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Türkiye's Educational Journey: Evaluating the Skills of Mathematics, Science, Reading, and Foreign Language in The Light of International Competition

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Education has always been significant for sustainable development all around the world. However, it is not possible to achieve development without considering the international standards in this globalized world. Countries can be successful only if they interact with other societies without losing their cultural identities. The European Union is an organisation that fosters cooperation and harmony among countries for development. In this context, it has identified four main areas and sixteen indicators for these areas in order to improve the quality of education. Being one of the candidate countries, Türkiye has declared will to harmonize with the educational policies suggested by the European Union. Therefore, the question of how compatible and competitive Türkiye's education system has become with international standards remains on the agenda in today's world of increasing international competition in every area. In this line, this study aims at analysing the current situation of Turkish education system according to four key indicators, which are mathematics, science, reading skills and foreign language. For this purpose, the study employs the method of document analysis. Therefore, we analysed PISA 2022 report and EF EPI (EF English Proficiency Index) 2023 report in this line. The study findings show that Türkiye ranks 39th with an average score of 453 in mathematics, 34th with an average score of 476 in science, and 36th with an average score of 456 in reading skills among 81 countries in PISA 2022. Also, Türkiye ranks 66th among 113 countries with an EF EPI score of 493 in English.

Introduction

Education across the world is a key enabler for the development of societies and sustainable development. The education system of each country plays a key role in shaping future generations and is faced with the necessity to comply with international standards. In

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terms of meeting these needs, societies acting in isolation without taking into account other countries means moving away from success. The way to success in the global world is to adapt to the global world by interacting with other societies while preserving the local structures and characteristics that constitute the identity of a society. At this point, the European Union, an organisation that enables different societies to come together and act in harmony, comes forward.

The member states of the European Union focus on improving social welfare by acting in accordance with the European Union in social, cultural, political and commercial areas. Education is undoubtedly the most important of these areas. As Atabay (2003, p. 57) states, in the field of education, the European Union is a crucible where different views and practices are shared and ideas are exchanged on approaches that lead to success (cited in Gültekin & Şengül, 2006). New policies produced in the field of education are adopted by the member states, and cooperation and solidarity are encouraged on the international platform.

The European Union has turned education and training systems into an important strategic element towards its goal of becoming a competitive and knowledge-oriented economy. In 2002, at the European Council meeting in Barcelona, the countries led by the European Union adopted the "Lisbon 2010" strategy, which aims to assume a world leadership role in education and training by 2010. This strategy centred on educational developments in order for Europe to achieve globally competitive and sustainable economic growth.

In order to monitor the progress of member states and to improve the quality of education, the European Union established the "Group on Measuring Progress through Indicators and Mutual Assessments" in 2002. This group continues its activities in cooperation with international organisations such as Eurostat (European Statistical Centre), Eurydice (EU Education Information Network), Cedefop (European Centre for the Development of Vocational Education) and OECD (Organisation for Economic Cooperation and Development). In this context, the European Union has identified four main areas and sixteen indicators for these areas in order to improve the quality of education. The areas and indicators determining the quality in education in Table 1 serve as a guide for achieving these strategic goals.

Table 1. Areas and indicators on quality of school education

Area	Indicator
Attainment	1. Mathematics 2. Reading 3. Science 4. Information and communication technologies (ICT) 5. Foreign languages 6. Learning to learn 7. Civics
Success and Transition	8. Drop out 9. Completion of upper secondary education 10. Participation in tertiary education
Monitoring of Education	11. Evaluation and steering of school education 12. Parental participation
Resources and Structures	13. Education and training of teachers 14. Participation in pre-primary education 15. Number of students per computer 16. Educational expenditure per student

Source: European Commission, 2000.

As one of the candidate countries to the European Union, Türkiye has declared that it wants to

harmonise with the European Union education policies while developing national policies on education (Topsakal & Hesapçıoğlu, 2001, p. 459 as cited in Gültekin & Şengül, 2006). In this context, Türkiye's education system is also subjected to an important evaluation. Our country has witnessed many changes and developments in education from past to present. However, in today's world of increasing international competition, the question of how compatible and competitive Türkiye's education system has become with international standards remains on the agenda. In order to find the answer to this question, it is important to make an evaluation by considering basic indicators such as mathematics, science, reading skills and foreign languages.

In this study, the performance of the Turkish education system in terms of achievement, equality and improvement is evaluated by using current data and analyses based on some of these areas identified by the European Union, and solutions are discussed within the framework of the current situation. This review not only identifies the strengths of the Turkish education system in terms of the European Union indicators, but also emphasises its potential for improvement and can provide guidance in creating an education system closer to international standards. In this context, Türkiye's position and future in the journey towards achieving the strategic goals of the European Union in education is within the scope of this study.

In this assessment process, we focused on critical areas that stand out in international standards such as mathematics, science, reading skills and foreign language as key indicators. Maths, science and reading skills are a strong reflection of a student's cognitive abilities, analytical thinking capacity and overall academic success. These basic skills play a decisive role in determining not only the academic success of students, but also their future careers and contributions.

Mathematics is one of the cornerstones of modern society and a student's competence in this area can directly influence the likelihood of success in careers such as science, technology, engineering and maths (STEM) (Ben-Jacob, 2019). Science is important for understanding nature and the ability to find solutions to global problems that need to be solved (Bevins & Price, 2016). Reading skills are vital for accessing information and developing critical thinking and communication skills (Mourgues, Preiss & Grigorenko, 2014). Foreign language skills can increase intercultural understanding by reflecting the ability of individuals to communicate effectively on international platforms in a globalised world (Gao, 2006). At the same time, it can provide competitive advantage in the business world and facilitate international cooperation.

These four core skills represent critical elements that can support students to become successful individuals not only at the national level but also internationally. Therefore, selecting these indicators when evaluating Türkiye's education system provides a meaningful framework for determining its position in international competition and assessing the overall effectiveness of the education system.

Accordingly, this study seeks to answer the following questions:

(1) How are the mathematics skills of students in the Turkish education system in the world rankings?
(2) How are the science skills of students in the Turkish education system in the world rankings?

(3) How are the reading skills of students in the Turkish education system in the world rankings?
(4) How are the foreign language skills of students in the Turkish education system in the world rankings?

Method

The current study employs the method of document analysis. Fischer (2006) defines document analysis as a systematic procedure that requires the review or evaluation of both printed and electronic documents. Document analysis, one of the qualitative research methods, requires the examination and interpretation of data for the purposes of generating meaning, gaining understanding and developing empirical knowledge (Bowen, 2009). In this context, we used the method of document analysis in this study, which aims to examine the Turkish education system in terms of mathematics, science, reading and foreign language skills, which are among the European Union's quality determining areas and indicators in education. Therefore, we analysed PISA 2022 report and EF EPI (EF English Proficiency Index) 2023 report in this line.

Among the achievement indicators, mathematics, reading and science are regularly measured by PISA. Türkiye has been regularly participating in PISA, a triennial international research programme conducted by the OECD to assess the knowledge and skills acquired by 15-year-old students, since 2003. In Türkiye, one of the 81 countries participating in the PISA study in 2022, the PISA application took place between 19 April and 13 May 2022. The application was carried out with the computer-based participation of 20227 thousand 250 students from 196 schools in 60 provinces.

