



The Digital Education in Greece: A Retrospective View

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Abstract

This study examines the digital transformation of the Greek education system since the early 2000s through the lens of imagined futures. ICT has shifted horizontally from being a mere computer subject to becoming a mandatory instrument integrated across the national curriculum. Using qualitative, descriptive-analytical methods, the study explores how top-down government policies reorganize pedagogical practices, transforming teachers into digital facilitators, and fueling institutional reliance on platforms such as e-class and MySchool. One concrete learning method analyzed is gamification through the "Greek toy children's revolution," which transforms formative assessments into interactive digital games and activates students' visual creativity through the creation of comics and videos. The results show that technological expectations promoted by political authorities often sideline pedagogical innovation in favor of techno-economic interests. Rather than reducing inequalities, this hasty digitalization without a space for collective dialogue reinforces the technocratic character of education, triggering new digital inequalities—particularly in rural areas—and marginalizing critical teaching approaches. However, some educators have begun to independently challenge this standardization in order to maintain the pedagogical essence of the classroom.

Keywords: Digital Transformation, Imagined Futures, Gamification, Education Policy, Greece.

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Introduction

Information and communication technology (ICT) in education involves the application and integration of new technologies into the entire teaching and learning process. The presence of this modern technology is no longer merely an optional or supplementary tool in the classroom, but has become a central pillar transforming how knowledge is produced, packaged, and delivered to students in the modern era (Msambwa et al., 2024). Through this digital-based approach, the rigid physical boundaries of the conventional classroom are beginning to erode, paving the way for a much more interactive, flexible, and dynamic learning environment (Aivazidi & Michalakelis, 2023). This paradigm shift demands a fundamental restructuring of educational interactions between educators

and students.

As technology penetrates the academic space, one-way lecture methods are being replaced by student-centered, collaborative learning (Zou et al., 2025). The integration of ICT not only changes the medium of delivery but also expands the accessibility of educational resources globally, enabling the transfer of knowledge to occur anytime and anywhere without being bound by geographical barriers (Steiner-Khamsi, 2025). In Greece itself, the development and adoption of educational technology has been rapid and radical since the early 2000s. The changes occurring within their domestic landscape are no longer gradual, slow, or partial. Instead, this phenomenon has become a massive, nationwide movement that has successfully transformed the face and fundamental structure of the Greek education system in a relatively short and aggressive manner.

This rapid adjustment dynamic is fundamentally driven by a strong collective awareness of the importance of catching up with other developed countries. The Greek government and education authorities recognize that modernizing the learning system is a crucial instrument in preparing their young generation. This digital acceleration is designed to prepare students to face the real demands of a knowledge-based society and an increasingly competitive global job market. The impact of this acceleration has triggered a significant horizontal shift throughout the Greek education system and national curriculum (Kougias & Efstathopoulos, 2020). These reforms ensure that the introduction of technology is not isolated or limited to specific subjects, such as computer science or science. These policy interventions are designed comprehensively to ensure that the values of digitalization are spread evenly throughout all levels of educational institutions. As a direct result of this horizontal policy, the use of computers and various digital devices has now become mandatory and integrated into all subjects taught in schools. Whether in language arts, history, mathematics, or art, the use of digital instruments has become the norm (Jatileni et al., 2024). This standardization aims to eliminate the digital divide and ensure that every student receives equal exposure to technology in every aspect of their learning (Bui, 2022). This comprehensive implementation of technology ultimately prompted a profound reorganization of pedagogical practices in the field and triggered the emergence of various new reform policies. These changes created a wave of adaptation that required all stakeholders to review the effectiveness of traditional teaching methods (Suzer & Koc, 2024). This transformation not only affected the provision of physical infrastructure but also changed the culture and work ethic within the school ecosystem.

