

Cultivating Life Skills in the Greek School System: The Challenge of the “21+ Skills Labs” through the Lens of PISA

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Abstract

In today’s era of rapid social and technological transformations, the need for an education transcending traditional knowledge transmission has become imperative. Students are now expected not only to achieve academic competence but also to develop a broad range of life skills that will enable them to successfully manage the personal, social, and professional challenges of the 21st century. Both the international literature and the findings of the PISA 2022 assessment confirm that skills such as self-regulation, resilience, collaboration, and critical thinking are just as crucial as academic knowledge for students’ future well-being. Within this context, the Greek state has introduced the institutionalized subject “21+ Skills Labs” across compulsory education, marking a shift toward a more holistic and experiential learning approach. This study aims to explore the significance of this reform through the lens of the PISA findings, identifying points of convergence as well as challenges in its implementation, and examining the extent to which it can enhance life skills in the Greek educational landscape.

Keywords: 21+ Skills Labs, PISA 2022, Greece, life skills

Introduction

As highlighted in the literature, cultivating life skills has a significant positive impact on students’ educational and psychosocial development, strengthening their self-confidence and resilience, reducing anxiety, and improving learning outcomes (Seligman & Adler, 2019; Currie & Morgan, 2020). Moreover, the integration of life skills into school curricula promotes not only students’ cognitive and social competence but also their ethical development and willingness to actively participate in civic life. In this sense, it constitutes a strategic tool for shaping autonomous, socially responsible, and adaptable citizens capable of navigating the complexities of the modern world (Neveskiotis, 2024).

From this perspective, it becomes clear that the systematic promotion of life skills can be effectively embedded within the school environment, where appropriate pedagogical practices connect theory with practical application in real educational

settings. In Greece, a notable initiative in this direction is the institutionalized subject “21+ Skills Labs”, which has been fully integrated into compulsory education since 2021.

In this context, the present analysis draws on secondary data from the PISA 2022 assessment, aiming to explore the thematic alignment between the findings of this international evaluation and the core objectives of the “21+ Skills Labs” program. The study focuses on highlighting elements that enhance understanding of how this educational initiative is implemented, as well as the challenges encountered in integrating life skills into the Greek educational system.

Assessment of the PISA 2022 evaluation for Greece through the lens of life skills

The results of PISA 2022 for Greece provide a useful research framework for examining life skills in the school context. Skills such as self-regulation, adaptability, collaboration, and resilience are highlighted as critical, confirming international literature that links learning strategies with students’ cognitive and social development (Huang & Lajoie, 2023; Zhai et al., 2023). At the same time, emphasis is placed on the need to foster critical thinking and reflective learning.

According to the *Snapshot of learning strategies table* (OECD, 2024), a selected part of which is presented in Table 1, Greek students show an interest in knowledge and elements of self-regulation; however, the data indicate a lack of active application of relevant strategies. Only 44.1% report asking questions when they do not understand the mathematics material, which may reflect low self-confidence or insufficient encouragement for participation. Furthermore, 70.3% report making sure that their work is error-free, indicating thoroughness and a sense of responsibility, while 52.3% state that they check their work carefully before submitting it, leaving a significant proportion with low intrinsic motivation.

Notably, 63.8% of students report trying to consider all perspectives before forming an opinion (OECD: 58.9%), and 55.7% disagree with the statement that there is only one correct answer in a disagreement (OECD: 45.8%), reflecting a tendency toward critical and multiperspective thinking. However, the data suggest that such strategies are not consistently applied by all students.

In addition, 49.3% state that they try to connect new knowledge with prior knowledge (OECD: 45.6%), leaving a substantial proportion of students who do not use this strategy. Particularly low is the percentage (23.9%) of students who report that their teachers encourage them to connect old and new (mathematical) concepts (OECD: 31.2%), indicating the need to strengthen metacognitive learning and conceptual understanding (Panadero, 2017).

In the same vein, the findings of the PISA 2022 evaluation (OECD, 2024) indicate that Greek students exhibit positive elements in both intrinsic and instrumental motivation, but still show weaknesses in growth mindset, attitudes toward collaboration, and stress management. As highlighted in the international literature, these factors are fundamental for developing resilient learners who can cope with complex academic and social challenges (Johnson & Johnson, 2009). These trends underscore the need for an educational approach that, beyond knowledge acquisition, fosters self-awareness, psychological resilience, and collaborative learning.

