**SK**	**UA**
I. The Internet	45.60%	38.11%	41.91%	51.75%	41.75%
II. Security and Computer Systems	34.56%	31.54%	33.63%	38.93%	33.75%
III. Complex Tasks	43.69%	43.46%	41.01%	51.13%	42.75%
IV. Office Tools	34.70%	34.99%	31.40%	40.25%	29.00%
V. Collaborative Tools and Social Networks	40.15%	33.16%	32.21%	44.84%	33.25%

Table 13 Success rate in each test category

E. Success rates for individual test items

Another parameter that we were interested in when evaluating the test results was the success rate of the individual test tasks.

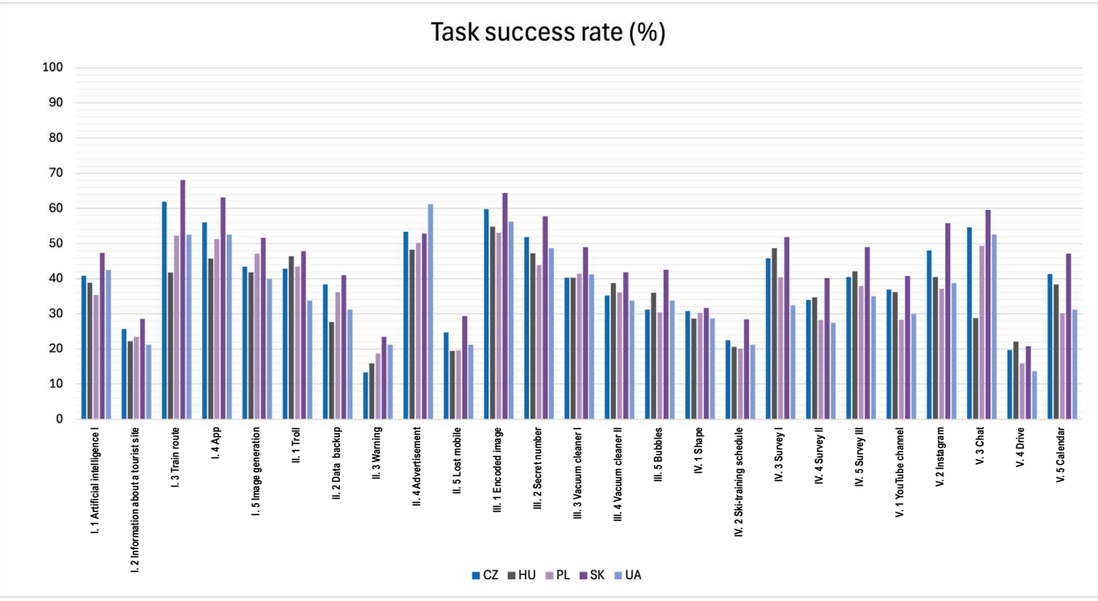


Chart 32 Success rates for individual test items

In the table below, the average success rate for all four variants of the test is shown.

Task	CZ	HU	PL	SK	UA
I. 1 Artificial intelligence I	40.86%	38.85%	35.41%	47.38%	42.50%
I. 2 Fact-checking	25.72%	22.20%	23.51%	28.51%	21.25%
I. 3 Train route	61.87%	41.72%	52.26%	68.12%	52.50%
I. 4 Application	56.02%	45.75%	51.25%	63.12%	52.50%
I. 5 Image generation	43.49%	41.81%	47.11%	51.63%	40.00%
II. 1 Troll	42.91%	46.42%	43.41%	47.83%	33.75%
II. 2 Data backup	38.36%	27.69%	36.15%	41.09%	31.25%
II. 3 Warning	13.38%	15.95%	18.72%	23.44%	21.25%
II. 4 Advertisement	53.41%	48.21%	50.21%	52.80%	61.25%
II. 5 Lost mobile	24.76%	19.44%	19.62%	29.43%	21.25%
III. 1 Encoded image	59.80%	54.84%	53.11%	64.35%	56.25%
III. 2 Secret number	51.85%	47.31%	43.84%	57.82%	48.75%
III. 3 Vacuum cleaner I	40.33%	40.32%	41.46%	48.99%	41.25%
III. 4 Vacuum cleaner II	35.25%	38.80%	36.10%	41.80%	33.75%
III. 5 Bubbles	31.18%	36.02%	30.49%	42.63%	33.75%
IV. 1 Shape	30.79%	28.67%	30.22%	31.73%	28.75%
IV. 2 Ski-training program	22.50%	20.61%	20.15%	28.43%	21.25%
IV. 3 Survey I	45.82%	48.75%	40.40%	51.85%	32.50%
IV. 4 Survey II	33.94%	34.77%	28.26%	40.24%	27.50%
IV. 5 Survey III	40.48%	42.11%	37.91%	48.97%	35.00%
V. 1 YouTube channel	36.93%	36.14%	28.39%	40.75%	30.00%
V. 2 Instagram	48.07%	40.45%	37.14%	55.79%	38.75%
V. 3 Chat	54.62%	28.79%	49.36%	59.59%	52.50%
V. 4 Drive	19.77%	22.15%	15.88%	20.76%	13.75%
V. 5 Calendar	41.31%	38.39%	30.21%	47.21%	31.25%

Table 14 Average success rate of test items

Students from the Czech Republic and Hungary had the lowest success rate in the Warning task (Category: Security). Students from Poland, Slovakia, and Ukraine had the lowest success rate in the Drive task (Category: Collaborative Tools and Social Networks). There were also significant differences in the success rates of individual tasks between the countries. The maximum difference between the countries in individual tasks was approximately 30 percentage points – in the Chat task (Category: Collaborative Tools and Social Networks). Compared to other countries, Hungarian students had the lowest success rate in this task. The best results in the tasks were mostly achieved by Slovak students (except for two tasks), in one task by students from Ukraine, and in one task by students from Hungary.

F. Sensitivity in individual categories

Category	CZ	HU	PL	SK	UA
I. The Internet	52.80%	38.11%	56.25%	58.21%	50.00%
II. Security and Computer Systems	43.80%	31.54%	46.08%	52.09%	50.00%
III. Complex Tasks	53.90%	43.46%	62.53%	64.25%	61.25%
IV. Office Tools	51.90%	34.99%	51.50%	60.96%	61.25%
V. Collaborative Tools and Social Networks	63.21%	33.16%	63.39%	67.38%	68.75%

Table 15 Sensitivity in each test category

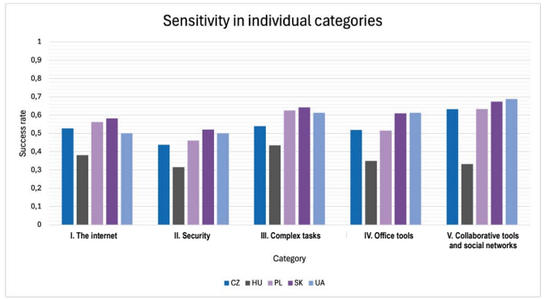


Chart 33 Sensitivity in individual test categories

Sensitivity in all categories was good to very good. Each of the categories distributed the tested group very well. There are also significant differences in sensitivity comparisons between the countries. The highest sensitivity was in the Collaborative Tools and Social Networks category. No category had a significantly lower sensitivity compared to the others. The lowest, though still-good sensitivity is for the Security category for Hungarian students.