On the one hand, teachers and students were regularly required to change their old habits and begin to intensively adapt to dynamic digital platforms (Fadhli et al., 2026). Teachers no longer acted as the sole source of information, but rather as facilitators of digital learning (Sam-Kayode, 2025). On the other hand, the government continues to launch cutting-edge programs to legitimize this new direction in education, which focuses entirely on strengthening students' digital skills and literacy to face the future. However, the implementation of this technological reform often presents its own challenges, with technological innovation sometimes dominating pedagogical innovation itself (Nwafor et al., 2025). The hasty adoption of digital tools without adequate space for dialogue risks reinforcing the technocratic character of education, thus sidelining critical approaches to teaching (Norabuena-Figueroa et al., 2025). Therefore, the dynamics between top-down government policies and actual readiness on the ground are crucial to examine. Based on this background, the aim of this study is to examine the digital transformation of the Greek education system in depth. This analysis will be specifically examined through the lens of imagined futures. These imagined futures, in reality, serve to shape societal expectations regarding the future direction of education, reshape current teaching methods, and maintain control over the various educational reforms currently being implemented.

Methods

The method used is the gamification method implemented through an action called the "Greek toy children's revolution". How it works in the learning process is as follows: Game Integration in Learning: The evaluation process or formative test is packaged and presented in the form of a digital game, so that it is considered part of a normal and fun learning activity for students; Utilization of Interactive Media: Students are actively involved in completing digital tasks that utilize game elements or visual creativity, such as creating interactive videos or digital comics through platforms or websites that provide educational tools.

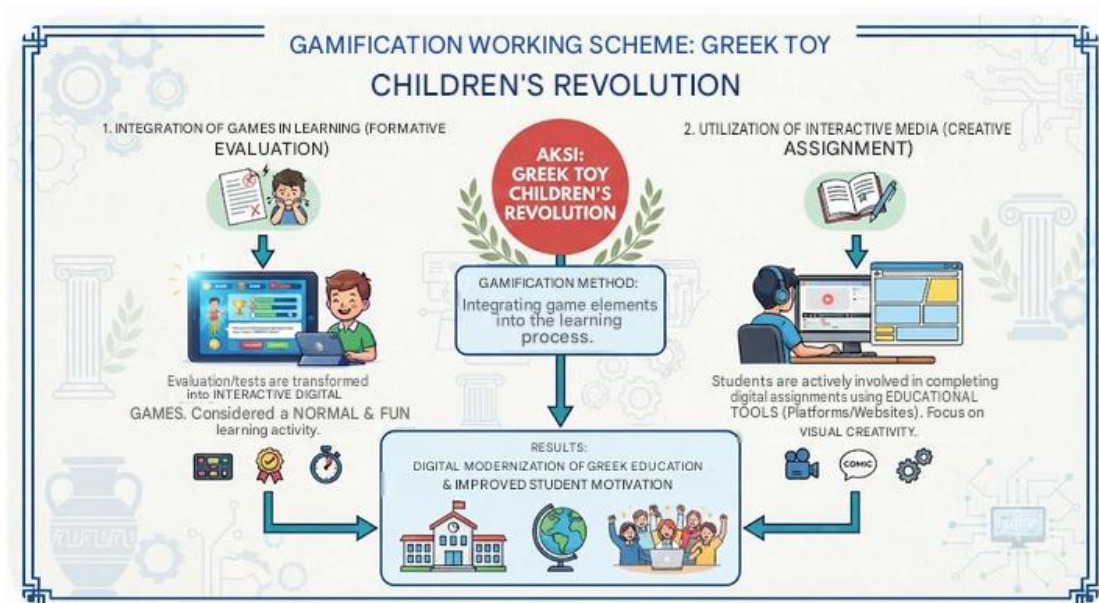


Figure 1. A visual scheme explaining how the gamification method works in action "Greek toy children's revolution"

The diagram above illustrates the workflow of the gamification method, implemented in the Greek Toy Children's Revolution through two main interconnected paths:

Left Path

Integration of Games in Evaluation (Formative Assessment)

This diagram shows how traditional tests are transformed into playful experiences: Traditional Activities: Typically, assessments are written exams or quizzes, which are often stressful for students; Gamification Innovation: This process is eliminated and replaced with Interactive Digital Games. Students' understanding is still assessed, but through game mechanics (such as answering questions to advance to the next level, earning points, or solving Greek history puzzles); Outcomes: Evaluation is no longer seen as a burden but becomes part of a normal and fun learning activity.