Among the indicators of success, the most up-to-date data on the current state of foreign language skills are measured by the foreign language exam regularly conducted by a private education company called Education First (EF). The exam, which is conducted online by this company in non-native English-speaking countries, is recognised as the most reliable indicator of foreign language skills in the international arena (Koru & Akesson, 2011). In the 2022 EF English proficiency exam, which is the basis of the 2023 report, a total of 2.2 million people from 113 countries, 55% of whom were female and 45% male took the English test, and the average age of the participants was 26.

Findings

In this part of the study, the findings obtained as a result of document analysis are discussed under the headings that answer the research questions.

Mathematics

Mathematics is a network that has an internal consistency and a certain order and is closely related to other disciplines and our daily lives. In this respect, mathematics is considered as an important element of education in terms of developing the ability to think (Umay, 2003). Mathematics education aims to raise individuals who not only have mathematical knowledge but also can solve problems, produce solutions, use information effectively, have communication skills, practice mathematics and enjoy this process. These goals lead to compulsory changes in education (Olkun & Toluk, 2003). In recent years, the education programmes in the Turkish education system have been updated and revised in accordance with the necessary changes. In this context, among the specific aims of the primary and secondary

school mathematics curriculum, the article "Students will be able to develop and effectively use mathematical literacy skills" stands out (MoNE, 2018).

In PISA 2022, there are four basic processes to measure mathematical skills. These processes are (i) mathematical reasoning, (ii) formulating situations mathematically, (iii) using mathematical concepts, facts and processes, and (iv) interpreting, applying and evaluating mathematical outputs. A mathematics subscale was developed for each of the four mathematical processes examined in PISA 2022. Each of the items in the PISA mathematics test is designed to measure one of these processes. Table 2 shows the average mathematics scores of 81 countries participating in PISA 2022 and their rankings in this area.

Table 2. Mathematics performance at national and sub-national level in PISA 2022

	Mean score	95% Confidence interval	All countries/ economies		OECD countries	
			Upper rank	Lower rank	Upper rank	Lower rank
Singapore	575	572 - 577	1	1		
Macao (China)	552	550 - 554	2	4		
Chinese Taipei	547	540 - 554	2	6		
Hong Kong (China)	540	534 - 546	2	6		
Japan	536	530 - 541	3	6	1	2
Korea	527	520 - 535	3	7	1	2
Quebec (Canada)	514	506 - 521				
Estonia	510	506 - 514	6	9	3	4
Switzerland	508	504 - 512	7	10	3	5
Alberta (Canada)	504	492 - 515				
Flemish community (Belgium)	501	495 - 507				
Castile and Leon (Spain)	499	492 - 507				
Canada*	497	494 - 500	8	18	5	13
British Columbia (Canada)	496	488 - 505				
Ontario (Canada)	495	489 - 501				
Asturias (Spain)	495	486 - 504				
Cantabria (Spain)	495	486 - 504				
Madrid (Spain)	494	487 - 501				
Netherlands	493	485 - 500	7	26	4	20
La Rioja (Spain)	493	485 - 501				
Navarre (Spain)	492	484 - 501				
England (United Kingdom)	492	487 - 497				
Ireland	492	488 - 496	9	22	5	18
Trento (Italy)	491	487 - 494				
Belgium	489	485 - 494	9	24	5	20
Denmark	489	485 - 493	9	24	5	19
United Kingdom	489	485 - 493	9	24	5	20
Poland	489	485 - 493	9	24	5	20
Austria	487	483 - 492	9	28	5	20
Australia	487	484 - 491	9	25	6	20
Czech Republic	487	483 - 491	9	26	5	20
Aragon (Spain)	487	478 - 496				
Galicia (Spain)	486	479 - 494				
Slovenia	485	482 - 487	10	28	6	21
Finland	484	480 - 488	10	30	6	24
German-speaking community (Belgium)	483	473 - 494				
Latvia	483	479 - 487	10	32	6	25
Basque Country (Spain)	482	474 - 490				

Sweden	482	478 - 486	10	32	6	27
Bolzano (Italy)	482	476 - 488				
Northern (Viet Nam)	480	467 - 494				
New Zealand	479	475 - 483	11	33	7	28
Prince Edward Island (Canada)	478	465 - 491				
Lithuania	475	472 - 479	18	36	16	29
Northern Ireland (United Kingdom)	475	469 - 481				
Germany	475	469 - 481	11	37	8	30
France	474	469 - 479	16	37	15	29
French community (Belgium)	474	468 - 480				
Spain	473	470 - 476	21	36	18	29
Hungary	473	468 - 478	19	37	16	30
Comunidad Valenciana (Spain)	473	465 - 480				
Portugal	472	467 - 477	20	37	17	30
Italy	471	465 - 477	18	38	16	31
Balearic Islands (Spain)	471	463 - 478				
Scotland (United Kingdom)	471	465 - 476				
Manitoba (Canada)	470	465 - 476				
Nova Scotia (Canada)	470	463 - 477				
Viet Nam	469	462 - 477	16	39		
Catalonia (Spain)	469	458 - 481				
Extremadura (Spain)	469	459 - 479				
Norway	468	464 - 472	23	38	19	31
New Brunswick (Canada)	468	462 - 474				
Saskatchewan (Canada)	468	462 - 473				
Malta	466	463 - 469	24	38		
Wales (United Kingdom)	466	460 - 472				
United States	465	457 - 473	21	39	18	32
Slovak Republic	464	458 - 470	24	39	20	32
Castile-La Mancha (Spain)	464	457 - 470				
Southern (Viet Nam)	463	450 - 477				
Murcia (Spain)	463	455 - 472				
Croatia	463	458 - 468	24	39		
Central (Viet Nam)	461	449 - 474				
Iceland	459	456 - 462	30	40	26	32
Newfoundland and Labrador (Canada)	459	448 - 469				
Israel	458	451 - 464	26	41	23	32
Andalusia (Spain)	457	448 - 467				
Türkiye	453	450 - 456	33	41	28	32
Almaty (Kazakhstan)	453	440 - 465				
Astana (Kazakhstan)	449	434 - 463				
Canary Islands (Spain)	447	438 - 456				
Central (Mongolia)	443	436 - 449				
Brunei Darussalam	442	440 - 444	40	43		
Ukrainian regions (18 of 27)	441	433 - 449	37	47		
North-Kazakhstan region (Kazakhstan)	441	431 - 451				
Kostanay region (Kazakhstan)	440	424 - 456				
Serbia	440	434 - 446	38	46		
Aktobe region (Kazakhstan)	437	429 - 445				
Zhambyl region (Kazakhstan)	433	422 - 444				
East-Kazakhstan region (Kazakhstan)	432	418 - 446				
United Arab Emirates	431	429 - 433	41	48		
Greece	430	426 - 435	41	48	33	33
Romania	428	420 - 436	40	53		