G. Sensitivity of individual test tasks

In the country comparison, individual tasks show higher differences in sensitivity than just individual categories.

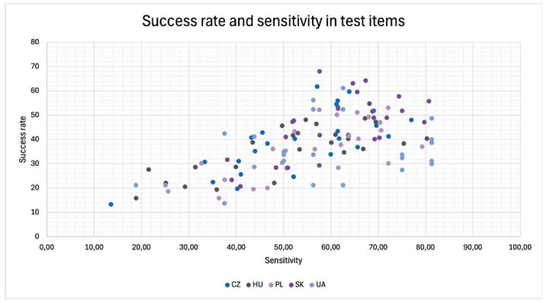


Chart 35 Success rate and sensitivity of individual test items for respondents aged 15 and over

Task Warning had low sensitivity except in the Slovak Republic. Three tasks had low sensitivity in Hungary, one in the Czech Republic, one in Poland, and one in Ukraine. In Slovakia all tasks had good sensitivity. The other tasks had good to excellent sensitivity and thus distributed the test respondents well.

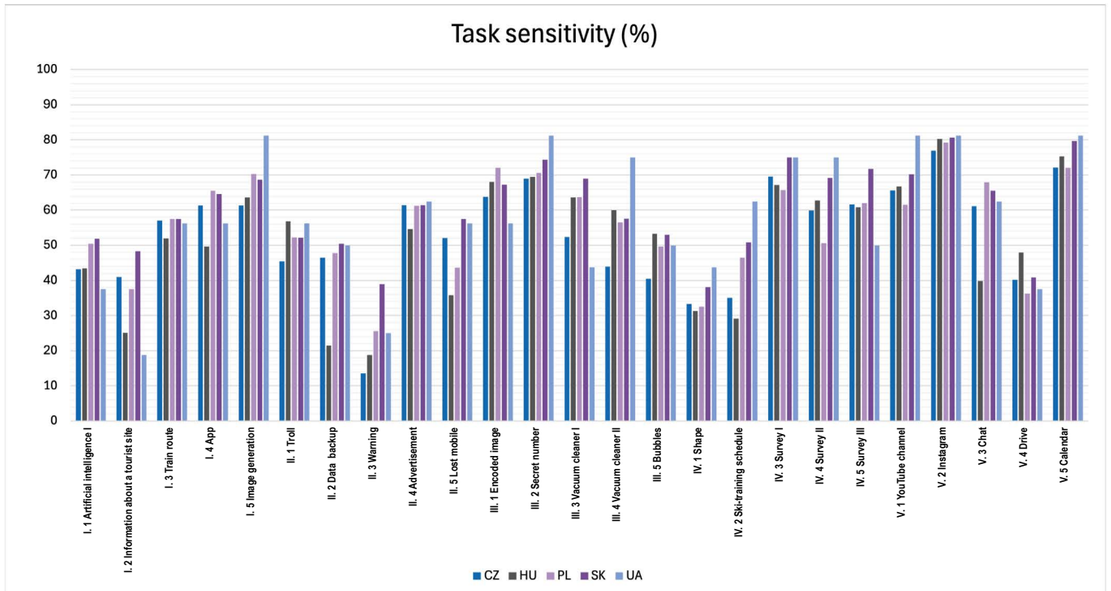


Chart 34 Sensitivity of individual test items

The graph shows the sensitivity of the individual test items (all four variants together). Overall, all items have good sensitivity in at least one of the countries. Only the Warning task has good sensitivity only in Slovakia whereas in the remaining countries its sensitivity is low.

H. Examples of some of the tasks in the test for respondents over 15 years of age

Task with the highest success rate (in the Czech Republic and Slovakia) – I. The Internet – Train route

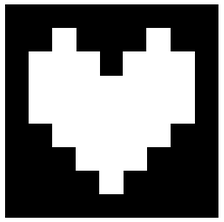
Success rate: CZ: 61,87 %; HU: 41,72 %; PL: 52,26 %; SK: 68,12 %; UA: 52,50 %;
Sensitivity: CZ: 57,03 %; HU: 51,94 %; PL: 57,53 %; SK: 57,56 %; UA: 56,25 %;

Task assignment:
Which train normally stops at Brno hl. n. station?
(a) EC 112 Silesia (b) EC 272 Metropolitan
(c) EC 102 Danubius (d) EC 130 Bathory

Task with the highest success rate (in Hungary and Poland) – III. Complex tasks – Encoded image

Success rate: CZ: 59,80 %; HU: 54,84 %; PL: 53,11 %; SK: 64,35 %; UA: 56,25 %;
Sensitivity: CZ: 63,83 %; HU: 68,07 %; PL: 72,06 %; SK: 67,27 %; UA: 56,25 %;

Task assignment:
Joachim likes drawing black and white pictures.
On the website https://tools.withcode.uk/binaryimage/ he has found that he can create different pictures and at the same time see their numerical code in a variety of systems there.
He drew this little heart by tapping on the pixels:



Which hexadecimal (HEX) code represents the first five lines from the top?

a) 22 7F 77 7F 7F 7F 7F 7F 7F 7F
b) 00 7F 22 7F 77 7F 3E 7F 7F 7F
c) 14 7F 2A 7F 77 7F 7F 7F 7F 7F
d) 00 7F 22 7F 77 7F 7F 7F 7F 7F

Task with the highest sensitivity – V. Collaborative Tools and Social Networks – Instagram

Success rate: CZ: 48,07 %; HU: 40,45 %; PL: 37,14 %; SK: 55,79 %; UA: 38,75 %;
Sensitivity: CZ: 76,93 %; HU: 80,24 %; PL: 79,21 %; SK: 80,66 %; UA: 81,25 %;

Task assignment:
An Erasmus project has brought together a group of students from across the V4 countries to discuss misinformation on social media. Each of them also mentioned projects dedicated to fact-checking.
lakmusz.hu demagog.sk demagog.cz demagog.pl

Find these profiles on Instagram and use the information on these profiles to decide if the following statements are true or false:

(2) demagog.sk has more than 25,000 followers. TRUE / FALSE
(3) demagog.cz has more than 50,000 followers. TRUE / FALSE
(6) demagog.sk has a green background in its profile picture. TRUE / FALSE
(11) demagog.cz has more than 2,000 posts. TRUE / FALSE

Task with one of the lowest success rates – I. Internet – Fact-checking

Success rate: CZ: 25,72 %; HU: 22,20 %; PL: 23,51 %; SK: 28,51 %; UA: 21,25 %;
Sensitivity: CZ: 40,93 %; HU: 25,07 %; PL: 37,52 %; SK: 48,34 %; UA: 18,75 %;

Task assignment:
The renowned news agency AFP provides fact-checking in various languages on its website.