Left Path

Utilization of Interactive Media (Creative Assignments)

This diagram focuses on how students complete assignments using modern digital tools; Traditional Activities: Assignments may take the form of homework or manual projects; Gamification Innovation: Students are encouraged to use educational tool platforms to create creative content. The text cites specific examples such as Interactive Videos and Digital Comics, which have the theme "toy revolution." Outcome: Students become actively involved in the learning process through game elements and visual creativity.

Scheme Conclusion

Both paths lead to one primary goal: Digital Modernization in Greek schools, where technology serves not merely as an administrative tool but fundamentally transforms students' pedagogical experiences, making them more engaging and participatory.

Results and Discussion

The digital transformation of education in Greece

It is a fact that in Greece, ICT was limited only to the teaching of computer science in secondary education, with the main objective of teaching being the learning of programming languages. Computer science appeared as a subject in the period 1983-1985 in technical high schools, and since 1997, the Pedagogical Institute has been introducing ICT in all levels of education. This has resulted in computer science and ICT tools preparing the way for the Digital School. According to (X. Li et al., 2022), the holistic and horizontal integration of ICT into the school curriculum is now being attempted. Information, digital literacy also makes its appearance as a term to describe clearly and comprehensively the ability of students to use digital technologies to solve problems and their participation in the knowledge society. And we now come to the term digital skills, with the aim of strengthening them by 2020. Specifically, the action plan for 2019 was entitled “Digital Skills for Digital Greece” and concerns the digital transformation of education. To these we must add the Learning to Play with coding training program, as well as the Teach Talent Schools-Train the trainers action, for innovative teaching methods using ICT in teaching. At the same time, the B-level ICT training for teachers has begun and is still ongoing. For students, the Code Week 2019 action was launched, which concerns learning to create code by students. At the same time, the Greek toy children’s revolution action is also being implemented, using the gamification method. The school is modernizing with the Digital Repository of Open Educational Resources “PHOTODENTRO” (photodentroedu.gr), the website Interactive School Books (e-booksedu.gr), and the platform ‘New School or School of the 21st Century. To these we must add e-class and e-me for uploading material for students. Also, Myschool for recording absences, Proteas.gr for uploading teaching scenarios using computers for all subjects, and study4exams.gr as an auxiliary tool for teaching the material that students need to examine for their entry to university. And finally, the actions with eTwinning for the cooperation of schools across Europe, the Digital Tutorial under the pretext of overcoming shadow education, chatGpt for reinforcing the lesson in a digital way compose the educational setting. The Terms that are widely used are teaching scenarios with ICT, digital literacy, digital school, reducing the digital divide, digital proficiency, and digital education.

Theoretical background: Imagined future and Anticipation

Imagined future

In general, it is argued that there are different types of Imagined future. (Kalkan et al., 2020). Specifically, managerial imaginary refers to the ideal image that the leadership of a school has of how it operates. There is the didactic imaginary through which the teacher anticipates, plans teaching, and at the same time foresees the adjustments that he will need to make in terms of his teaching practices in a period of crisis. Its characteristics are imagination, creativity, and the prediction of possible outcomes in practice. The Fellow Educators’ Imaginary is based on defining common practices for dealing with periods of crisis through dialogue, collaboration, and mutual feedback. And finally, the Students’ Imaginary refers to students’ expectations for learning outcomes and how they will learn in conditions that may change. The future should be seen as a source of abundant possibilities and not as a destination to be conquered (Ahlin, 2025). It is good to create practices and space for the integration of the future into the present, since the problem is not to find ways to know the future, but to find ways to live and act without knowing the future (Conway, 2022). This is the pedagogy of the present, a pedagogy full of new challenges, imagination, and creativity. (Glückler et al., 2025)

mention different types of imaginaries. In particular, promissory imaginaries that refer to the way technological innovation affects education are strongly questioned due to their linearity.

