


# Greece over the years



Greece has had various scientific schools throughout the centuries. These schools, in the past, not only oriented education but also shaped the production of scientific discourse.

# Greece over the years

Over time, education has diverged from the evolution of science. There has been a clear separation between providing education to citizens and the realm of research.



# Greece over the years

The goal of the current educational system is to train students to a high level in terms of cognitive subjects. The curriculum they face is equivalent to that taught in other countries in the early university years.



# Modernizing the Curriculum:

The curriculum needs to be updated to be more relevant to the 21st century, emphasizing critical thinking, digital literacy, and skills required in today's globalized world.



# Teacher Education

Investment should be made in the continuous professional development of educators, focusing on modern teaching methodologies, integrating technology, and student-centered approaches.



# Digital Transformation:

Technology should be integrated into classrooms, offering online resources, e-learning platforms, and digital tools to enhance learning experiences and accessibility.



# Evaluation:

Reforming evaluation methods to focus on holistic assessment, including project-based assessments, portfolios, and applying knowledge in the real world, removing traditional exams.



# Engagement of Stakeholders:

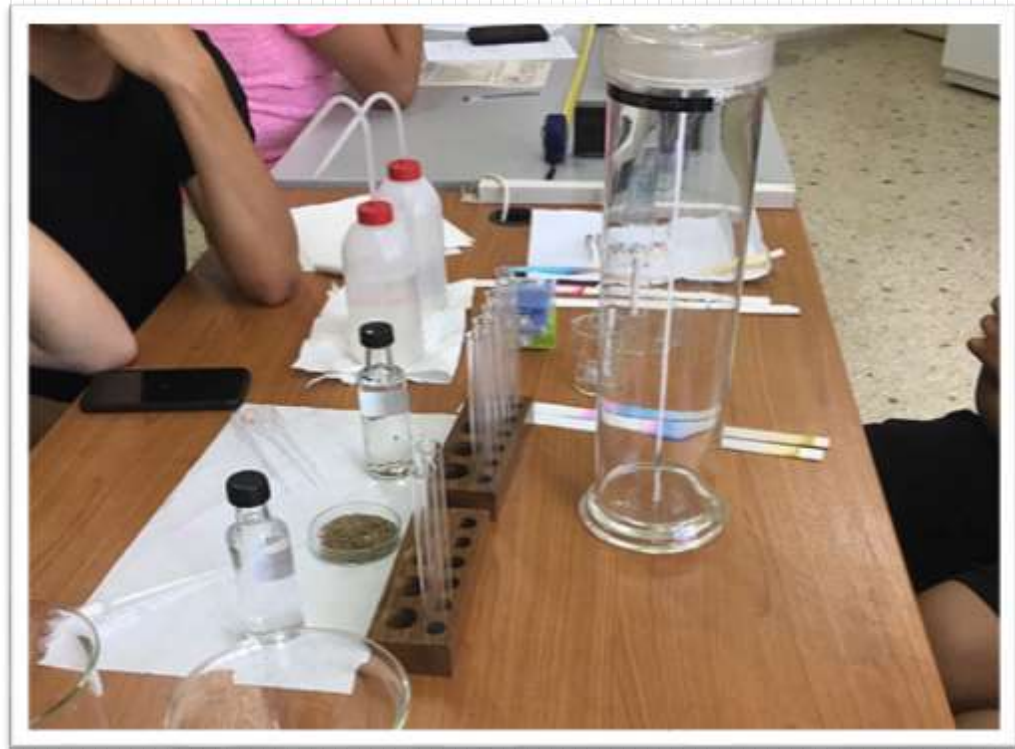
Involving parents, communities, and stakeholders in decision-making processes, enhancing collaboration and shared responsibility for educational outcomes.