CZ: https://napravoumiru.afp.com
EN: https://factcheck.afp.com
HU: https://tenykerdes.afp.com
PL: https://sprawdzam.afp.com
SK: https://fakty.afp.com

*In its Polish and Hungarian language versions, it also drew attention to a fake photograph that **does not depict** the farmers' protest in Paris; instead, the photograph is the product of generative artificial intelligence. In the Hungarian version, the article was published with the headline: "Ezt a képet mesterséges intelligenciával készítették, és nem a francia gazdatüntetéseket látni rajta".*
In the Polish version, the article was published with the headline: "To zdjęcie zostało wytworzone przez sztuczną inteligencję. Nie przedstawia ono protestu rolników w Paryżu".

Find both posts (Hungarian and Polish) and decide whether the following statements are true or false according to the information published in them:

*(1) The Hungarian version has a publication time of **17:21**.*
TRUE / FALSE
*(2) The Polish version contains an excerpt of a social media post published on **3 February**.*
TRUE / FALSE
*(3) Both versions also include proof that the image was generated by Midjourney (artificial intelligence) from **30 January 2024**.*
TRUE / FALSE

IId. School performance in the test for respondents over 15 years of age in the Czech Republic

Students from 511 schools took part in the test for respondents over 15 years of age. Of these, 303 were schools with at least 10 students aged 15 and over. From these schools, we report in the table below the ranking of the highest performing schools (including colleges), including the school's percentile (above 90th percentile) and the average age of the students tested.

Ranking	School	School percentile	Average success rate	Average age	Number of students
1	Masarykova univerzita	100.00%	72.78%	22.5	225
2	Vysoká škola ekonomická v Praze	99.60%	72.46%	23.8	26
3	Vysoká škola chemicko-technologická v Praze	99.30%	67.42%	22.4	59
4	Gymnázium Jana Keplera, Praha 6, Parléřova 2	99.00%	66.76%	18.8	29
5	Gymnázium, Praha 6, Arabská 14	98.60%	66.63%	17.3	160
6	Gymnázium Lanškroun	98.30%	64.69%	16.7	29
7	Gymnázium, Praha 5, Nad Kavalírkou 1	98.00%	61.88%	16.4	17
8	Wichterlovo gymnázium, Ostrava-Poruba, příspěvková organizace	97.60%	61.56%	16.8	167
9	Gymnázium Christiana Dopplera	97.30%	60.33%	16.2	12
10	Gymnázium ALTIS s.r.o.	97.00%	59.68%	17.2	25
11	Lauderova mateřská škola, základní škola a gymnázium při Židovské obci v Praze	96.60%	59.67%	17.1	24
12	Gymnázium, Česká Lípa, Žitavská 2969, příspěvková organizace	96.30%	59.18%	16.2	78
13	Gymnázium, Olomouc - Hejčín, Tomkova 45	96.00%	59.02%	15.8	210
14	Gymnázium Elišky Krásnohorské, Praha 4 - Michle, Ohradní 55	95.60%	58.60%	18.5	60
15	Gymnázium, Hranice, Zborovská 293	95.30%	57.69%	15.9	45
16	Střední škola technická a dopravní Gustava Habrmana Česká Třebová	95.00%	57.63%	17.7	103
17	Gymnázium J. V. Jirsíka, České Budějovice, Fráni Šrámka 23	94.70%	57.45%	15.9	11
18	Gymnázium a Střední odborná škola pedagogická, Liberec, Jeronýmova 425/27, příspěvková organizace	94.30%	56.85%	17.8	99
19	Gymnázium Josefa Kainara, Hlučín, příspěvková organizace	93.70%	56.00%	16.1	28
20	Gymnázium Oty Pavla, Praha 5, Loučanská 520	93.70%	56.00%	18.6	46
21	Gymnázium, Kolín III, Žižkova 162	93.30%	55.36%	17.2	69
22	Střední průmyslová škola na Proseku	93.00%	55.27%	18.2	110
23	Gymnázium Matyáše Lercha, Brno, Žižkova 55, příspěvková organizace	92.70%	54.40%	17.4	10
24	Gymnázium, Soběslav, Dr. Edvarda Beneše 449/II	92.30%	54.25%	16.0	135
25	Vyšší odborná škola, Obchodní akademie, Střední odborná škola a Jazyková škola s právem státní jazykové zkoušky EKONOM, o.p.s., Litoměřice, Palackého 730/1	92.00%	53.79%	16.6	78
26	Západočeská univerzita v Plzni	91.70%	53.69%	20.8	52
27	Střední průmyslová škola, Trutnov, Školní 101	91.30%	53.38%	17.0	188
28	Gymnázium, Dobruška, Pulická 779	91.00%	52.97%	17.0	37
29	Gymnázium Uherské Hradiště	90.70%	52.84%	16.0	316
30	Gymnázium, České Budějovice, Česká 64	90.30%	52.34%	17.1	116
31	Střední škola technická a ekonomická Brno, Olomoucká, příspěvková organizace	90.00%	52.22%	17.8	117

Table 16 Top-performing schools (pupils over 15 years of age) in the Czech Republic

IIe. School performance in the test for respondents over 15 years of age in Hungary

Students from 58 schools took part in the test for respondents over 15 years of age. Of these, 25 were schools with at least 10 students aged 15 and over. From these schools, we report in the table below the ranking of the 10 highest performing schools, including the school's percentile and the average age of the students tested.