Pavlodar region (Kazakhstan)	426	416 - 435				
Kazakhstan	425	422 - 429	42	50		
Mongolia	425	420 - 430	41	52		
West-Kazakhstan region (Kazakhstan)	424	417 - 432				
Bogota (Colombia)	423	413 - 432				
Karagandy region (Kazakhstan)	421	412 - 429				
Akmola region (Kazakhstan)	419	408 - 430				
Cyprus	418	416 - 421	45	54		
Bulgaria	417	411 - 424	43	55		
Moldova	414	410 - 419	45	55		
Qatar	414	412 - 416	46	54		
Kyzyl-Orda region (Kazakhstan)	414	404 - 423				
Almaty region (Kazakhstan)	412	403 - 421				
Chile	412	408 - 416	46	55	34	34
Khangai (Mongolia)	409	397 - 421				
Uruguay	409	405 - 413	48	56		
Malaysia	409	404 - 413	47	58		
Shymkent (Kazakhstan)	407	397 - 416				
Montenegro	406	403 - 408	50	58		
Atyrau region (Kazakhstan)	405	393 - 417				
Melilla (Spain)	404	392 - 416				
Baku (Azerbaijan)	397	392 - 402	53	64		
Mexico	395	391 - 399	54	64	35	37
Ceuta (Spain)	395	382 - 407				
Thailand	394	389 - 399	54	65		
South (Brazil)	394	387 - 401				
Peru	391	387 - 396	56	65		
Georgia	390	385 - 395	56	67		
Turkestan region (Kazakhstan)	389	375 - 403				
Saudi Arabia	389	385 - 392	56	66		
North Macedonia	389	387 - 390	56	65		
Southeast (Brazil)	388	383 - 394				
Costa Rica	385	381 - 388	56	67	35	37
Middle-West (Brazil)	384	370 - 397				
Colombia	383	377 - 389	56	69	35	37
Western (Mongolia)	381	372 - 391				
Brazil	379	376 - 382	62	69		
Argentina	378	373 - 382	61	71		
Jamaica	377	371 - 384	58	72		
Albania	368	364 - 372	64	75		
Palestinian Authority	366	362 - 369	66	75		
Indonesia	366	361 - 370	66	76		
Morocco	365	358 - 371	64	76		
Uzbekistan	364	360 - 368	67	76		
Northeast (Brazil)	363	356 - 369				
Jordan	361	357 - 365	68	76		
North (Brazil)	357	348 - 366				
Panama	357	351 - 362	68	78		
Kosovo	355	353 - 357	70	76		
Philippines	355	350 - 360	68	78		
Guatemala	344	340 - 349	75	81		
El Salvador	343	340 - 347	75	81		
Dominican Republic	339	336 - 342	77	81		
Paraguay	338	333 - 342	77	81		

Cambodia	336	331 - 342	77	81

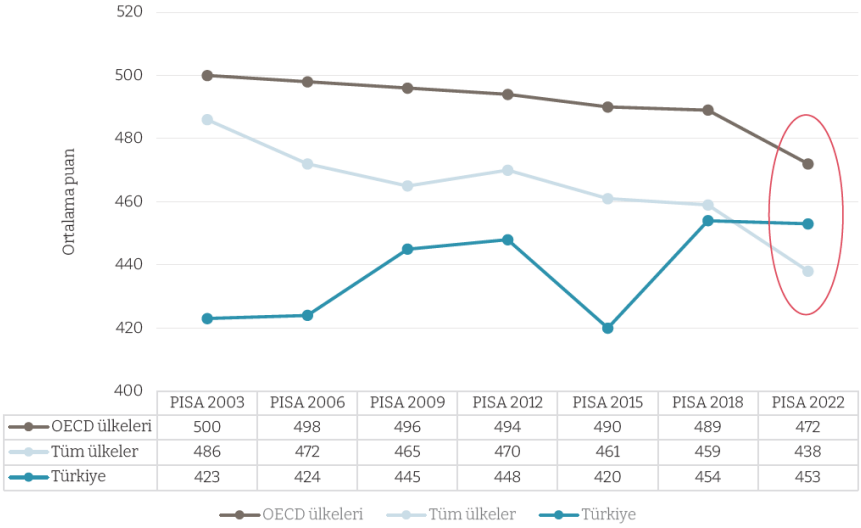
Source: OECD (2022). *PISA 2022 Results (Volume I).*

As is seen in Table 2, the average scores of 81 countries participating in PISA 2022 in mathematics vary between 336 and 575. The average score of the 81 participating countries in mathematics is 438, while the average score of 37 OECD countries in mathematics is 472. The top five countries with the highest performance in mathematics are Singapore, Macau (China), Taiwan (China), Hong Kong (China) and Japan. The five lowest performing countries are Cambodia, Paraguay, Dominican Republic, El Salvador and Guatemala. The performance gap between the highest and lowest performing countries in mathematics is 153 points among OECD countries and 239 points among all countries participating in PISA 2022.

Türkiye's average score in mathematics is 453. While Türkiye's average score is above the average of all participating countries, it is below the average of OECD countries. Türkiye ranked 39th among 81 countries participating in PISA 2022 in mathematics and 32nd among 37 OECD countries. Türkiye outperformed a total of 42 countries in mathematics, including five OECD countries, namely Greece, Chile, Mexico, Costa Rica and Colombia.

Graph 1 shows the average scores of OECD countries, all countries and Türkiye in mathematics in the PISA applications between 2003 and 2022.

Graph 1. Performance in mathematics in PISA cycles between 2003-2022



	PISA 2003	PISA 2006	PISA 2009	PISA 2012	PISA 2015	PISA 2018	PISA 2022
OECD ülkeleri	500	498	496	494	490	489	472
Tüm ülkeler	486	472	465	470	461	459	438
Türkiye	423	424	445	448	420	454	453

Source: MEB (2023). *PISA 2022 Türkiye Raporu (*PISA 2022 Türkiye Report).

Graph 1 shows that Türkiye's average score in mathematics in the PISA cycles between 2003 and 2022 was between 423 and 454. Between 2003 and 2012, Türkiye's average mathematics score tended to increase and then decreased in 2015. Türkiye's average mathematics score, which reached its highest level in PISA 2018, decreased by 1 point in 2022 compared to 2018. However, the difference between the average mathematics scores in PISA 2018 and 2022 is not statistically significant. Accordingly, Türkiye's average mathematics scores in PISA 2018 and 2022 are at the same level.

Science

Science is an expression of the process of thinking about knowledge, understanding existing knowledge and producing new knowledge in the context of natural sciences (YÖK/World Bank, 1997). In other words, science is at the centre of the knowledge and skills that develop people's ability to understand and interpret the environment they live in and trigger the idea of seeking regularity in a complex environment (Hançer, Şensoy, & Yıldırım, 2003).

Science skills include many important skills such as scientific thinking, problem solving, technological contribution, sensitivity to environmental problems, analytical thinking, critical evaluation, participatory citizenship and broad career opportunities. These skills help individuals to make effective decisions in their daily lives, contribute to social problems and make significant contributions to their general development.

Science literacy, defined within the scope of PISA research, is evaluated as the ability of students to engage with science-related topics and to think about scientific phenomena. Science literacy requires the ability to explain phenomena scientifically, design and evaluate scientific inquiry methods, and interpret data and findings scientifically.

In PISA, science literacy focuses on the capacity of 15-year-old students to demonstrate types of knowledge appropriately in personal, local, national and global contexts. In this respect, science literacy assessed in PISA refers to a broader scope than the science curriculum taught in schools.

Within the framework of PISA science literacy assessment, PISA research takes an approach to assessing the science literacy of 15-year-old students. The use of the term “science literacy” in PISA shows the importance given to the application of scientific knowledge in the context of real-world situations.

This assessment framework for science literacy was updated in PISA 2015 and this updated framework was used in PISA 2015, 2018 and 2022. The dimensions of science literacy in the assessment framework are listed as competences, types of scientific knowledge and general content areas (real life contexts).

Table 3 shows the average score of 81 countries participating in the PISA 2022 application in the field of science literacy and their rankings in this field.