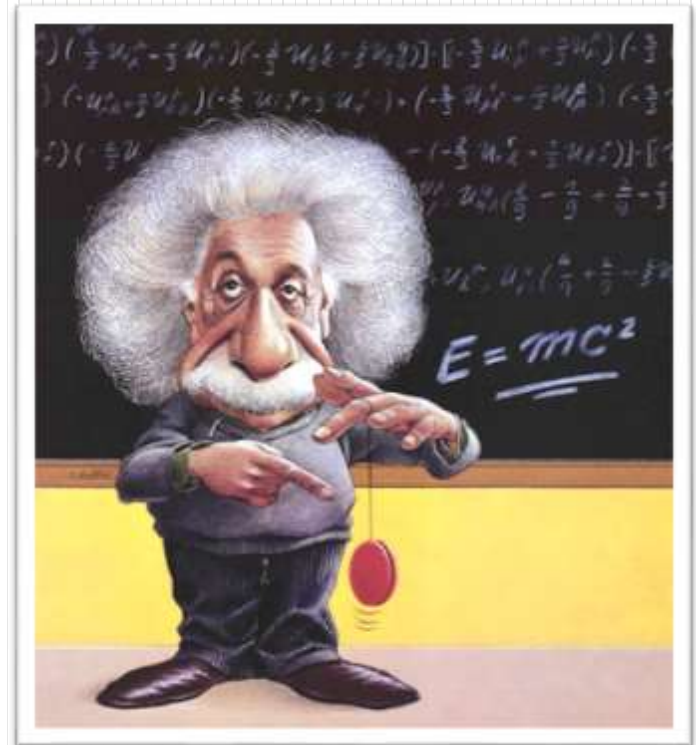
# Research and Innovation:

Encouraging research, innovation, and collaboration among educational institutions, policy makers, and industry partners to promote continuous improvement and excellence in the education system.



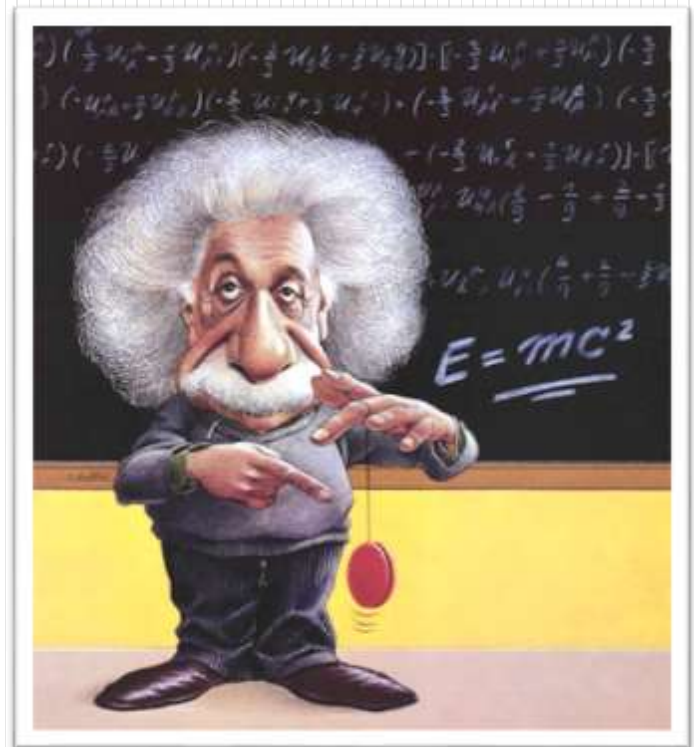
# The reality:

Regarding the subject of physics, beyond the material, students encounter significant mathematization. Students are increasingly finding it challenging. The number of students choosing paths that require physics as a prerequisite is continuously decreasing.