Ranking	School	School percentile	Average success rate	Average age	Number of students
1	Budapest II. Kerületi II. Rákóczi Ferenc Gimnázium, Keleti Károly utca 37., Budapest II. kerület	100.00%	48.13%	17.2	62
2	Kiskunhalasi SZC Kiskőrösi Wattay Technikum és Kollégium, Árpád utca 20., Kiskőrös (6200)	95.60%	46.75%	18.9	16
3	Vas Megyei SZC Sárvári Tinódi Gimnázium, Móricz Zsigmond utca 2., Sárvár	91.30%	46.32%	16.4	38
4	SZÁMALK - Szalézi Technikum és Szakgimnázium, Mérnök utca 39., Budapest	86.90%	45.05%	20.1	19
5	Sashegyi Arany János Általános Iskola és Gimnázium, Meredek utca 1., Budapest XII. kerület	82.60%	41.97%	17.1	70
6	Budapesti Egyetemi Katolikus Gimnázium és Kollégium, Szabó Ilonka utca 2-4., Budapest I. kerület	78.20%	40.00%	16.4	28
7	Budapesti Gazdasági SZC Berzeviczy Gergely Két Tanítási Nyelvű Közgazdasági Technikum, Baross utca 72., Budapest IV. kerület (1047)	73.90%	37.33%	18.9	12
8	Szent István Katolikus Technikum és Gimnázium, Kazinczy utca 12., Sátoraljaújhely	69.50%	36.80%	18.3	15
9	Debreceni SZC Mechwart András Gépipari és Informatikai Technikum, Széchenyi utca 58., Debrecen	65.20%	35.53%	17.3	54
10	Vas Megyei SZC Hefele Menyhért Szakképző Iskola, Szent Márton utca 77., Szombathely (9700)	60.80%	35.29%	19.3	17

Table 17 Top-performing schools (pupils over 15 years of age) in Hungary

IIf. School performance in the test for respondents over 15 years of age in Poland

Students from 577 schools took part in the test for respondents over 15 years of age. Of these, 230 were schools with at least 10 students aged 15 and over. From these schools, we report in the table below the ranking of the highest performing schools (including colleges), including the school's percentile (above 85th percentile) and the average age of the students tested.

Ranking	School	School percentile	Average success rate	Average age	Number of students
1	I LICEUM OGÓLNOKSZTAŁCĄCE IM. ADAMA MICKIEWICZA W BIAŁYMSTOKU, ul. Brukowa 2, Białystok	100.00%	77.52%	16.5	29
2	TECHNIKUM W ZESPOLE SZKÓŁ ELEKTRONICZNYCH IM. OBROŃCÓW POCZTY POLSKIEJ, ul. Grunwaldzka 64a, Jelenia Góra	99.50%	74.82%	16.8	17
3	IX LICEUM OGÓLNOKSZTAŁCĄCE IM. CYPRIANA KAMILA NORWIDA, ul. Jasnogórska 8, Częstochowa	99.10%	70.79%	16.7	33
4	ZESPÓŁ SZKÓŁ EKONOMICZNYCH IM. GEN. STEFANA ROWECKIEGO "GROTA" W OPOLU, ul. Tadeusza Kościuszki 43, Opole	98.60%	68.91%	17.5	22
5	VIII LICEUM OGÓLNOKSZTAŁCĄCE IM ADAMA MICKIEWICZA, ul. Hipolita Cegielskiego 1, Poznań-Stare Miasto	98.20%	68.60%	16.5	107
6	IX LICEUM OGÓLNOKSZTAŁCĄCE IM. KLEMENTYNY HOFFMANOWEJ, ul. Hoża 88, Warszawa	97.80%	67.71%	15.8	28
7	V LICEUM OGÓLNOKSZTAŁCĄCE IM. KLAUDYNY POTOCKIEJ, ul. Zmartwychwstańców 10, Poznań	97.30%	67.43%	16.1	28
8	ŚLĄSKIE TECHNICZNE ZAKŁADY NAUKOWE, ul. Sokolska 26, Katowice	96.90%	63.87%	17.6	178
9	TECHNIKUM ŁĄCZNOŚCI I MULTIMEDIÓW CYFROWYCH W SZCZECINIE, ul. Ku Słońcu 27-30, Szczecin	96.50%	63.57%	17.1	28
10	TECHNIKUM ENERGETYCZNO-ELEKTRONICZNE NR 9 IM. TADEUSZA KOŚCIUSZKI W KRAKOWIE, ul. Loretańska 16, Kraków-Śródmieście	96.00%	63.20%	18.3	15
11	ZESPÓŁ SZKÓŁ ELEKTRONICZNYCH IM. OBROŃCÓW POCZTY POLSKIEJ, ul. Grunwaldzka 64A, Jelenia Góra	95.60%	62.38%	16.9	79
12	CXXII LICEUM OGÓLNOKSZTAŁCĄCE IM. IGNACEGO DOMEYKI, ul. Leopolda Staffa 3/5, Warszawa	95.10%	62.18%	16.5	182
13	IV LICEUM OGÓLNOKSZTAŁCĄCE IM. MIKOŁAJA KOPERNIKA, ul. Jarosława Dąbrowskiego 82, Rzeszów	94.70%	61.57%	16.4	23
14	TECHNIKUM NR 17, ul. Sokolska 26, Katowice	94.30%	61.18%	18.2	17
15	TECHNIKUM TEB EDUKACJA W TYCHACH, al. Aleja Jana Pawła II 24, Tychy	93.80%	60.67%	17.3	12
16	ZESPÓŁ SZKÓŁ NR 2 W PABIANICACH IM. PROF. JANUSZA GROSZKOWSKIEGO, ul. św. Jana 27, Pabianice	93.40%	59.77%	17.6	141
17	II LICEUM OGÓLNOKSZTAŁCĄCE IM. PŁK. LEOPOLDA LISA-KULI, ul. ks. Józefa Jałowego 22, Rzeszów	93.00%	59.33%	16.6	24