Table 3. Science performance at national and sub-national level in PISA 2022

	Mean score	95% Confidence interval	All countries/economies		OECD countries	
			Upper rank	Lower rank	Upper rank	Lower rank
Singapore	561	559 - 564	1	1		
Japan	547	541 - 552	2	5	1	1
Macao (China)	543	541 - 545	2	5		
Chinese Taipei	537	531 - 544	2	7		
Alberta (Canada)	534	520 - 547				
Korea	528	521 - 535	2	9	2	5
Estonia	526	522 - 530	4	8	2	4
Hong Kong (China)	520	515 - 526	4	11		
British Columbia (Canada)	519	509 - 528				
Ontario (Canada)	517	510 - 524				

Canada	515	511 - 519	5	13	2	9
Quebec (Canada)	512	504 - 520				
Finland	511	506 - 516	6	18	3	14
Australia	507	503 - 511	7	21	4	15
Castile and Leon (Spain)	506	498 - 515				
Galicia (Spain)	506	496 - 516				
New Zealand	504	500 - 509	8	25	4	20
Cantabria (Spain)	504	493 - 515				
Ireland	504	499 - 508	8	25	4	20
Asturias (Spain)	503	491 - 515				
England (United Kingdom)	503	497 - 508				
Switzerland	503	498 - 507	9	25	5	21
Madrid (Spain)	502	495 - 510				
Slovenia	500	497 - 503	9	26	5	21
United Kingdom	500	495 - 504	9	27	5	23
La Rioja (Spain)	500	481 - 518				
Aragon (Spain)	499	489 - 510				
United States	499	491 - 508	7	32	4	26
Poland	499	494 - 504	9	28	5	23
Flemish community (Belgium)	499	493 - 506				
Czech Republic	498	493 - 502	9	29	5	24
Prince Edward Island (Canada)	496	470 - 522				
Trento (Italy)	495	491 - 499				
Bolzano (Italy)	495	486 - 504				
Latvia	494	489 - 498	11	32	7	26
Denmark	494	489 - 499	10	32	7	26
Saskatchewan (Canada)	494	488 - 500				
Sweden	494	489 - 498	11	32	7	26
Germany	492	486 - 499	10	35	6	28
Manitoba (Canada)	492	484 - 500				
Nova Scotia (Canada)	492	484 - 500				
Newfoundland and Labrador (Canada)	491	481 - 502				
Austria	491	486 - 496	11	33	7	28
Belgium	491	486 - 495	11	34	9	28
Navarre (Spain)	489	478 - 500				
Northern Ireland (United Kingdom)	488	482 - 495				
Netherlands	488	480 - 496	10	35	7	29
German-speaking community (Belgium)	487	470 - 505				
France	487	482 - 493	14	35	11	29
Hungary	486	481 - 491	15	35	11	29
Spain	485	481 - 488	18	35	14	29
Lithuania	484	480 - 489	17	35	14	29
Portugal	484	479 - 489	16	35	13	29
Scotland (United Kingdom	483	477 - 489				
Comunidad Valenciana (Spain)	483	474 - 492				
New Brunswick (Canada)	483	474 - 491				
Croatia	483	478 - 487	18	35		
Murcia (Spain)	482	471 - 492				
Balearic Islands (Spain)	480	470 - 490				
Basque Country (Spain)	480	470 - 489				
French community (Belgium)	479	472 - 486				
Extremadura (Spain)	479	467 - 492				
Norway	478	474 - 483	22	37	18	30
Northern (Viet Nam)	478	466 - 489				

Italy	477	471 - 484	18	38	18	31
Catalonia (Spain)	477	466 - 489				
Türkiye	476	472 - 480	24	38	21	31
Castile-La Mancha (Spain)	475	466 - 484				
Southern (Viet Nam)	474	462 - 486				
Andalusia (Spain)	473	464 - 483				
Wales (United Kingdom)	473	465 - 480				
Canary Islands (Spain)	473	463 - 482				
Viet Nam	472	465 - 479	23	38		
Malta	466	462 - 469	33	39		
Israel	465	458 - 471	32	40	27	31
Central (Viet Nam)	463	450 - 475				
Slovak Republic	462	456 - 468	32	40	28	31
Bogota (Colombia)	459	448 - 470				
Almaty (Kazakhstan)	458	446 - 470				
Astana (Kazakhstan)	455	440 - 470				
Kostanay region (Kazakhstan)	455	438 - 471				
Ukrainian regions (18 of 27)	450	443 - 458	36	46		
North-Kazakhstan region (Kazakhstan)	450	439 - 461				
Serbia	447	442 - 453	37	46		
Iceland	447	443 - 450	39	45	32	34
Brunei Darussalam	446	443 - 448	39	45		
Chile	444	439 - 448	39	48	32	34
East-Kazakhstan region (Kazakhstan)	441	427 - 455				
Greece	441	435 - 446	39	48	32	34
Uruguay	435	431 - 440	39	50		
Qatar	432	430 - 435	43	50		
Pavlodar region (Kazakhstan)	432	420 - 444				
United Arab Emirates	432	429 - 435	43	50		
Central (Mongolia)	430	425 - 435				
Akmola region (Kazakhstan)	428	416 - 441				
Romania	428	420 - 435	41	58		
Karagandy region (Kazakhstan)	427	418 - 436				
Aktobe region (Kazakhstan)	425	416 - 434				
West-Kazakhstan region (Kazakhstan)	424	416 - 432				
Kazakhstan	423	420 - 427	45	55		
Bulgaria	421	415 - 427	45	61		
South (Brazil)	421	412 - 430				
Moldova	417	412 - 422	48	61		
Malaysia	416	412 - 421	48	61		
Melilla (Spain)	414	392 - 437				
Almaty region (Kazakhstan)	414	403 - 425				
Southeast (Brazil)	413	406 - 419				
Mongolia	412	408 - 417	48	63		
Colombia	411	405 - 418	48	63	35	37
Costa Rica	411	406 - 416	48	63	35	37
Cyprus	411	408 - 414	49	63		
Middle-West (Brazil)	411	395 - 426				
Ceuta (Spain)	410	385 - 436				
Mexico	410	405 - 415	49	63	35	37
Thailand	409	404 - 415	49	63		
Peru	408	403 - 413	50	63		
Shymkent (Kazakhstan)	407	395 - 419				
Argentina	406	401 - 411	50	63		

Atyrau region (Kazakhstan)	406	395 - 417		
Montenegro	403	401 - 405	53	64
Brazil	403	399 - 407	53	64
Jamaica	403	395 - 411	50	66
Kyzyl-Orda region (Kazakhstan)	402	393 - 411		
Zhambyl region (Kazakhstan)	400	390 - 410		
Khangai (Mongolia)	396	385 - 408		
Saudi Arabia	390	387 - 394	63	68
Turkestan region (Kazakhstan)	389	377 - 401		
Panama	388	381 - 395	61	73
Northeast (Brazil)	386	378 - 394		
Georgia	384	380 - 389	63	73
Indonesia	383	378 - 388	64	74
Baku (Azerbaijan)	380	376 - 384	64	76
North Macedonia	380	378 - 382	65	74
North (Brazil)	380	367 - 392		
Albania	376	372 - 380	65	76
Jordan	375	370 - 379	65	76
El Salvador	373	368 - 378	65	78
Guatemala	373	369 - 377	65	77
Palestinian Authority	369	365 - 373	69	78
Paraguay	368	364 - 372	69	78
Western (Mongolia)	367	358 - 375		
Morocco	365	359 - 372	67	80
Dominican Republic	360	356 - 364	72	80
Kosovo	357	355 - 359	76	81
Philippines	356	350 - 362	73	81
Uzbekistan	355	351 - 359	76	81
Cambodia	347	343 - 351	78	81