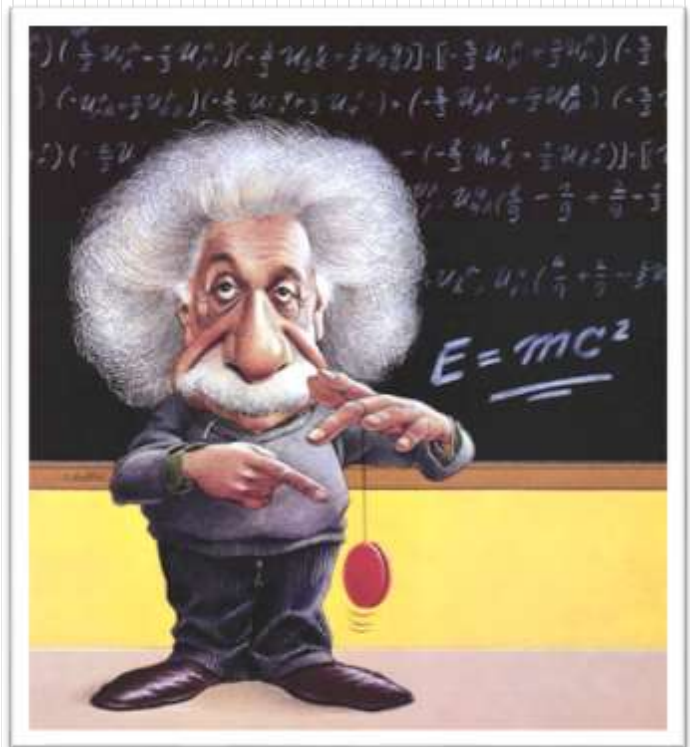
# The reality:

Education in Greece is centralized and governed by the Ministry of Education and Religious Affairs. The Ministry exercises control over public, private schools, universities, formulates and implements legislation, coordinates national level university entrance examinations, sets up the national curriculum, appoints public school teaching staff, and coordinates other services.



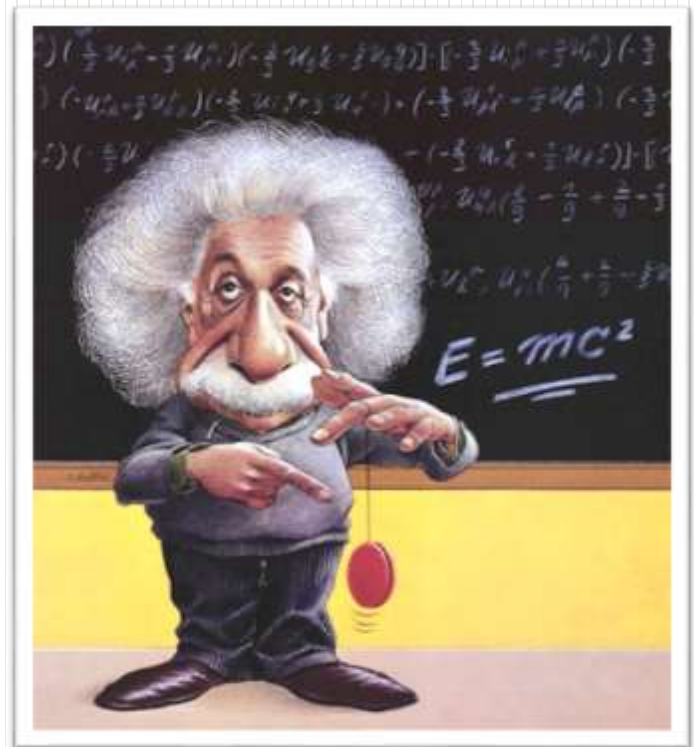
# The reality:

Over the years, the Ministry in question has made significant changes to the education system. Each government wants to adopt recent scientific findings in education systems and benefit from foreign education practices to meet the needs of the Greek society and labor market .The result was a multilayered education system. Most students in Greece attend public schools of all levels, for which there are no tuition fees while, according to the Hellenic Statistical Authority, between 4 and 6.5% of the student population enrolls in private schools of all levels.



# The reality:

It's important to note that the Greek educational system has made adjustments in recent years to align with the European Higher Education Area (EHEA) and the Bologna Process, which promote standardization and compatibility of higher education systems across Europe.