18	I LICEUM OGÓLNOKSZTAŁCĄCE IM. ZYGMUNTA KRASIŃSKIEGO W CIECHANOWIE, ul. 17 Stycznia 66, Ciechanów	92.50%	59.24%	16.5	127
19	ZESPÓŁ SZKÓŁ POLIGRAFICZNO-MECHANICZNYCH IM.ARMII KRAJOWEJ, ul. Armii Krajowej 84, Katowice	92.10%	56.70%	17.8	48
20	TECHNIKUM NR 18, ul. Armii Krajowej 84, Katowice	91.70%	56.69%	17.7	35
21	TECHNIKUM MECHANICZNO-ELEKTRYCZNE IM. NIKOLI TESLI, ul. Stefana Batorego 37, Chorzów	91.20%	56.48%	17.6	99
22	TECHNIKUM NR 9 W ZESPOLE SZKÓŁ POLITECHNICZNYCH IM. KOMISJI EDUKACJI NARODOWEJ, ul. Aleje Politechniki 38, Łódź-Górna	90.80%	55.65%	16.3	104
23	ZESPÓŁ SZKÓŁ POLITECHNICZNYCH IM. KOMISJI EDUKACJI NARODOWEJ, ul. Aleje Politechniki 38, Łódź-Górna	90.30%	54.80%	15.7	20
24	III LICEUM OGÓLNOKSZTAŁCĄCE IM. JANA PAWŁA II, ul. Oświęcimska 90, Ruda Śląska	89.90%	53.33%	16.3	18
25	POWIATOWY ZESPÓŁ NR 2 SZKÓŁ OGÓLNOKSZTAŁCĄCYCH MISTRZOSTWA SPORTOWEGO I TECHNICZNYCH IM. IGNACEGO ŁUKASIEWICZA W OŚWIĘCIMIU, ul. gen. Józefa Bema 8, Oświęcim	89.50%	53.30%	19.0	43
26	TECHNIKUM W STRZELCACH OPOLSKICH, ul. Powstańców Śląskich 3, Strzelce Opolskie	89.00%	53.14%	16.6	14
27	XVI LICEUM OGÓLNOKSZTAŁCĄCE W SZCZECINIE, ul. Xawerego Dunikowskiego 1, Szczecin	88.60%	52.85%	18.7	66
28	ZESPÓŁ SZKÓŁ NR 6 IM. MIKOŁAJA KOPERNIKA, ul. Wawrzyna Kałusa 3, Ruda Śląska	88.20%	51.66%	20.5	47
29	ZESPÓŁ SZKÓŁ NR 1 W PSZCZYNIE, ul. Kazimierza Wielkiego 5, Pszczyna	87.70%	51.43%	17.0	112
30	TECHNIKUM NR 1 IM. STANISŁAWA STASZICA W RYBNIKU, ul. Tadeusza Kościuszki 5, Rybnik	87.30%	50.91%	17.8	11
31	I LICEUM OGÓLNOKSZTAŁCĄCE IM. KRÓLA KAZIMIERZA WIELKIEGO W BRZOZOWIE, ul. Profesora Waleriana Pańki 2, Brzozów	86.80%	50.91%	16.7	33
32	XXIX LICEUM OGÓLNOKSZTAŁCĄCE IM. HM. JANKA BYTNARA "RUDEGO", ul. Aleksandra Zelwerowicza 38/44, Łódź-Śródmieście	86.40%	50.87%	16.0	156
33	ZESPÓŁ SZKÓŁ TECHNICZNYCH IM. EUGENIUSZA KWIATKOWSKIEGO, ul. Adama Matuszczaka 7, Rzeszów	86.00%	50.83%	16.9	287
34	XXXIII LICEUM OGÓLNOKSZTAŁCĄCE IM. ARMII KRAJOWEJ, ul. Janusza Kusocińskiego 116, Łódź-Polesie	85.50%	50.72%	15.7	100
35	ZESPÓŁ SZKÓŁ ZAWODOWYCH NR 6 IM. JOACHIMA LELEWELA, ul. Działyńskich 4/5, Poznań-Stare Miasto	85.10%	50.63%	16.6	123

Table 18 Top-performing schools (pupils over 15 years of age) in Poland

IIg. School performance in the test for respondents over 15 years of age in the Slovak Republic

Students from 594 schools took part in the test for respondents over 15 years of age. Of these, 311 were schools with at least 10 students aged 15 and over. From these schools, we report in the table below the ranking of the highest performing schools (including colleges), including the school's percentile (above 90th percentile) and the average age of the students tested.

Ranking	School	School percentile	Average success rate	Average age	Number of students
1	Spojená škola s vyučovacím jazykom maďarským, Lichnerova 71, Senec	100.00%	92.14%	16.6	57
2	Súkromná stredná športová škola ELBA, Smetanova 2, Prešov	99.60%	78.82%	16.9	61
3	Gymnázium Leonarda Stöckela, Jiráskova 12, Bardejov	99.30%	73.22%	17.0	147
4	1. súkromné gymnázium v Bratislave, Bajkalská 20, Bratislava-Ružinov	99.00%	70.85%	16.1	115
5	Gymnázium Svätej Rodiny, ako organizačná zložka Spojenej školy Svätej Rodiny, Gercenova 10, Bratislava-Petržalka	98.70%	70.10%	16.5	59
6	Súkromná stredná odborná škola, Ul. 29. augusta 4812, Poprad	98.30%	70.07%	16.9	166
7	Gymnázium Angely Merici, Hviezdoslavova 10, Trnava	98.00%	70.00%	16.7	172
8	Gymnázium Ladislava Novomeského, Tomášikova 2, Bratislava-Ružinov	97.70%	69.85%	18.1	13
9	Gymnázium, Varšavská cesta 1, Žilina	97.40%	67.70%	17.1	107
10	Gymnázium, 17. novembra 1180/16, Topoľčany	97.00%	66.95%	17.9	19
11	Stredná priemyselná škola elektrotechnická, Zochova 9, Bratislava-Staré Mesto	96.70%	66.57%	15.7	14
12	Gymnázium arm. gen. Ludvíka Svobodu, Komenského 4, Humenné	96.40%	65.67%	17.1	36
13	Gymnázium sv. Moniky, Tarasa Ševčenka 1, Prešov	96.10%	65.48%	16.9	354
14	Stredná priemyselná škola elektrotechnická, Plzenská 1, Prešov	95.80%	65.30%	17.3	533
15	Gymnázium, Poštová 9, Košice-Staré Mesto	95.40%	64.60%	16.5	441
16	Gymnázium Antona Bernoláka, Ul. Mieru 307/23, Námestovo	95.10%	64.59%	18.8	27
17	Gymnázium sv. Uršule ako organizačná zložka Spojenej školy sv. Uršule, Nedbalova 4, Bratislava-Staré Mesto	94.80%	64.52%	17.2	54
18	Gymnázium Pavla Országha Hviezdoslava, Hviezdoslavova 20, Kežmarok	94.50%	64.44%	16.9	146
19	Hotelová akadémia Ľudovíta Wintera, Stromová 34, Piešťany	94.10%	63.87%	19.2	158
20	Stredná priemyselná škola elektrotechnická, Komenského 44, Košice-Sever	93.80%	63.13%	17.5	675
21	Gymnázium Karola Štúra, Nám. slobody 5, Modra	93.50%	63.10%	16.8	62

22	Gymnázium Ladislava Dúbravu, Smetanov háj 285/8, Dunajská Streda	93.20%	62.95%	16.4	19
23	Gymnázium Jána Adama Raymana, Mudroňova 20, Prešov	92.90%	62.67%	18.1	68
24	Spojená škola sv. Jána Bosca, Trenčianska 66/28, Nová Dubnica	92.50%	61.94%	16.1	72
25	Gymnázium Viliama Paulinyho Tótha, Malá hora 3, Martin	92.20%	61.39%	17.0	152
26	Gymnázium Andreja Kmeťa, Kolpašská 1738/9, Banská Štiavnica	91.90%	61.08%	16.6	148
27	Cirkevné gymnázium Štefana Mišíka, Radničné námestie 271/8, Spišská Nová Ves	91.60%	60.56%	16.7	36
28	Gymnázium, Alejová 1, Košice-Juh	91.20%	60.23%	16.4	154
29	Spojená škola, Pankúchova 6, Bratislava-Petržalka	90.90%	60.19%	17.0	21
30	Gymnázium sv. Tomáša Akvinského, Zbrojničná 3, Košice-Staré Mesto	90.60%	60.17%	16.3	152
31	Gymnázium Andreja Vrábla, Mierová 5, Levice	90.30%	59.61%	16.9	376
32	Stredná odborná škola strojnícka, Partizánska cesta 76, Bánovce nad Bebravou	90.00%	59.40%	17.3	53