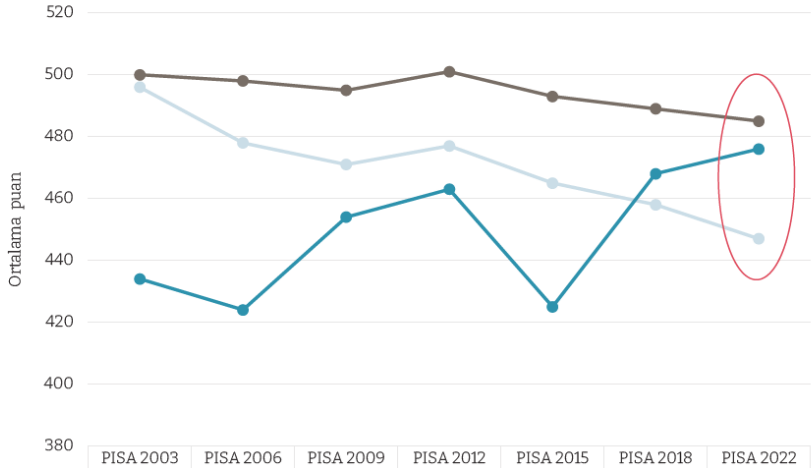
Source: OECD (2022). *PISA 2022 Results (Volume I).*

As is seen in Table 3, the average science scores of 81 countries participating in PISA 2022 are between 347 and 561 points. The average score of all participating countries in science is 447, while the average score of OECD countries in science is 485. Among all countries participating in PISA 2022, the top five countries with the highest average scores in science are Singapore, Japan, Macau (China), Taiwan (China) and South Korea. The countries with the lowest average scores in this area are Dominican Republic, Kosovo, Philippines, Uzbekistan and Cambodia. The difference between the highest and lowest performing countries in science is 214 points among all countries and 137 points among OECD countries.

In PISA 2022, Türkiye's average score in science is 476. Moreover, there is no significant difference between Türkiye's average score in this field and the average scores of Norway, Italy and Vietnam. In other words, the performance of students in Türkiye in science is similar to the performance of students in Norway, Italy and Vietnam. While Türkiye's average score in science is above the average of all countries, it is below the average of OECD countries. Türkiye ranks 34th among 81 countries and 29th among 37 OECD countries in science. Türkiye ranks higher in science than 47 countries in total, including eight OECD countries, Israel, Slovakia, Iceland, Chile, Greece, Colombia, Costa Rica and Mexico.

Graph 2 shows the change in science performance of OECD countries, all countries and Türkiye in PISA applications between 2003 and 2022.

Graph 2. Performance in science in PISA cycles between 2003-2022



	PISA 2003	PISA 2006	PISA 2009	PISA 2012	PISA 2015	PISA 2018	PISA 2022
OECD ülkeleri	500	498	495	501	493	489	485
Tüm ülkeler	496	478	471	477	465	458	447
Türkiye	434	424	454	463	425	468	476

Source: MEB (2023). *PISA 2022 Türkiye Raporu (*PISA 2022 Türkiye Report).

Graph 2 shows that Türkiye's average score in science between 2003 and 2022 is between 424 and 476. Türkiye's average science scores in PISA applications, which increased between 2006 and 2012, decreased in 2015. However, in PISA 2018, Türkiye increased its average score in science the most among all countries. With the 8-point increase in PISA 2022, Türkiye's average performance in science reached the highest level since 2003.

Reading

Reading skill is defined as making meaning from a read text and interpreting it (Grabe & Stoller, 2002). Reading skills include the ability to understand, use, evaluate, associate and think deeply about the texts presented in order to achieve one's goals, develop one's knowledge and potential, and interact with society (MoNE, 2023).

Reading skills provide individuals with the ability to access a wide range of information, understand course content and increase their engagement in learning. It also improves language skills and gives the ability to communicate more effectively. It increases critical thinking and provides the ability to analyse texts and evaluate various views. It develops the ability to understand and synthesise written materials, which is important for success in business life. At the same time, it supports individuals to be conscious participants in social issues, provides the opportunity to understand current events and to participate effectively in democratic processes. For these reasons, reading skills make a significant contribution to individuals' personal, academic, social and professional development.

The importance of reading skills has greatly increased in recent years due to the growing influence and rapid change of technology. The reading skills needed 20 years ago in areas such as individual development, academic achievement, economic participation and citizenship are different from the reading skills needed today in terms of quality and content, because today reading is done not only from written sources but also from electronic sources.

Within the scope of the PISA research, reading skill refers to the totality of competencies that will enable the reader to internalise and relate the information in one or more texts given for a

certain purpose beyond expressing the text aloud. In addition to having a certain proficiency in reading, students are also expected to be able to read for various purposes and to have high reading motivation.

The average score of 81 countries participating in PISA 2022 in the field of reading skills and the ranking of countries in this field are presented in Table 4.

Table 4. Reading performance at national and sub-national level in PISA 2022

	Mean score	95% Confidence interval	All countries/economies		OECD countries	
			Upper rank	Lower rank	Upper rank	Lower rank
Singapore	543	539 - 546	1	1		
Alberta (Canada)	525	512 - 537				
Ireland	516	511 - 521	2	9	1	6
Japan	516	510 - 522	2	11	1	6
Korea	515	508 - 523	2	12	1	7
Chinese Taipei	515	509 - 522	2	11		
Ontario (Canada)	512	504 - 519				
Estonia	511	506 - 516	2	12	1	7
British Columbia (Canada)	511	499 - 522				
Macao (China)	510	508 - 513	2	11		
Canada	507	503 - 511	2	13	1	8
United States	504	495 - 512	2	18	1	14
Quebec (Canada)	501	492 - 510				
New Zealand	501	497 - 505	3	17	3	12
Hong Kong (China)	500	494 - 505	3	18		
Australia	498	494 - 502	6	18	5	14
Castile and Leon (Spain)	498	489 - 507				
Asturias (Spain)	497	486 - 508				
Prince Edward Island (Canada)	496	476 - 517				
England (United Kingdom)	496	491 - 502				
Madrid (Spain)	496	488 - 504				
United Kingdom	494	490 - 499	8	22	6	17
Cantabria (Spain)	494	482 - 506				
Trento (Italy)	494	490 - 498				
Scotland (United Kingdom)	493	486 - 499				
Finland	490	486 - 495	9	26	6	20
Nova Scotia (Canada)	489	477 - 501				
Denmark	489	484 - 494	9	30	6	23
Poland	489	483 - 494	9	30	6	24
Czech Republic	489	484 - 493	9	28	7	23
Aragon (Spain)	488	477 - 498				
Sweden	487	482 - 492	10	30	7	25
La Rioja (Spain)	487	472 - 502				
Manitoba (Canada)	486	478 - 493				
Galicia (Spain)	485	476 - 495				
Northern Ireland (United Kingdom)	485	479 - 492				
Saskatchewan (Canada)	484	476 - 492				
Switzerland	483	479 - 488	13	32	9	27
Flemish community (Belgium)	483	476 - 490				
Bolzano (Italy)	482	470 - 494				
Comunidad Valenciana (Spain)	482	474 - 490				