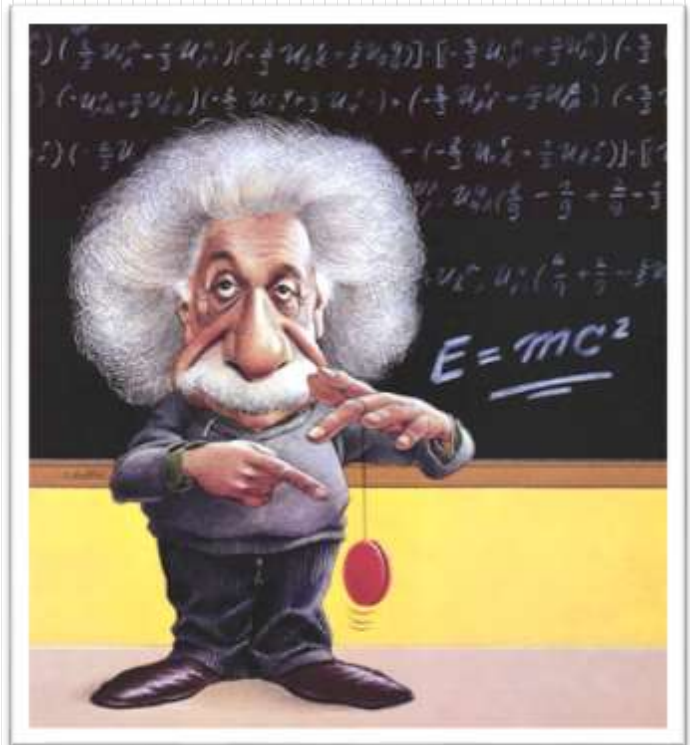
# The reality:

A few words on the teaching of physics in secondary education. In the secondary education we have the lower level gymnasium and the upper level Lyceum.

The timetable in gymnasium has for physics 1 hour in grade A, 2 hours in grade B and 2 hours in grade C

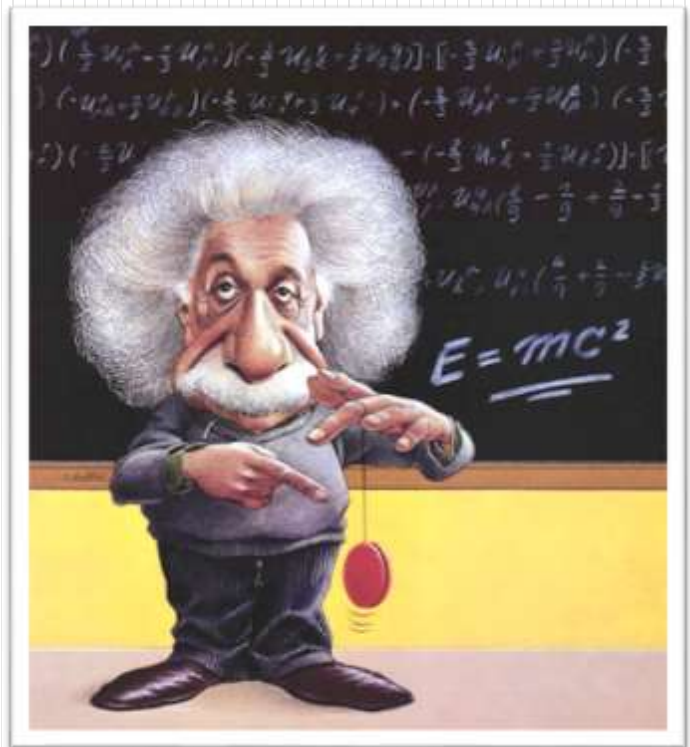
The lesson in A grade has an experimental nature and one hour is considered insufficient.

In the other two classes, no problem solving is requested. This creates a problem in the smooth transition to lyceum.