Table 19 Top-performing schools (pupils over 15 years of age) in the Slovak Republic

IIh. Teacher performance on the test for respondents over 15 years of age

country	average teacher success rate	number of teachers tested	average age
CZ	56.22 %	1881	43
HU	52.58 %	97	46
PL	46.81 %	620	44
SK	54.08 %	2426	45

Table 20 Teacher results by country

Teachers from the Slovak and Czech Republics were the most involved in the teacher testing (as regards the test for respondents over 15 years of age). Of these countries, it is already a sample size for which the breakdown of results by region may be of interest. Therefore, in the following tables we present more detailed results for these two countries.

Czech Republic

The test for respondents in the Czech Republic was taken by 1,881 respondents who indicated that they were teachers. The average success rate of teachers in the test for respondents over 15 years of age was 56.22%.

Region	average teacher success rate	number of teachers tested
Královéhradecký	62.43%	225
Karlovarský	59.64%	33
Praha	58.61%	175
Pardubický	57.03%	126
Jihomoravský	56.46%	218
Liberecký	56.24%	34
Zlínský	56.00%	29
Moravskoslezský	55.98%	271
Jihočeský	55.82%	89
Olomoucký	54.48%	113
Plzeňský	54.25%	155
Středočeský	52.88%	191
Ústecký	52.78%	138
Vysočina	52.02%	84

Table 21 CZ - Teacher success rate

The lowest success rate was achieved by teachers in the Vysočina Region. The highest success rate was achieved by teachers from the Královéhradecký Region.

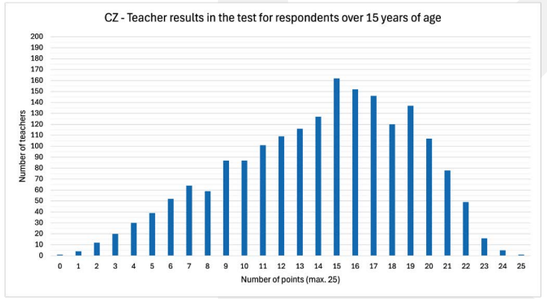


Chart 36 CZ - Teacher results in the test for respondents over 15 years of age

Slovak Republic

The test for respondents over 15 years of age was taken by 2,426 respondents in the Slovak Republic who indicated that they were teachers. The average success rate for teachers in the test for respondents over 15 years of age was 54.08% (in 2023 – 64.64%, in 2022 – 57.39%).

Overall, the teacher success rate in the Slovak Republic has decreased compared to last year. Teachers in the Nitriansky Region have the lowest success rate. The year-on-year improvement in individual regions is in the range of 7 to 16 percentage points. The highest year-on-year decrease in teacher success is in the Trnavský and Nitriansky Regions.

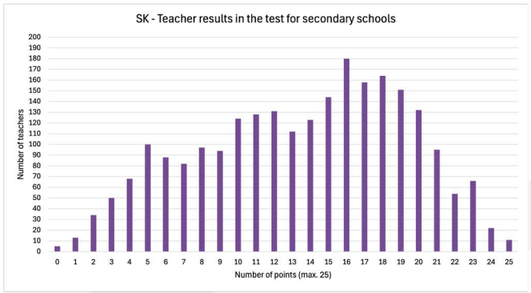


Chart 37 SK - Teacher results in the test for respondents over 15 years of age

	2024		2023	
Region	average teacher success rate	number of teachers tested	average teacher success rate	number of teachers tested
Banskobystrický	54.61 %	314	64.70 %	313
Bratislavský	53.23 %	176	60.59 %	319
Košický	54.75 %	842	65.17 %	826
Nitriansky	49.61 %	228	62.88 %	222
Prešovský	54.29 %	430	63.93 %	330
Trenčiansky	60.21 %	58	71.89 %	113
Trnavský	50.11 %	110	66.92 %	100
Žilinský	55.66 %	268	65.96 %	317

Table 22 SK – Teacher success rate

IIi. Interpretation of results and recommendations for respondents over 15 years of age

Each year, the test developers aim to create a test that can distinguish respondents with good knowledge and skills from respondents with poor knowledge and skills. A test that discriminates well between respondents should have a success rate of approximately 50 to 60%. The test items are not pre-piloted, which means that estimating their parameters is very difficult.

The success rate for all respondents aged 15 and over in Slovakia is 45.38% (57.17% last year, 61.51% in 2022), which is below the lower end of the required range.

The other success rates were: Czech Republic – 39.74%, Hungary – 36.25%, Poland – 36.03% (last year Czech Republic – 49.57%, Hungary – 47.20%, Poland – 46.67%). Ukrainian pupils had a success rate of 36.10%. The success rate in the test in the Slovak Republic decreased by 11.79 percentage points compared to last year. However, no firm conclusions can be drawn from this decrease. It is questionable to what extent the change in the tested sample, the change in participation in the countries, the real decrease in students' IT skills, as well as the slightly more difficult test and the addition of new topics also impacted the results. In this edition we focused more on fact-checking and the use of AI tools. In a comparison of countries, respondents in the Slovak Republic scored better.

The test discriminated very well between respondents' scores. The overall sensitivity (the discriminatory power of the test) was around 55% across the countries, which is very good. The sensitivity was also enhanced by a good mix of tasks of appropriate difficulty. The sensitivity is comparable to last year's testing, although there is more variation in the success rates.

The best results in **The Internet category** were among students from the Czech Republic, Slovakia and Poland. This category has the highest long-term success rate. However, students from Hungary and Ukraine had a higher success rate in the Complex Tasks category. Students are good at searching the Internet, finding a travel connection and its parameters, and looking up an app and finding out basic information about it. Students from Hungary have deficiencies in searching for a travel connection. Students also had low success rates in tasks that focused on artificial intelligence tools. Very low success rates were seen in the Fact-checking task, where students had to find published articles about a fake photograph and verify the claims, as well as compare two sources and decide on the truth of specific claims.

In the country comparison for tasks in The Internet category, the best results were achieved by students from Slovakia. In two tasks in this category, students from Hungary had the lowest success rate, in two tasks from Ukraine, and in one task from Poland. The differences in the countries' success rates in The Internet category were significant, the largest being in the Train Route task (up to 26 percentage points between Slovakia and Hungary).