Table 1. A selected excerpt from *Table: Snapshot of learning strategies* (OECD, 2024)

Percentage of students reporting

Controlling one’s own learning			Critical thinking (perspective-taking)		Proactive learning	Cognitive activation	
More than half of the time, students...	Students agree or strongly agree...		Students agree or strongly agree...	Students disagree or strongly disagree...	More than half of the time, students...	More than half of the lessons...	
...ask questions when they do not understand the mathematics material	...they like to make sure there are no mistakes	...they carefully check homework before turning it in	...they try to consider everybody’s perspective before they take a position	...there is only one correct position in a disagreement	...try to connect new material to what they have learned in previous mathematics lessons	...the teacher asks students to explain their reasoning when solving a mathematics problem	...the teacher asks students to think about how new and old mathematics topics are related
%	%	%	%	%	%	%	%
* 46.8	64.2	44.3	58.9	45.8	45.6	46.1	31.2
# 44.1	70.3	52.3	63.8	55.7	49.3	53.3	23.9

* OECD average | # Greece

Source: OECD, PISA 2022 Database, Tables V.B1.2.2, V.B1.2.4, V.B1.2.6, V.B1.2.10, V.B1.2.14, V.B1.2.21, V.B1.3.24, V.B1.3.26 (OECD, 2024).

As reflected in the *Table: Snapshot of Motivations and Growth Mindset* (OECD, 2024), a selected portion of which is presented in Table 2, 66.6% of Greek students report enjoying learning new things (OECD average: 50.1%), and 58.9% find school challenges interesting (OECD: 46.9%). While these figures suggest a positive attitude toward learning, the absence of stronger motivation to engage with more demanding academic tasks may hinder the development of effective self-regulation strategies.

Regarding instrumental motivation, 65.4% of Greek students believe that school provides them with skills useful for their future careers (OECD: 67.4%), and 85.2% aim to achieve high performance in mathematics (OECD: 89.3%). However, their belief in personal growth potential remains low: only 40.7% agree that intelligence is not fixed and can be developed through education (OECD: 57.8%), and just 30.8% believe they can improve their mathematics performance through practice (OECD: 34.5%). These low percentages suggest a limited growth mindset, which may undermine students’ resilience in the face of academic difficulties.

Similarly, the *Table: Snapshot of students’ predispositions to learning* (OECD, 2024), a selected portion of which is presented in Table 3, provides insight into students’ cognitive and emotional characteristics, such as self-efficacy and anxiety, that influence their predisposition toward learning and help explain variations in academic outcomes.

A particularly encouraging finding for Greece is that 73.2% of students with high self-efficacy report enjoying learning new things (OECD: 62.1%), while 62.6% of them ask questions when they do not understand the material (OECD: 61.8%), indicating strong intrinsic motivation. By contrast, Greek students with higher anxiety levels show significantly lower rates of connecting new and prior knowledge (−23.9%), a gap wider than the OECD average (−15.9%). This supports the view that students with greater self-efficacy and lower anxiety are better equipped to manage learning challenges, fostering both autonomy and psychological resilience.

Table 2. A selected excerpt from *Table: Snapshot of motivations and growth mindset* (OECD, 2024)

Percentage of students reporting

Intrinsic motivation		Instrumental motivation		Growth mindset			
Students agree or strongly agree...				Students disagree or strongly disagree...			
...they love learning new things in school	...they like challenging school work	...school has taught them things which could be useful in a job	...they want to do well in their mathematics class	...your intelligence is something about you that you cannot change very much		...some people are just not good at mathematics, no matter how hard they study	
				All students	Gender difference (boys-girls)	All students	Gender difference (boys-girls)
%	%	%	%	%	% dif.	%	% dif.
* 50.1	46.9	67.4	89.3	57.8	-0.6	34.5	6.6
# 66.6	58.9	65.4	85.2	40.7	-3.1	30.8	8.9

* OECD average | # Greece

Source: OECD, PISA 2022 Database, Tables V.B1.3.3, V.B1.3.8, V.B1.3.13, V.B1.3.17, V.B1.3.40, V.B1.3.42 (OECD, 2024).

Table 3. A selected excerpt from *Table: Snapshot of students' predispositions to learning* (OECD, 2024)

Percentage of students reporting

More than half of the time, they ask questions when they do not understand the mathematics material		Agreeing or strongly agreeing that they love learning new things		More than half of the time, they try to connect new material to what they have learned in previous mathematics lessons		Agreeing or strongly agreeing that they like challenging schoolwork	
More self-efficacy ¹	Difference between more and less self-efficacy ¹	More self-efficacy ¹	Difference between more and less self-efficacy ¹	More anxiety ²	Difference between more and less anxiety ²	More anxiety ²	Difference between more and less anxiety ²
%	% dif.	%	% dif.	%	% dif.	%	% dif.
* 61.8	29.5	62.1	23.9	39.3	-15.9	36.9	-21.5
# 62.6	36.8	73.2	15.6	39.3	-23.9	54.1	-11.2

* OECD average | # Greece

¹ Students who reported more (less) self-efficacy in mathematics are those in the top (bottom) quarter of the index of self-efficacy in mathematics in their own country/economy.² Students who reported more (less) anxiety in mathematics are those in the top (bottom) quarter of the index of mathematics anxiety in their own country/economy.