On the contrary, digital tools not only solve, but also create problems, and therefore, digital development is guided by the intertwined dynamics of people, nature, and machines. Sociotechnical Imaginaries are those that determine decisionmaking about the future but lack imagination and alternative approaches outside of technology. Supporters of the anticipation view, on their part, try to explore the future with hypothetical methods and create near-future scenarios. Distant future scenarios promote imagination and give us ideas for crisis management without proximity to the present. Science fiction scenarios show us how the future has been designed and has become the object of imaginative creation, but from the past. Afrofutures are scenarios that create imagination and give hope, guided by moral orientation. (Pantazidis & Bantiou, 2026) generally argue that imagination is important for managing uncertain situations and that this requires an evaluation of the educational act through specific historical and material contexts. For (Capolla, 2024), the task of education is not a question of educating towards a pre-specified future that we know and have already imagined. Instead, the task is to explore how to create the spaces and practices that will continually enable the dynamic disclosure, imagination, and creation of radically new possibilities in the present. Such an ontological assumption about the future as a site of radical novelty reframes the educational challenge? It constructs the present as a site in which as-yet unrealized possibilities are both latent and imagined and produces a reframing of the emancipatory imperative in education.

Anticipation/Reorganization

Webb, (Blanckesteijn & Ghorbani, 2025) support that ‘anticipatory education does not lie outside of the registers and practices of human capital development, but rather, automates and accelerates the chrono-logics that have transmogrified education into human capital development for the past sixty years’. The educational future is already largely predetermined by the way in which powerful actors, governments, and politicians use information, digital tools, and data. Technology even allows the creation of imaginaries that, in the process, direct the present and shape educational policy and practices. Boredom also highlights that the technologies of anticipation produce inevitable moments of waiting and duration (Moyson et al., 2017). The past is transformed into a structure that determines the future, and the concept of time is not determined by educators but by policies. However, this removes the ability of teachers to be active regulators of change, since there is no dialogue for improvement, but only implementation and adoption of the data that emerges. So they essentially have a false control over the changes, and the technocratic character of education is strengthened, not the experience of teachers. (H. Li et al., 2024) argue that the future is a tool of power in the present. And for (Sîrghi et al., 2026), digital technologies produce future subjects, that is, they predict skills and strengthen the economy. And for (Suhada et al., 2026), they function as a political tool that guides things and imposes changes. The digital school, therefore, changes the data, reorganizes them, and regulates the role of each one. The same applies to (Engel et al., 2022), since the roles of students and teachers are reorganized, institutions and markets are reconstituted. And for (Gauttam et al., 2024), they actively embody values and perceptions through the way they organize their lesson and cultivate specific expectations for students, since the future is embodied in the learning processes of the present. For this reason, teachers and not digital tools should be the agents of change and determination of the nature of the educational future. The future is not neutral, but regulates the present. However, the subjects of education should determine the educational future and not follow prescribed changes that serve economic and governmental interests. And finally, what is affected above all is the pedagogical process and learning, since it is not pedagogical innovation that is applied, but technological innovation.

In the following lines, we will shed light on the imaginaries that respond to the Greek educational system. Initially, the managerial imaginaries are identified in our case in the adoption of the following activities: Digital Skills for Digital Greece, Digital School, Myschool, and Digital,

Streaming Digital School on behalf of the political authorities, with the expectation and vision of the digital transformation of education. Thus, (You & Morris, 2016) confirm how government agencies want schools to operate and present themselves as an image to the world. And at the level of educational leadership within the school, cases are witnessed on the part of the principals for the adoption of digital innovations for recording student absences electronically using tablets, but this was not done by a responsible teacher, but by the student again, who may not have given an absence to a classmate although each teacher should have checked who was absent. Digital innovation, such as the introduction of digital attendance systems, is promoted with the expectation of ensuring objective recording and preventing student dropout. However, despite initially high expectations, such systems are often not implemented effectively and ultimately not adopted in practice. Expectations also require proper organization in advance of any problematic points that may arise. The didactic imaginaries in our case here appear in the use of digital tools in teaching scenarios, as well as in the use of the e-class, e-me platforms for uploading material related to the lesson and assigning tasks to students.