The **Security and Computer Systems** category was the least successful category in the Czech and Slovak Republics as well as Hungary. Here, too, the differences in the average success rates between countries were significant. Students were relatively good at identifying and responding to fraudulent advertisements.

Students had weaker results in the Data-Backup task. They had even more significant gaps in their understanding of and response to security alerts, even though they had a resource that described each situation in more detail. They also performed very poorly in the Lost Mobile task. This task also referred directly to a relevant source. Students were significantly less successful in situations they had not encountered before, and which are discussed less in society. Despite being given background information or instructions on the situation, they have a poor understanding of the text and cannot draw the correct conclusions from it.

In the **Complex Tasks** category, the tasks focused on problem solving and algorithmic thinking, complex skills when coding information, finding information in an interactive graph and evaluating it, and finding an image whose name was then used to discover the password to unzip files. Students performed best on the Encoded Image task. Students did least well in evaluating information from an interactive graph.

Here too, there are greater differences in achievement between the countries (comparing the best and worst performers). Weaker results were achieved by students in the algorithmic task where it was necessary to understand the rules of the program (the robot vacuum cleaner) and then decide on the outcome of the process and identify the critical situation. Here, students from the Slovak Republic fared slightly better.

The best in this category were students from the Slovak Republic. Students from other countries had an average success rate of around 8 percentage points lower in the category.

In the **Office Tools** category, the success rate in Slovakia was 40.25% (last year 42.15%). The success rates of this and last year's testing was similar in the Czech Republic and Hungary. In Poland and for students from Ukraine, the year-on-year difference had already been higher (about 5 to 10 percentage points), students now achieved a lower success rate.

Knowledge and skills in office tools have long been weak and inadequate, e.g. for employers' requirements. Despite the poor results, sensitivity in this category was very good. Only in Hungary was it close to the threshold of the required sensitivity.

This means that we have very skilled respondents and, conversely, respondents who have significant gaps in their knowledge of the subject. Students have gaps in their skills and knowledge about working in vector graphics; they also have significant deficiencies in working with a word processor. They are relatively good at using simple tools to work with data in a spreadsheet. They have significant deficiencies in evaluating and filtering data in a spreadsheet. Observation of practice during test solving shows that students are willing to reach a result by more laborious and incompetent solutions. They do not think about the efficiency and reliability of a solution, they do not know how to use efficient tools, and they lack the ability to question the correctness of their solution method and look for a method that leads to less error. It is questionable whether they are guided to do this in the classroom or whether the school system is just focusing on getting to results. At the same time, they have little familiarity with larger spreadsheets; we assume that they are more likely to work with smaller and simpler spreadsheets in the classroom.

In the **Collaborative Tools and Social Networks** category, there are higher differences between the countries.

Here, respondents from the Slovak Republic had the highest success rate of 44.84% (65.69% last year), which is down by about 20 percentage points compared to last year. **Based on testing the same skills compared to last year, we see a deterioration in this category in Slovakia.** Overall, we see that respondents have worsened in this area. They have experience with social networks, they can find and identify basic information, as well as interpret it. They are less able to verify the required information. Interestingly, students from Hungary lagged significantly behind in the Chat task (compared to other countries). Here, the difference between Hungary and the Slovak Republic was about 30 percentage points. The Drive task saw a low success rate in all the countries. It appears that students do not see the difference between a folder and a file and consequently cannot evaluate cloud-sharing settings.

The country comparison of the individual tasks in this category shows more pronounced differences (up to 30 percentage points in the Chat task). Overall, in the shared calendar task, students in all countries had deficiencies, and the skills for working in teams and planning activities are considered key by many employers.

For the first time this year, we also included tasks focused on the use of artificial intelligence tools. It turns out that students are familiar with them, and they know how to use them intuitively. However, there is also room for learning about and exploring these tools as well as finding a place for them within edu-

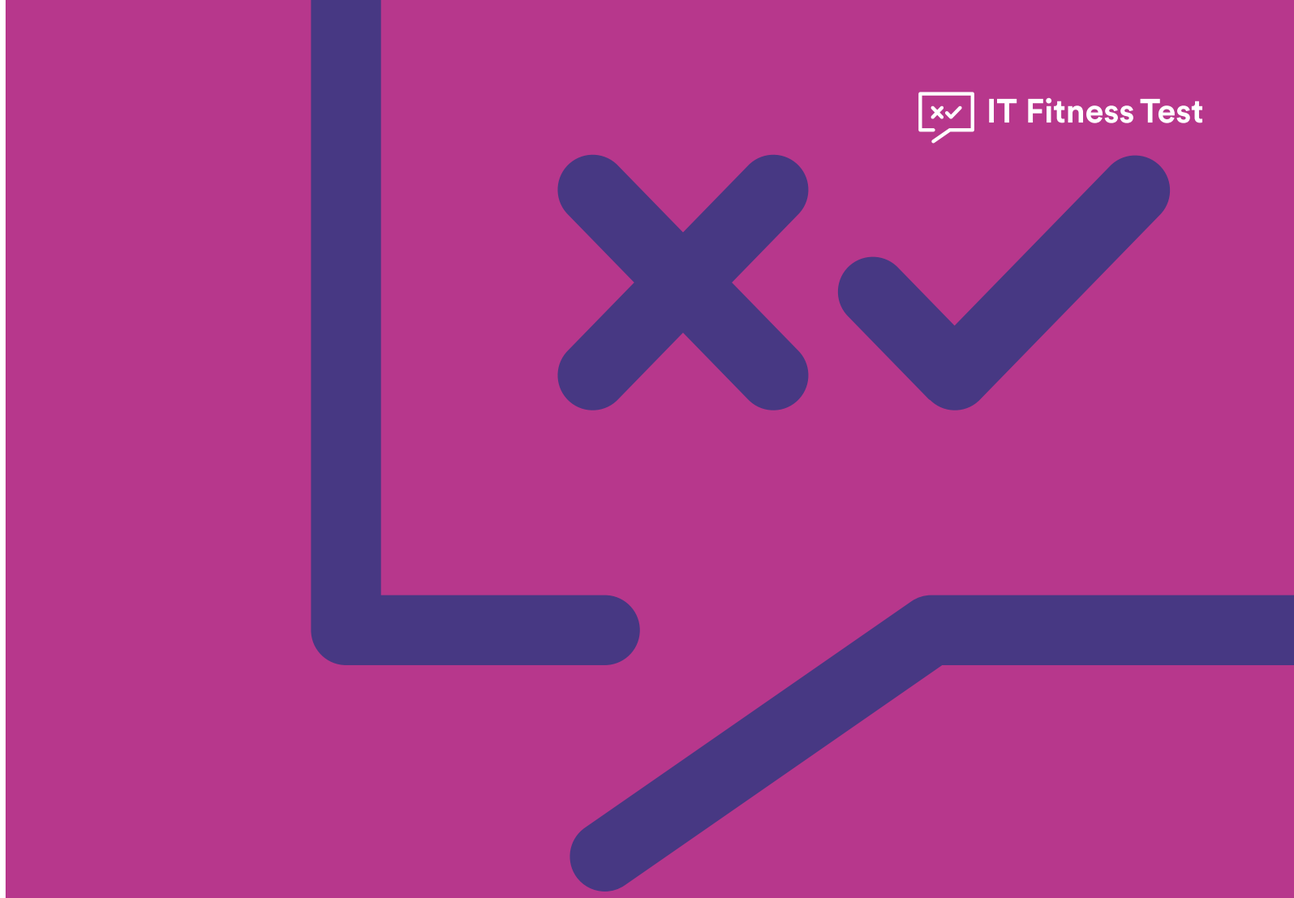
cation. In doing so, it is important that other competences do not take a back seat and that students are able to use the tools as a natural and effective part of life.