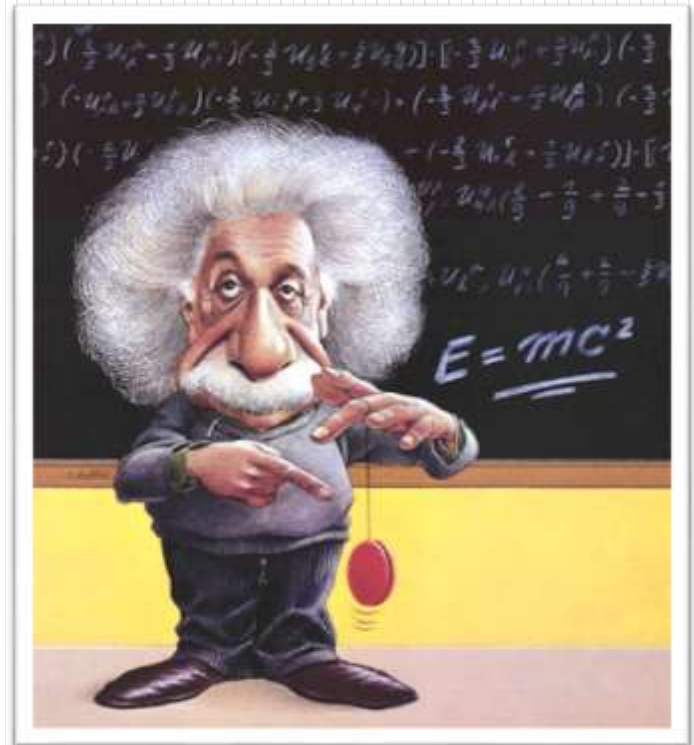
# The reality:

In the lyceum timetable, has 2 hours for physics in first grade, second grade has a combination of General Education courses 2 hours and Advanced Placement courses 2 hours and in third grade has 6 hours Advanced Placement course. Students who wish to pursue studies in Higher Education take Panhellenic exams in a specific number of Advanced Placement courses which fall into one of the following categories: Humanities, Science and Medical Studies, Finance and Computer Science Studies. This is considered to be a tough and highly competitive exam process that students go through in order to ensure education at a higher level..



# The reality:

Generally, the physics curriculum in Greek secondary education covers various topics, including mechanics, electromagnetism, thermodynamics, optics, and modern physics. The curriculum aims to provide students with a solid foundation in fundamental physics principles and develop their problem-solving and critical thinking skills.

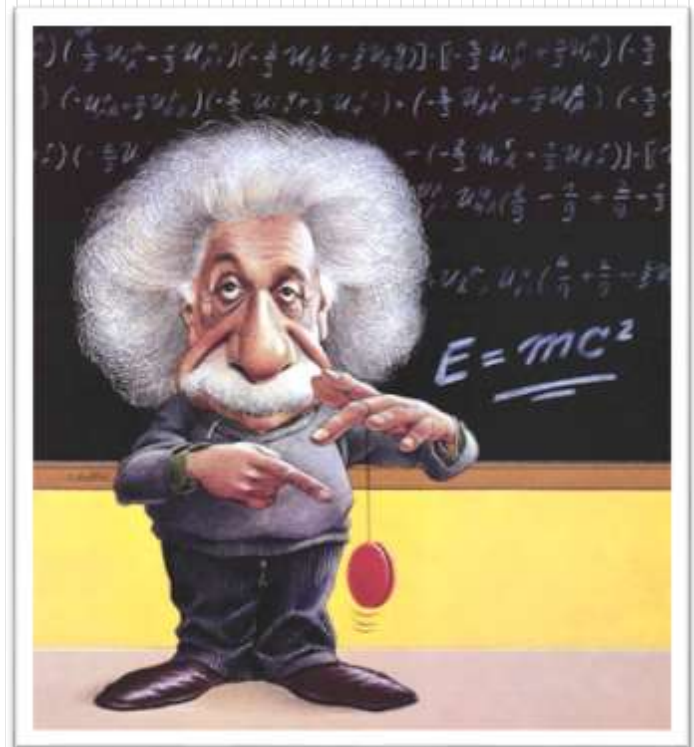




# The reality:

Teachers typically follow a structured program that includes theory, experiments, and problem-solving technics. They may also incorporate digital tools and resources to enhance learning experiences.