Source: OECD, PISA 2022 Database, Tables V.B1.4.7, V.B1.4.8, V.B1.4.18, V.B1.4.19 (OECD, 2024).

The *Table Snapshot of students' autonomy and 21st-century mathematics skills* (OECD, 2024), a selected portion of which is presented in Table 4, reveals that Greek students face notable challenges in learning autonomy, confidence in conducting online searches, and critical evaluation of digital information.

Skills such as self-regulation, critical thinking, and autonomy in processing information are essential for lifelong learning and for navigating the complexities of today's society (OECD, 2018). However, only 56.0% of Greek students report feeling confident in searching for information online—a rate significantly below the OECD average of 72.7%. Similarly, just 45.2% state they can assess the reliability of online content (OECD: 51%), highlighting the need to strengthen students' digital literacy and evaluative skills.

Table 4. A selected excerpt from *Table: Snapshot of students’ autonomy and 21st-century mathematics skills* (OECD, 2024)

Percentage of students reporting

Extracting mathematical information from diagrams, graphs, or simulations frequently	Interpreting mathematical solutions in the context of a real-life challenge frequently	Confidence in extracting mathematical information from diagrams, graphs, or simulations	Confidence in interpreting mathematical solutions in the context of a real-life challenge	Trying to connect new material to what they have learned in previous mathematics lessons, more than half of the time		Confidence in finding learning resources online on their own, if schools close again in the future	They can easily assess the quality of information they find online
				More confidence in 21 st -century mathematics skills ¹	Difference between more and less confidence in 21 st -century mathematics skills ¹		
%	%	%	%	%	% dif.	%	%
* 34.6	19.7	64.5	52.5	62.6	32.0	72.7	51.0
# 30.0	16.1	48.9	42.8	70.1	37.1	56.0	45.2

* OECD average | # Greece

¹ Students who reported more (less) confidence in 21st-century mathematics skills are those in the top (bottom) quarter of the index of confidence in 21st-century mathematics skills in their own country/economy.

Source: OECD, PISA 2022 Database, Tables V.B1.8.1, V.B1.8.10, V.B1.8.28, V.B1.8.29, V.B1.9.2, V.B1.10.15 (OECD, 2024).

In conclusion, the *Table Snapshot of students’ proactive learning with parental and teacher support* (OECD, 2024), a selected portion of which is presented in Table 5, highlights the critical role of family and teacher support in promoting students’ learning autonomy and critical thinking.

Table 5. A selected excerpt from *Table: Snapshot of students’ proactive learning with parental and teacher support* (OECD, 2024)

Percentage of students reporting trying to connect new material to what they have learned in previous mathematics lessons, when their				Percentage of students reporting the following when the teacher shows an interest in every student’s learning:			
Parents spend time just talking with them		Parents take an interest in what their children are learning at school		Try to connect new material to what they have learned in previous mathematics lessons		Make time to learn the material for mathematics class	
Students with <u>more</u> frequent parental interactions ¹	Difference between students with <u>more</u> frequent interactions and those with <u>less</u>	Students with <u>more</u> frequent parental interactions ¹	Difference between students with <u>more</u> frequent interactions and those with <u>less</u>	Students with <u>more</u> frequent teacher support ²	Difference between students with <u>more</u> frequent support and those with <u>less</u>	Students with <u>more</u> frequent teacher support ²	Difference between students with <u>more</u> frequent support and those with <u>less</u>
%	% dif.	%	% dif.	%	% dif.	%	% dif.
* 48.1	12.1	50.0	13.5	49.8	11.9	52.9	12.0
# 55.4	20.2	53.3	15.6	52.6	5.7	50.4	10.7

* OECD average | # Greece

¹ Students who reported more (less) frequent parental interactions are those responding this activity occurred about once or twice a week or every day/almost every day (never/almost never to about once or twice a month).

² Students who reported more (less) frequent teacher support are those responding this activity occurred in most lessons to every lesson (never/almost never to some lessons).

Source: OECD, PISA 2022 Database, Annex B1, Tables V.B1.5.19, V.B1.5.73, V.B1.5.81 (OECD, 2024).