The same also applies to digital games, coding activities, and Teach Talent schools, through which teachers show how they imagine teaching in a digital school. Teachers' imaginaries in teacher training programs such as level 2 training, eTwinning, and platform Proteas.gr compose a collective image of how the teacher should approach education and should integrate digital tools into their teaching and share their methodology with others in the context of a collective collaboration of the teacher community with the aim of feedback. Level B education is officially recognized as a professional qualification, and can be included in teachers' CVs, underlining its professional value. The Ministry of Education leverages these training programs to facilitate and legitimize the adoption of digital reforms, signaling preferred teaching and learning methods as normative within schools. Educational policy is being reshaped, with the use of digital tools, the creation of interactive courses, and the uploading of material to platforms being imposed. So, the future is activated in the present to legitimize reforms and indicate specific forms of learning and teaching as better than others. Students' imaginaries through actions such as Code Week, Greek Toys Children's Revolution, and interactive books create the image of digital education that develops students and makes them participants in the knowledge society, but also show us the expectations that are cultivated in students about how they will learn and what results they will achieve.

Sociotechnical imaginaries also shape the educational scene. The vision for the 21st century School that was formed cultivated an expectation for the existence of specific logistical equipment in schools, but unfortunately, in the process, the expectations were not confirmed, because many schools only acquired an interactive whiteboard last year. Therefore, educational policy embellishes a situation and shapes a social image, which can only be undone by teachers, parents, and students (Muthanna & Sang, 2023). Thus, today the school cultivates imaginary Afrofutures/ethical futures through the supposed use of digital intelligence in the educational process, shaping plausible images of the educational future, but these have not been discussed in practice and no specific policy has been outlined to address them. So, individual teachers are left to negotiate these challenges without systemic policy and guidance. It is what is supported by (Esposito, 2024) that the future is projected as an open field of possibilities, but these new possibilities open up in the present and must be solved in the present. An educational future for the use of digital tools has been taking shape in Greece for years through specific imagined futures at the level of both educational practice and learning expectations (Fritz et al., 2025). The embodiment of the digital school through eme, e-class, Myschool, Photodentro, etc., constitutes a sociotechnical imaginary through which education is not only guided, but also organized. Webb, (Souza & Debs, 2024) argue that the expectations formed in education accelerate and automate the way skills are produced. Technology is presented as a linear solution for education, but it creates new forms of control, inequalities, and reorganization of pedagogical practice, such as for example on Proteas.gr, where by uploading teaching scenarios, teachers are motivated to do the same as others did (Mena-Guacas et al., 2025).

Digital Skills for Digital Greece, e-class, Myschool, interactive books etc.

reorganize roles, since teachers are transformed into digital learning coordinators, the curriculum is horizontally changing based on digital skills, classes are reinforced, albeit belatedly, with interactive whiteboards, tablets, computers, projectors, books are also becoming digital, interactive on the internet, students gain access to platforms to learn, such as e-me, e-class, absences are registered in Myschool with the aim of objective recording and thus predictive actions, plans, investments and training are formed in the name of the digitalization of education. This is what is supported by (Becha et al., 2025), since the roles of students and teachers are reorganized, institutions and markets are reorganized. The future is not an abstract concept, but organizes the present. Recently, the Ministry of Education announced the digital tutoring (Streaming Digital School) to address the shadow education of students in the afternoon at home with private teachers or in private education centers outside of school, to explain to them what they learned in the morning or to help them learn the material on which they will be tested for admission to university. The digital tutoring is presented as a tech-driven future that promises success in the national university exams. Furthermore, it should also be noted that, while during all these years from 2000 onwards the adoption of digital tools was presented in Greece as an innovation in public education that reduces inequalities, in private education due to the fact that the owners of the schools or the funds to which they belong now had more money to pay for the creation of their own platforms, etc., it was presented as an element of competitiveness.