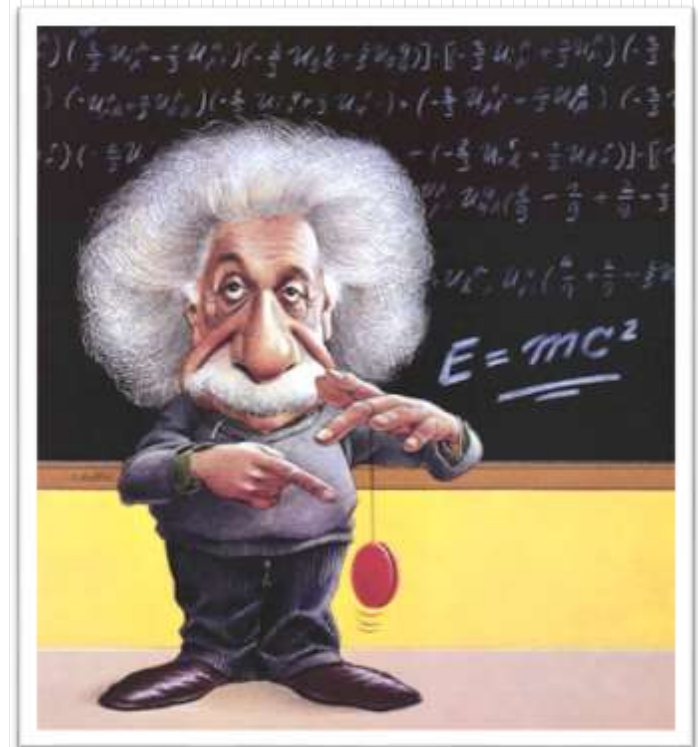
The physics course in lyseum is examined in writing in June, but not in the general education course in the second grade. This creates huge problems. Students do not pay attention to the lesson



# The reality:

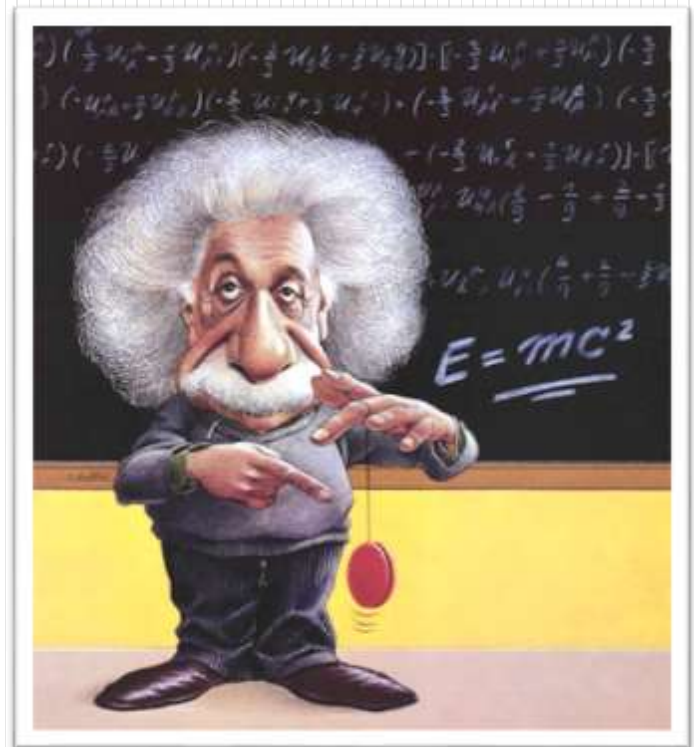
The absence of experimental teaching makes it difficult to understand the theory. The performance of experiments is foreseen. But the teachers, under time pressure and oriented towards written exams, avoid experimental approaches.

The absence of an experimental problem in written exams makes students disinterested in experimental work.