Italy	482	476 - 487	13	33	9	27
Austria	480	475 - 486	13	34	10	28
Germany	480	473 - 487	13	34	9	29
Belgium	479	474 - 484	14	34	10	28
Newfoundland and Labrador (Canada)	478	464 - 492				
Navarre (Spain)	478	463 - 492				
Portugal	477	471 - 482	14	34	10	29
Norway	477	472 - 482	14	34	11	29
Croatia	475	471 - 480	15	34		
Latvia	475	470 - 479	16	34	13	29
Spain	474	471 - 478	19	34	15	29
France	474	468 - 480	15	34	11	29
Israel	474	467 - 481	14	34	11	29
French community (Belgium)	474	466 - 481				
Hungary	473	467 - 479	16	34	14	29
Lithuania	472	468 - 476	19	34	15	29
Balearic Islands (Spain)	472	459 - 484				
Northern (Viet Nam)	469	457 - 482				
New Brunswick (Canada)	469	461 - 477				
Slovenia	469	465 - 472	20	34	17	29
Murcia (Spain)	468	458 - 478				
Extremadura (Spain)	468	456 - 481				
Castile-La Mancha (Spain)	468	459 - 477				
German-speaking community (Belgium)	467	448 - 485				
Basque Country (Spain)	466	457 - 476				
Wales (United Kingdom)	466	458 - 473				
Canary Islands (Spain)	463	452 - 474				
Catalonia (Spain)	462	450 - 475				
Bogota (Colombia)	462	451 - 474				
Viet Nam	462	454 - 470				
Southern (Viet Nam)	461	448 - 474				
Andalusia (Spain)	461	451 - 471				
Netherlands	459	451 - 468	21	40	19	32
Türkiye	456	452 - 460	34	38	29	32
Central (Viet Nam)	452	438 - 466				
Chile	448	443 - 453	34	42	29	34
Slovak Republic	447	441 - 453	34	43	29	34
Malta	445	442 - 449	34	43		
Serbia	440	435 - 446	35	45		
Greece	438	433 - 444	35	45	31	34
Iceland	436	432 - 440	36	45	31	34
Uruguay	430	426 - 435	39	47		
Brunei Darussalam	429	427 - 432	39	45		
Romania	428	421 - 436	36	54		
Ukrainian regions (18 of 27)	428	420 - 435	37	54		
Kostanay region (Kazakhstan)	427	410 - 443				
South (Brazil)	427	418 - 435				
Astana (Kazakhstan)	424	410 - 438				
Middle-West (Brazil)	424	406 - 442				
Almaty (Kazakhstan)	423	412 - 435				
Southeast (Brazil)	420	413 - 427				
Qatar	419	416 - 422	43	55		
United Arab Emirates	417	415 - 420	44	55		
North-Kazakhstan region (Kazakhstan)	417	405 - 429				

Mexico	415	410 - 421	43	57	35	37
Costa Rica	415	410 - 420	44	57	35	37
Moldova	411	406 - 416	44	57		
East-Kazakhstan region (Kazakhstan)	410	396 - 425				
Brazil	410	406 - 414	44	57		
Jamaica	410	401 - 418	44	58		
Colombia	409	401 - 416	44	58	35	37
Peru	408	403 - 414	44	58		
Melilla (Spain)	405	386 - 424				
Montenegro	405	402 - 408	48	58		
Ceuta (Spain)	404	383 - 426				
Bulgaria	404	398 - 411	46	59		
Karagandy region (Kazakhstan)	402	393 - 411				
Argentina	401	396 - 406	48	59		
Pavlodar region (Kazakhstan)	400	387 - 412				
Akmola region (Kazakhstan)	399	386 - 413				
Central (Mongolia)	398	392 - 404				
Northeast (Brazil)	392	385 - 400				
Panama	392	385 - 399	52	64		
Malaysia	388	383 - 393	56	67		
West-Kazakhstan region (Kazakhstan)	387	377 - 398				
Kazakhstan	386	383 - 390	58	65		
Aktobe region (Kazakhstan)	383	375 - 391				
Saudi Arabia	383	379 - 386	58	67		
North (Brazil)	382	370 - 395				
Cyprus	381	379 - 383	58	67		
Thailand	379	373 - 384	58	69		
Mongolia	378	374 - 383	58	69		
Atyrau region (Kazakhstan)	378	366 - 390				
Almaty region (Kazakhstan)	375	364 - 386				
Guatemala	374	369 - 379	59	70		
Georgia	374	369 - 378	60	70		
Paraguay	373	368 - 378	60	70		
Shymkent (Kazakhstan)	366	355 - 377				
Baku (Azerbaijan)	365	360 - 370	63	73		
El Salvador	365	359 - 370	63	74		
Kyzyl-Orda region (Kazakhstan)	364	356 - 371				
Khangai (Mongolia)	363	353 - 373				
Indonesia	359	353 - 364	65	76		
North Macedonia	359	357 - 360	68	74		
Albania	358	355 - 362	68	75		
Zhambyl region (Kazakhstan)	353	343 - 363				
Dominican Republic	351	347 - 356	68	78		
Palestinian Authority	349	345 - 353	71	78		
Turkestan region (Kazakhstan)	347	333 - 360				
Philippines	347	340 - 353	69	79		
Kosovo	342	340 - 344	73	79		
Jordan	342	337 - 347	73	80		
Morocco	339	332 - 347	72	80		
Uzbekistan	336	332 - 339	75	80		
Cambodia	329	325 - 333	77	80		
Western (Mongolia)	326	318 - 335				

Source: OECD (2022). *PISA 2022 Results (Volume I).*

As is seen in Table 4, the average scores of 81 countries participating in PISA 2022 in the field of reading skills are between 329 and 543. The average score of 81 participating countries in reading skills was 435, while the average score of OECD countries in this area was 476. The top five countries with the highest performance in reading skills are Singapore, Ireland, Japan, South Korea and Taiwan (China). The five lowest performing countries are Cambodia, Uzbekistan, Morocco, Jordan and Kosovo. The average score difference between the highest and lowest performing countries in reading skills is 214 points among all countries participating in PISA 2022 and 107 points among OECD countries.

Türkiye's average score in reading skills is 456. There is no significant difference between Türkiye's average score and the average scores of Vietnams and the Netherlands. In other words, the performance of students in Türkiye in reading skills is similar to the performance of students in Vietnam and the Netherlands. While Türkiye's average score is higher than the average score of participating countries, it is below the average score of OECD countries. Türkiye ranks 36th among 81 countries participating in PISA 2022 in reading skills and 30th among 37 OECD countries. With this performance, Türkiye ranked higher than 45 countries, including seven OECD countries, namely Chile, Slovakia, Greece, Iceland, Mexico, Costa Rica and Colombia.

Graph 3 shows the change in reading performance of OECD countries, all countries and Türkiye in PISA applications between 2003 and 2022.

Graph 3. Performance in reading skills in PISA cycles between 2003-2022

	PISA 2003	PISA 2006	PISA 2009	PISA 2012	PISA 2015	PISA 2018	PISA 2022
OECD ülkeleri	494	492	493	496	493	487	476
Tüm ülkeler	482	465	464	471	460	453	435
Türkiye	441	447	464	475	428	466	456

Source: MEB (2023). *PISA 2022 Türkiye Raporu (*PISA 2022 Türkiye Report).

Graph 3 shows that the average scores of OECD countries and all countries decreased compared to PISA 2003. While the average score of OECD countries in reading skills was 494 in PISA 2003, it decreased to 476 in PISA 2022. The average score of OECD countries, which reached the highest average score in PISA 2012, has been on a downward trend since the 2015 cycle. While the average score of OECD countries was 493 in PISA 2015, it decreased to 487 in 2018 and 476 in 2022. When the average scores of all participating countries in reading skills since PISA 2003 are analysed, it is seen that while the average score of all countries was 482 in 2003, it decreased to 435 in PISA 2022. Since the PISA 2015 cycle, a downward trend is observed in the average of all countries. While the average score of all countries was 460 in PISA 2015, it decreased to 453 in 2018 and 435 in 2022.