Greek students with higher levels of parental interaction are more likely to connect new and prior knowledge (55.4%) compared to the OECD average (48.1%). The gap between students with high and low parental engagement reaches 20.2% in Greece, significantly above the OECD average of 12.1%. Literature supports the idea that active parental involvement fosters cognitive development, metacognitive awareness, and problem-solving by encouraging reflective learning behaviors (Blazar & Kraft, 2017).

Similarly, students who feel supported by their teachers are more likely to integrate new concepts with previous ones (52.6% vs. OECD average: 49.8%). This support appears to enhance learners' confidence, resilience, and critical thinking skills. These findings reinforce the importance of educational guidance in nurturing flexible and reflective learners (CASEL, 2021).

21+ Skills Labs: a critical review of a pedagogical and institutional innovation in Greek compulsory education

The analysis of PISA 2022 findings (OECD, 2024) highlights specific weaknesses in the Greek education system regarding the cultivation of life skills such as critical thinking, self-regulation, collaboration, and metacognitive ability. This may be attributed to the fact that, despite a generally positive attitude toward the integration of learning strategies, the lack of a coherent and holistic implementation within the daily practices of schools may limit their effectiveness (Paniagua & Istance, 2018).

Within this framework, the nationwide introduction of the institutionalized subject “21+ Skills Labs” in 2021 represented an innovative educational intervention aimed at enhancing experiential learning and promoting key 21st-century skills in Greek schools. This course emerged from the initiative “Platform 21+: 21st Century Skills Labs”, designed and piloted by the Institute of Educational Policy (IEP) in Greece (Greek Ministry of Education, 2020). It was made a compulsory part of the curriculum across all levels of public and private compulsory education (Greek Ministry of Education, 2021). This educational innovation received international recognition, winning the *Global Education in School-Based Programmes 2020/2021* award from the GENE network for its quality and contribution to global education (Pitsou et al., 2025).

The “21+ Skills Labs” aim to cultivate essential 21st-century competencies such as communication, collaboration, creativity, critical thinking, and digital literacy. They are organized into four thematic cycles focusing on social, environmental, and personal issues and are delivered through group-based, inquiry-driven, and experiential learning methodologies. Their implementation is grounded in learner-centered pedagogical practices and encourages school-community connections by involving parents, local organizations, and social partners (Institute of Educational Policy, n.d.; Eurydice, 2022).

The first evaluation of the program was conducted by IEP's Scientific Unit in June 2022, with the participation of 11,039 school units across all education levels. The results showed that teachers acknowledged the program's contribution to life skills development and reported positive student responses regarding both content and methodology (Institute of Educational Policy, 2022; Pitsou et al., 2025). Moreover, the combination of life skills development with increased pedagogical autonomy for teachers was identified as a key factor in the initiative's success.

At the International Conference *Combating Skills Mismatch in Education – TAST Strategy* (Crete, 2023), additional findings were presented that confirmed teachers'

favorable perceptions of the course’s philosophy and the flexibility it provides. However, structural challenges were also highlighted, including administrative overload, insufficient high-quality training, and a sense of limited institutional support (Neveskiotis, 2023).

International experience suggests that the success of such innovations depends heavily on systematic teacher training, the existence of a supportive framework, and the strengthening of teacher agency within the school context (Corcoran et al., 2018). These conditions appear to be only partially fulfilled in the Greek context, presenting significant barriers to the sustained development of the initiative (Neveskiotis, 2023; Pitsou et al., 2025).

Linking these observations to the findings of PISA 2022 reinforces the need to further enhance a broader spectrum of skills, such as critical thinking, self-regulation, metacognitive awareness, self-confidence, autonomy, and digital competence. Students’ low performance in evaluating and managing online information, their difficulties in connecting new and prior knowledge, and their limited engagement in reflective strategies may indicate the need to reconsider both the content and methodological approach of the “21+ Skills Labs”. Such a reform should not be limited to the instruction of isolated skills, but rather be grounded in a broader pedagogical and value-based framework that promotes the psycho-pedagogical empowerment of teachers and contributes to the formation of positive school cultures (Sklavenitou, 2024).

Conclusion

In summary, the “21+ Skills Labs” represent a systematic attempt to modernize the Greek school system and align it with the demands of the contemporary era. Their implementation to date has highlighted both potential and significant shortcomings, particularly in terms of supporting educators and deepening the methodological aspects of the program. The connection with the PISA 2022 findings underscores the need to redefine both the content and the pedagogical approach of the initiative, shifting the focus beyond the isolated cultivation of individual skills toward the development of a unified, pedagogically grounded framework. Such a framework should promote metacognitive ability, autonomy, psychosocial empowerment, and the overall strengthening of the school community.

This approach requires a long-term strategy, continuous research support, and the meaningful involvement of teachers as active agents of change.

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