# The reality:

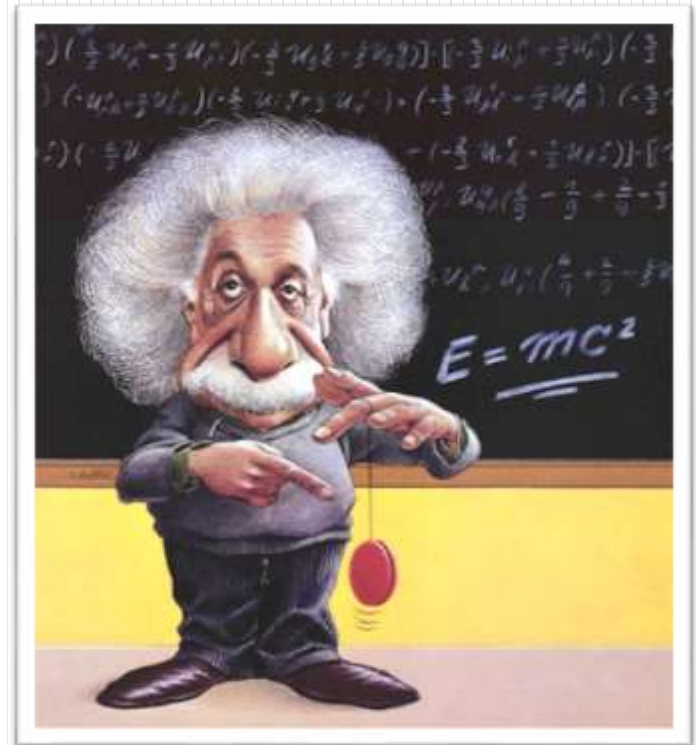
In addition to schooling, the majority of students attend extracurricular private classes at private tutoring centres called "frontistiria" or one-to-one tuition. These centres prepare students for higher education admissions, like the Pan-Hellenic Examinations, and/or provide foreign language education.



# The reality:

The students do not have physics as their first choice. With the application to the overall score of the minimum admission score in universities, many vacant positions remain in the physics departments

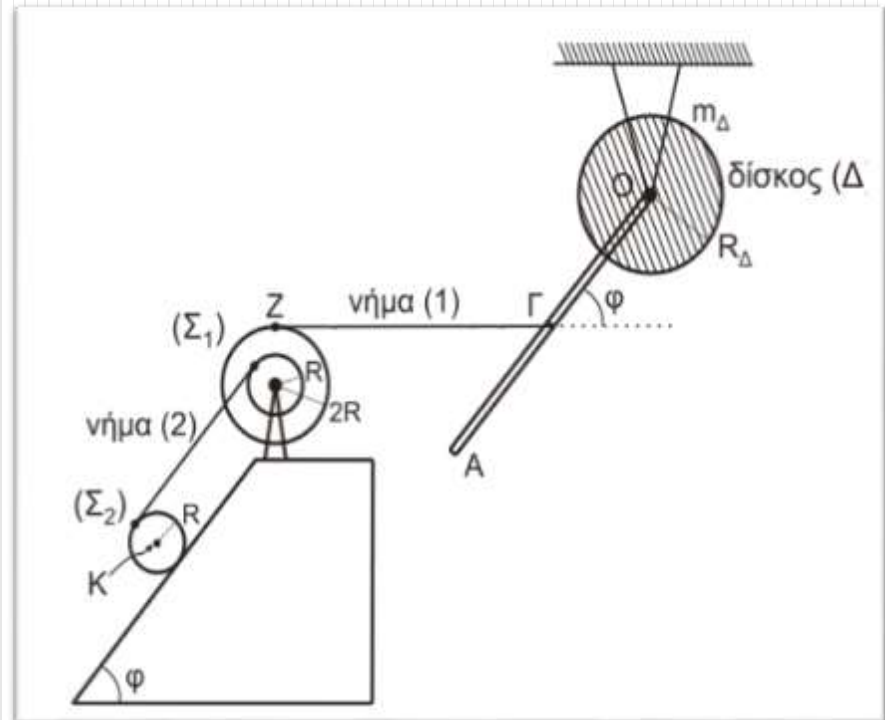
Seven Greek universities have physics departments and the studies last 4 years. The graduates can continue their studies for a master's degree and a phd diploma.