What would we recommend to teachers?
Overall, students appear to perform well in activities they encounter more frequently and perform better on tasks with lower cognitive demand, where reading comprehension and the use of critical thinking are not required. Their knowledge from the school system is more likely to be of routine use in practice and based on experience, often lacking a theoretical background behind it.

Many students have gaps in the skills and competences they need for further study and progression, as well as in the skills required by employers.

The differences in success rates between the individual categories are large; students have significant deficiencies in the Security category, in working with office tools, in evaluating data in a spreadsheet and filtering it, nor do they know how to use tools for collaboration with several people, and they are not prepared for less-standard, but at the same time critical situations – the loss of a mobile phone containing data, the response to an important alert. They have fundamental gaps in verifying facts.

There is a need to focus on linking knowledge from multiple fields, on linking theoretical knowledge with practical skills and with experience, and a need to encounter a variety of new problems in different contexts. It is appropriate to give students tasks and projects in which they have to carry out activities that also require higher cognitive operations, e.g. to analyse, evaluate, and create. At the same time, it is essential to train critical thinking and reading comprehension, which are crucial for further lifelong learning, and not to ignore the need to have a theoretical foundation as well.



III. CONCLUSIONS AND RECOMMENDATION

Our goal is to create tests that have an average success rate between 50% and 60% and that discriminate well between respondents with good knowledge and skills and respondents with poor knowledge and skills. The success rate for the test for elementary schools in the Slovak Republic was 54.85%. The test for respondents aged 15 years and over had a pass rate of 45.38% in Slovakia, which is below the lower end of the required range.

In countries where there is no tradition of multi-year testing, the test results for elementary schools are just below the lower end of the optimal success range, and the test for respondents aged 15 and over has a success rate of around 36-39%, which is considerably lower.

Both tests had very good discriminatory power in all the countries tested.

The sensitivity in all categories was good to very good. Each of the categories distributed the test sample very well. There are also significant differences in the sensitivity comparisons between countries. The Collaborative Tools and Social Networks category had the highest sensitivity in the test for respondents aged 15 and over.

There are also significant differences between the countries, many of which we have highlighted in this report. It is appropriate to reflect on these differences at the country level and to speculate on or investigate their causes in more detail.

We cannot draw firm conclusions based on a comparison of the success rates of two different years (grades) at school, as several factors influence the change. One important factor is the change in the set of examinees. A comparison of year-on-year results in the Slovak Republic, as well as in the other countries, shows an overall deterioration, but it cannot be assessed as a clear and overall trend. The test also included types of tasks in which respondents achieved similar or slightly better results.

This year we focused more on fact-checking and using AI tools. In a comparison of the countries, respondents in the Slovak Republic scored better.

The Fact-checking task, where students had to find published articles about a fake photo and verify the claims or compare two sources and decide on the truth of specific claims, had a very low success rate.

It turns out that students are familiar with AI tools and they know how to use them intuitively. However, there is also room for learning about and exploring with these tools as well as finding a place for them within education. In doing so, it is important that other competences do not take a back seat and that students are able to use the tools as a natural and effective part of life.

The Internet category tends to have **the best results** in the long term. This was also true in this year's testing in the test for elementary schools, but in the test for respondents aged 15+ it was true only in the Czech Republic, Slovakia, and Poland.

The **Security and Computer Systems** category was the second-most successful category in the test for elementary schools, but was the least successful category in the test for older respondents in most of the countries. Deficiencies were seen in the Data Backup task. Students had even more significant gaps in understanding and responding to security alerts, despite having a resource that described each situation in more detail. Students were significantly less successful in situations they had not encountered before and which are discussed less in society. Despite being given background information or instructions on the situation, they have a poor understanding of the text and cannot draw the correct conclusions from it.

In the **Complex Tasks** category, students from the Slovak Republic were the best performers. There are larger differences in success rates between countries here as well (when comparing the best and the worst result). Weaker results were achieved by students in the algorithmic task, where it was necessary to understand the rules of a program and then decide on the outcome of a process and also identify the critical situation. Students in all tested countries have more significant deficiencies in solving complex problems of an algorithmic nature.

Students have long had gaps in the use of office tools. In this year's testing, Office Tools was again one of the areas with the lowest success rates. In a comparison of the countries, Slovak and Hungarian pupils achieved the highest success rates. For example, pupils cannot tell whether or not automatic numbering has been used in a given text; they only decide based on the visual impression. Despite the poor results, the sensitivity in this category was very good. Only in Hungary was it close to the threshold of the required sensitivity.

Students have gaps in their skills and knowledge of working with vector graphics, and they also have considerable deficiencies in working with a word processor. They are relatively good at using simple tools to work with data in a spreadsheet. They have significant deficiencies in evaluating and filtering data in a spreadsheet. Observation of practice during test solving shows that students are willing to use more laborious and incompetent solutions to get to a result.

Overall, students appear to perform well in activities they encounter more frequently and perform better on tasks with lower cognitive demand where reading comprehension and the use of critical thinking are not required.

Pupils are deficient in solving problems with higher cognitive demand, where it is necessary to solve a problem at a complex level (including algorithmic problems). When solving, they prefer answers resulting from a quick decision. They are less willing to investigate the properties of a system in more detail, to doubt the correctness of a result, and then to verify the quickly offered answers.

The question remains whether we should focus only on getting to the right result in education, or whether we should also consider different means of reaching a result, whether we discuss ways of coming up with a solution, and whether we can compare the effectiveness of the ways of arriving at a solution.

Many students have gaps in the skills and competences they need for further study and progression, as well as in the skills required by employers.

It is essential to train critical thinking and reading comprehension, which are crucial for further lifelong learning, and not to ignore the need to have a theoretical foundation as well.

IT Fitness Test

2024 V4

Digitálna koalícia

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