In the PISA cycles between 2003 and 2022, Türkiye's average score in reading skills was between 428 and 475. Between 2003 and 2012, the average reading skills score tended to

increase, but then decreased in 2015. In PISA 2018, Türkiye's average score in reading skills reached 466 points, and in 2022, it decreased by 10 points compared to 2018.

Foreign Language

While education is the most important factor in increasing the social welfare level of a country, the level of benefiting from education of the citizens of that country is accepted as one of the most important indicators of development. Today, when technological developments and globalisation have reached a dizzying speed, foreign language education is a necessity in order to keep up with this speed.

Foreign language teaching in Türkiye has a long history. In the last years of the Ottoman Empire, French and German languages came to the fore with the influence of westernisation movements (Boyacıoğlu, 2015). After becoming a member of NATO and with the beginning of the efforts to become a member of the European Union, English gained great importance in Türkiye. Today, English comes to mind when it comes to foreign language education in Türkiye. In parallel with this, the scope of this study is English.

The eight-year basic education reform, which is regarded as the most important stage in the Turkish education system after the announcement of the Law on Unification of Education, has brought many innovations in the education system (Haznedar, 2010). With the Law No. 4306 enacted in 1997, compulsory education was increased from 5 years to 8 years. This law also brought about important changes in foreign language education. Foreign language education, which had previously started at the secondary education level, was started from the 4th grade of primary education. In addition, an elective second foreign language option was added to the curriculum after the 6th grade of primary education. As of the 1997-1998 academic year, foreign language course hours in primary schools are given in Table 5.

Table 5. Weekly foreign language class hours in primary education after 1997

Foreign Language Classes	4. grade	5. grade	6. grade	7. grade	8. grade
Compulsory	2	2	4	4	4
Supplementary	1-2	1-2	1-2	1-2	1-2
Selective	-	-	2	2	2

Source: Demirpolat, B. C. (2015). Türkiye'nin Yabancı Dil Öğretimiyle İmtihanı: Sorunlar ve Çözüm Önerileri. [Türkiye's test with teaching foreign languages: Problems and Suggestions for solutions]. *SETA.*

As is seen in Table 5, with the amendments made in 1997, there have been quantitative improvements in foreign language teaching. However, it does not seem possible to say that these changes have also brought qualitative improvements. As Demirpolat (2015) points out, these improvements were just numbers, especially since there were not enough teachers to provide foreign language education. In this period, many people from outside the field were employed as English teachers in order to fill the shortage of English teachers (Koçak & Kavak, 2014).

Following the structural change in 1997 in terms of foreign language education in Türkiye, a new foreign language teaching programme was introduced in 2006. Until 2006, the foreign language education programme included traditional language teaching methods focusing on the grammar rules of the foreign language being taught, while the Primary English Curriculum,

which has been in force since May 2006, adopted a student-oriented approach that emphasises the functional use of language in daily life (Haznedar, 2010).

One of the most important changes in foreign language education in our country is the law known as 4+4+4, which increased compulsory education from 8 to 12 years. With this law, English lessons started to be taught from Grade 2 onwards, thus enabling students to be introduced to foreign languages at an earlier age. Table 6 shows the weekly English lesson hours implemented with this law, which entered into force in 2011.

Table 6. Weekly foreign language class hours in primary and secondary schools with 4+4+4 education reform

English	2. grade	3. grade	4. grade	5. grade	6. grade	7. grade	8. grade
Compulsory	2	2	2	4	4	4	4
Selective	-	-	-	2	2	2	2

Source: Demirpolat, B. C. (2015). Türkiye'nin Yabancı Dil Öğretimiyle İmtihanı: Sorunlar ve Çözüm Önerileri. [Türkiye's test with teaching foreign languages: Problems and Suggestions for solutions]. *SETA.*

As is seen in Table 6, English language teaching starts in Grade 2, and in Grade 5, English lesson hours are increased from two to four.

Despite the innovations and changes introduced in foreign language education, it is observed that there are many difficulties in foreign language education in Türkiye. It is stated that the targeted success in foreign language education cannot be achieved due to many difficulties such as crowded classrooms, inadequate physical conditions, qualified teacher training, measuring the competences of foreign language teachers with exams such as KPSS, which are not suitable for the nature of foreign language, and quality problems related to educational materials (Demirpolat, 2015).

The EF English Proficiency Index (EF EPI) reached up-to-date data in 2022 with the participation of 2.2 million people in 113 countries. The EF English Proficiency Index evaluates the countries participating in the research in five proficiency bands: very high, high, moderate, low, very low. These proficiency bands and the meaning of each of them are given in Table 7.

Table 7. EF Proficiency Bands

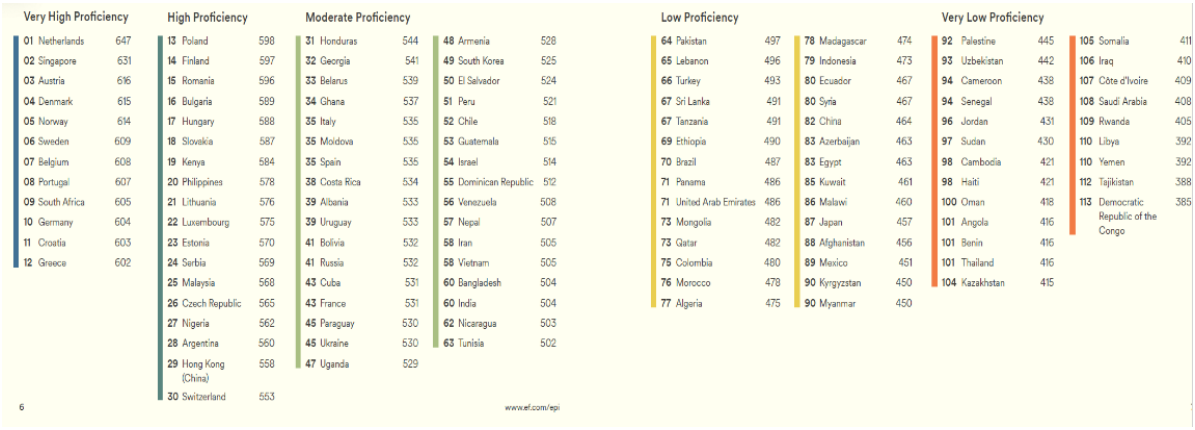
Proficiency	Sample Tasks
Very high	• Use nuanced and appropriate language in social situations • Read advanced texts with ease • Negotiate a contract with a native English speaker
High	• Make a presentation at work • Understand TV shows • Read a newspaper
Moderate	• Participate in meetings in one's area of expertise • Understand song lyrics • Write professional emails on familiar subjects
Low	• Navigate an English-speaking country as a tourist • Engage in small talk with colleagues • Understand simple emails from colleagues
Very low	• Introduce oneself simply (name, age, country of origin)

- Understand simple signs
- Give basic directions to a foreign visitor

Source: EF EPI 2023 Report

The study refers to the language skills of average people in the countries included in the EF English proficiency test, while personal achievements and failures are not taken into account. In addition, the research is conducted in non-native English-speaking countries. For the 2023 EF English Proficiency Index, data were collected from 2.2 million people who took the EF SET English test in 2022. EF EPI 2023 country rankings and scores are shown in Table 8.