# The reality:

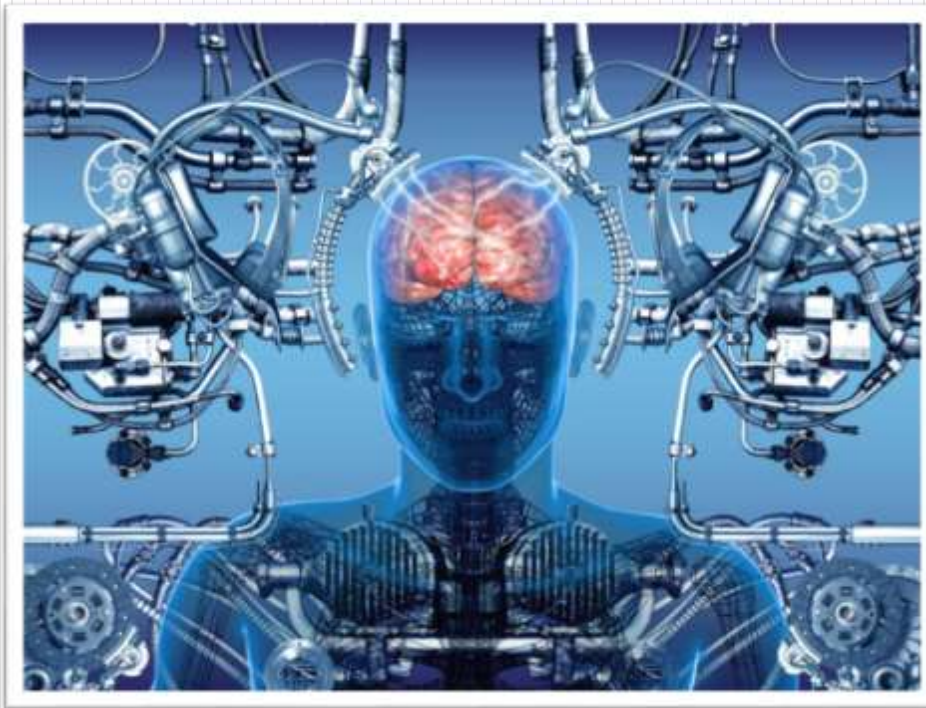
On the other hand, many students participate in research programs with particularly encouraging results.

The prospect of teaching physics in the coming years with such an extensive curriculum creates concerns. Teaching via interactive boards without suitable software will not solve any problems.



# The reality:

The existence of multiple textbooks and electronic notes for an immature audience will not be successful. The effort to steer students and citizens towards unlimited use of information technology will create a society of alienated individuals.



# The reality:

**Information technology should be a tool utilized by all sciences, not the dominant subject of education.**

**The outward orientation that is a fundamental requirement for schools encounters many difficulties. Mainly, the staff mostly settle for in-class lessons and nothing more.**



# The reality:

Unfortunately, few schools engage in programs that awaken societal awareness or social contribution

There is a better picture in European programs. We are far from a satisfactory image.





# The reality:

In the modern era, physics must be the predominant choice as it's the science that can change the world. It should form the core of the analytical curriculum, create conditions for research, open students to the local community, and encourage international collaborations through a wide range of program themes.



# The reality:

The HPS (Hellenic Physical Society) is trying to improve the situation. Through continuous interventions in the Ministry of Education and the Institute of Educational Policy, they comment on issues related to the teaching of physics in print and electronic media. They highlight new scientists engaged in physics, bringing accomplished scientists and university professors closer to students and the wider public.



# The reality:

They organize **10** competitions, summer schools, conferences, and seminars related to physics. They conduct studies and publish books that assist in the teaching of physics. Additionally, they organize informational events for society on everyday issues related to the natural sciences.