For (Mou, 2024) they function as a political tool that guides things and imposes changes. The digital school, therefore, changes the data, reorganizes them, and regulates the role of each one. Political decisions and the promotion of the digital tutorial, the interactive whiteboard, etc., mobilize interventions in the educational system due to competitiveness. The student becomes a data-subject and the teacher a Platform-worker. Digital inequalities increase in cases where students do not have a modern computer at home, and this is especially pronounced in rural areas. Schools in Greece depend on platforms, because a school without a website and platforms is theoretically non-existent. Tests through digital games are presented as normal learning. And the digital tasks that students are asked to do require paid registration on websites that provide specific educational tools, to make videos, comics, etc. With the knowledge we now have in hindsight, the Digital School reforms in Greece led to significant institutional changes and dependence on infrastructures and platforms, such as e-class, Photodentro, and MySchool, which determined both the lesson and school administration in matters of absences and grading. Thus, pedagogical practices and a critical approach to teaching were marginalized. Also, in matters of administration, data is collected on students and the school in general through the platforms. Finally, through digital changes, the market is strengthened financially, and the government imposes changes with economic benefit (Moolkham, 2025).

Digital technologies produce future subjects, predicting skills and directing education towards economic goals, as argues (Haleem et al., 2022). The managerial imaginaries and sociotechnical imaginaries of the Greek educational system influence the curriculum (Sak et al., 2025). Digital technologies transform the role of the teacher and the student, through the didactic and students' imaginaries, through which teachers and students must imagine new forms of learning within defined technological frameworks. For (Panxhi et al., 2025), the future is already embedded in the learning practices of the present, since they begin to organize their lesson through those that are projected and even without a substantial dialogue. This happens due to the individual projection of teachers and the lack of cooperation between them. Specifically, they read and hear about an educational innovation (this is how it is presented) and rush to use it uncritically to upload a teaching scenario and transmit it, which they did too. Consequently, they do not function as agents of pedagogical innovation, but rather reinforce the technocratic character of education by serving predetermined future scenarios (Hetmańczyk, 2024). Consequently, uncritical participation, non-experimental control, lack of dialogue and collaboration, horizontal change shapes power relations and imposes a politically and

socially pre-planned future of education (Fernandes et al., 2026).

Conclusion

Through the above analysis, it is understood that in Greece, too, digital technologies have shaped educational practices and imposed them. In the name of innovation, the pedagogical process has succumbed to the shock wave of technological innovation, which has increased inequalities and negated the pedagogical framework of teaching, with the result that the future of education is a predetermined field of political activation in the present. All the changes that have taken place over time in Greece have led to the digital present of education today, an education in Greece based on digital tools, which extends beyond the classroom, as it requires preparation from both the teacher and the student. And all this was reinforced by an alleged fear of failure if teaching is not based on digital tools. Fortunately, there are teachers who, either from a personal standpoint, seek alternative methods of teaching beyond digital ones or are driven by sensible political and social interests to challenge the policies adopted by each government.

Conflicts of Interest

The author declares no conflict of interest

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Author contribution

Georgios Alexandropoulos: Conceptualization; Methodology; Formal Analysis; Data Curation; Writing – Original Draft Preparation; Writing – Review & Editing. All authors have read and agreed to the published version of the manuscript.

Declaration of generative AI in scientific writing

The authors declare that generative AI tools were used exclusively for text editing, syntax correction, and structural refinement of the manuscript. No generative AI was used for data collection, analysis, interpretation, or the creation of figures and tables. The authors remain fully responsible for the intellectual content and integrity of this study.

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