Table 8. EF EPI English proficiency ranking of countries and regions



Very High Proficiency		High Proficiency		Moderate Proficiency				Low Proficiency				Very Low Proficiency			
01 Netherlands	647	13 Poland	598	31 Honduras	544	48 Armenia	528	64 Pakistan	497	78 Madagascar	474	92 Palestine	445	105 Somalia	411
02 Singapore	631	14 Finland	597	32 Georgia	541	49 South Korea	525	65 Lebanon	496	79 Indonesia	473	93 Uzbekistan	442	106 Iraq	410
03 Austria	616	15 Romania	596	33 Belarus	539	50 El Salvador	524	66 Turkey	493	80 Ecuador	467	94 Cameroon	438	107 Côte d'Ivoire	409
04 Denmark	615	16 Bulgaria	589	34 Ghana	537	51 Peru	521	67 Sri Lanka	491	80 Syria	467	94 Senegal	438	108 Saudi Arabia	408
05 Norway	614	17 Hungary	588	35 Italy	535	52 Chile	518	67 Tanzania	491	82 China	464	96 Jordan	431	109 Rwanda	405
06 Sweden	609	18 Slovakia	587	35 Moldova	535	53 Guatemala	515	69 Ethiopia	490	83 Azerbaijan	463	97 Sudan	430	110 Libya	392
07 Belgium	608	19 Kenya	584	35 Spain	535	54 Israel	514	70 Brazil	487	83 Egypt	463	98 Cambodia	421	110 Yemen	392
08 Portugal	607	20 Philippines	578	38 Costa Rica	534	55 Dominican Republic	512	71 Panama	486	85 Kuwait	461	98 Haiti	421	112 Tajikistan	388
09 South Africa	605	21 Lithuania	576	39 Albania	533	56 Venezuela	508	71 United Arab Emirates	486	86 Malawi	460	100 Oman	418	113 Democratic Republic of the Congo	385
10 Germany	604	22 Luxembourg	575	39 Uruguay	533	57 Nepal	507	73 Mongolia	482	87 Japan	457	101 Angola	416		
11 Croatia	603	23 Estonia	570	41 Bolivia	532	58 Iran	505	73 Qatar	482	88 Afghanistan	456	101 Benin	416		
12 Greece	602	24 Serbia	569	41 Russia	532	58 Vietnam	505	75 Colombia	480	89 Mexico	451	101 Thailand	416		
		25 Malaysia	568	43 Cuba	531	60 Bangladesh	504	76 Morocco	478	90 Kyrgyzstan	450	104 Kazakhstan	415		
		26 Czech Republic	565	43 France	531	60 India	504	77 Algeria	475	90 Myanmar	450				
		27 Nigeria	562	45 Paraguay	530	62 Nicaragua	503								
		28 Argentina	560	45 Ukraine	530	63 Tunisia	502								
		29 Hong Kong (China)	558	47 Uganda	529										
		30 Switzerland	553												

Source: EF EPI 2023 Report

As is seen in Table 8, according to the EF English Proficiency Index 2023 data, the average EF EPI score of the participating countries is493, while Türkiye ranks 66th among 113 countries and 33rd among 34 European countries with an EF EPI score of 493.

Discussion

Interpretation of the Results

The aim of this study is to evaluate Türkiye's education system and to understand how effective it is in the international competitive environment through an assessment of four basic skills. Maths, science, reading and foreign language skills were identified as critical elements in determining the success of students at national and international level.

As shown in PISA 2022, Turkey's educational performance in mathematics, science, reading, and English is in the middle range among the participating countries. The study reveals that in PISA 2022, Türkiye's average score in mathematics is 453, and ranks 39th among 81 countries and 32nd among 37 OECD countries. Also, Türkiye's average score in science is 476, and ranks 34th among 81 countries and 29th among 37 OECD countries. Furthermore, Türkiye's average score in reading skills is 456, and ranks 36th among 81 countries and 30th among 37 OECD countries. Lastly, Türkiye ranks 66th among 113 countries and 33rd among 34 European countries with an EF EPI score of 493, whereas the average EF EPI score of the participating countries is also 493. The results indicate both strengths and areas for improvement.

When the position of Turkish students in the world rankings in terms of mathematics skills is analysed, it is seen that significant achievements have been made. However, given the need for

further improvement in science, reading and foreign language skills, strategic measures need to be taken to maintain international competitive advantage in these areas. Improving the performance of Turkish students, particularly in science, is critical to strengthening the national contribution to science and technology (Turiman et al., 2012). Improvements in reading skills can enhance students' ability to access information and think critically, which in turn can raise the overall knowledge level of society (Aloqaili, 2012). Addressing deficiencies in foreign language skills can enable Türkiye to play a more effective role in the global communication network. Increasing foreign language skills is also important for international co-operation and cultural interactions for global competency (Stein-Smith, 2018).

In conclusion, this assessment reveals the strengths and weaknesses of Türkiye's education system. These results can provide guidance for more effective direction of education policies and strategies and shed light on the steps to be taken to improve the achievement of Turkish students at the global level. By focussing on the development of these skills, future education reforms can make Türkiye more competitive internationally.

Future Implications

This assessment not only reveals the current state of Türkiye's education system, but also provides important clues for determining future education policies. In this framework, it is critical to make recommendations to increase achievements in various fields and to take strategic steps to make the education system globally competitive. Mathematics skills support individuals to become pioneers in science and technology by strengthening their analytical thinking and problem-solving skills. Increasing interest in STEM fields and developing advanced mathematics skills play an important role in Türkiye's goal of raising mathematics achievement at the international level. Future education policies should emphasise mathematics education at an early age and provide students with opportunities to integrate mathematical thinking in daily life, enabling them to build a positive relationship with mathematics.

The goal of achieving higher success, particularly in the field of natural sciences, is crucial for Türkiye to sustain its global competitive advantage in scientific and technological domains. It is a critical step for future education policies to include curricula that provide practical experiences to students and enhance their problem-solving abilities. Additionally, supporting national projects in science and technology may increase students' desire to pursue careers in these fields.

Reading skills are one of the fundamental elements that impact individuals' capacity for critical thinking. Future education policies should aim to cultivate a versatile reading habit among students, which can enhance their access to information. Adopting teaching methods that develop critical thinking and analytical skills can contribute to students not only acquiring knowledge but also learning how to effectively utilize that knowledge.

Future education policies should focus on enhancing foreign language skills. Particularly in a world where digital communication is rapidly increasing, providing students with opportunities to communicate effectively and increase cultural understanding is crucial. Starting language learning at an early age and employing innovative methods for language acquisition can contribute to students becoming more effective communicators on a global scale.

In conclusion, these suggestions and assessments can assist in identifying strategic steps to propel Türkiye's education system into the future. Future education policies should aim to cultivate students not only as competitive and successful individuals at the national level but

also on the international stage.

Limitations

While this study has assessed Türkiye's education system based on four fundamental skills, it has some limitations. Firstly, due to data gaps and variations in international rankings, the results obtained may lack complete objectivity. Additionally, these rankings assessing student achievement may not always represent the entire student population and may reflect the performance of specific socioeconomic groups. Another limitation is that this study focuses only on specific skill areas; other factors influencing student achievement (such as teaching quality and student motivation) may not have been considered in this evaluation. These limitations should be taken into account for future research to provide a more comprehensive perspective.

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