

First Impression of Greek University Students on Taking Massive e-Exams due to COVID-19 Pandemic

Dear Editor-in-Chief,

Previous letters have suggested the implementation of certain measures to either ameliorate the effects of the financial crisis or even modernize the Greek academic institutions over the previous decade (2010-2019), either in general¹ or in the context of biomedical education.² In these letters, the authors proposed a series of predesigned steps to achieve the desired results. What we would like to raise the attention of the readership to, is another driving force of change in the Greek academic sector (other than carefully designed plans): forced adaptation to external circumstances, like to COVID-19 pandemic. Some European countries (like the United Kingdom or Nordic countries) have made serious investments in e-learning platforms and curricula over the last 10-15 years (and thus acclimatized their corresponding academic communities into the concept of e-exams),³ while others, like Greece, are not similarly mature in efficiently (from an organizational, pedagogic and technological point of view) integrating distant learning approaches and e-examinations into their academic curricula.

Nevertheless, recent restrictive governmental measures to confront the first stage of the COVID-19 pandemic (lasting from April to June 2020) forced the Greek academic institutions to follow purely distant learning approaches (and examinations), in accordance with the social distancing regulations.⁴ The administrative and academic staff of Greek universities had to make the appropriate preparations to introduce an e-exams protocol for the spring semester 2020. e-examinations in most universities took place from June to July 2020 and thus the time to design and prepare a distance evaluation protocol was a challenging exercise within very narrow timeframes. On top of this reality, weekly reports from the Ministry of Health and the General Secretariat for Civil Protection imposed frequent changes in the decision-making process at the University level. It has been roughly estimated that the time from decision to realization of the first e-examination session was less than one month. In that time, the e-examinations committee of each institution or department had to propose a viable plan and publish guidelines for students who intended to participate in these exams. Taken into consideration that each University in Greece has the autonomy to take decisions and design an evaluation protocol independently of

others, no unified scheme has been implemented across the Greek academic community to perform e-examinations. Even so, in most institutions, the process of e-examination was approached as a timed and supervised assessment of students, each of whom used their own personal computer, either in a University-located facility (for instance a lab), or at home. Personal computers were running a standardized operating system and, in many cases, also an e-examination software to prevent student from utilizing multiple communication channels. Cameras and microphones were also used in most instances for distant surveillance (i.e. as an additional precautionary measure to secure the integrity of the examination process).

Adaptation of the academic routine to the extraordinary circumstances of the new coronavirus-related healthcare crisis, especially when it comes to implementing the previously mentioned, unprecedented practices of e-examinations, had a mixed impact on the attitude of students (besides admin and academic staff). Our preliminary findings (Figure 1) indicate that (i) more than a third of students think that e-learning is a modern educational approach improving learning efficacy, but less than a third of them find e-exams a suitable examination method, (ii) while about half of the students would recommend e-exams, only a third would recommend replacing the traditional ones, (iii) more than 40% of the students find e-exams more secure than traditional exams, but at the same time 40-50% of them think that they are also more stressful, less diverse, less just and less flexible for different types of students and favor cheating easier, compared to the traditional exams and (iv) more students prefer handwriting than typing. Finally, in the context of the E-exams of the Greek academic spring semester 2020, more students felt that there was a legitimate identification process for entering the e-examination workspace, that instructions were clear and adequate, that the software used was good and fit-for-purpose and that examination form home is in various regards practical, but at the same time, they thought exams were not easy, they didn't have enough time and the e-submission process was stressful. Attitudes were almost split in half on whether the technology supporting the e-examination process was reliable or not. From a broader perspective, our preliminary findings on the Greek students' attitudes towards

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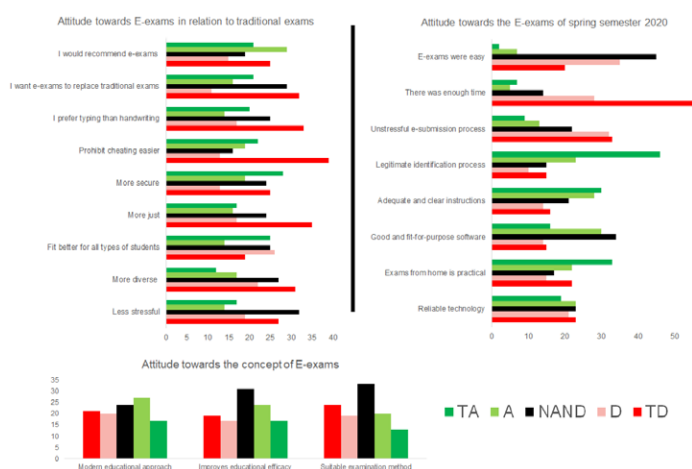


Figure 1: Attitude of university students towards e-exams.

Data were collected between July-August 2020 from 109 individuals via electronic invitations (to student e-mails and forums). The responses of the students in 20 Likert-scale items depicting their attitude towards e-exams in relation to the traditional ones (9 items, left upper panel) or their attitude towards the particular e-exams of the academic spring semester 2020 (8 items, right upper panel) or their general attitude towards the concept of e-exams (3 items, lower panel) are presented in the form of percentage values. A: agree, D: disagree, NAND: neither agree nor disagree, TA: totally agree, TD: totally disagree

e-exams reflect current international attitudes on the matter. Electronic exams may have certain advantages over the traditional paper-based exams. These include the use of multimedia/ hypermedia and simulation software, which can provide higher validity in terms of professional work practice. Moreover, e-Exams may offer additional benefits like elimination of illegible handwriting, reduced logistical overheads, saving of raw materials and time-saving both for students and professors who are responsible for the evaluation.⁵ On the other hand, one of the biggest concerns when discussing e-Exams is security. On paper-based exams there are supervisors who are responsible for monitoring the examination process and make sure students do not break exam rules, as they are defined by each higher education institution. On a blended exams protocol, students may give examinations by distance but in supervised environments, like standardized language examinations and computer driving license tests for example. Both surveillance equipment and supervising personnel are involved in such examination frameworks. But in pure digital and distance examinations, in which students give exams in their home environments, security issues are of major concern. In such cases, there are security methods which may use special software, like the Australian e-Exams system, to limit access to the external media drive (USB flash) and restrict communication with

the outside world.⁶ Moreover, this kind of software may require a desktop security image photo for every sitting. Other examples include the Abitti project which was applied in Finland.⁷ Finally, some people consider computer equipment unreliable, cheating potential higher in e-Exam and support that traditional paper-based exams are perceived as more transparent. Moreover, paper-based exams do not require computer driving abilities like typewriting. It seems that there are still important steps that need to be done to convince people that an e-Exams process is equally safe and valid.^{5,8} The preliminary findings we present in this letter are in accordance with current international views on the challenges of making students engage with E-education,⁹ and indicate that a serious, coordinated effort needs to be made to better acclimatize students into the concept of E-learning and E-examination, should these approaches be adopted for systematic, permanent use by the Greek academic institutions. Regardless the reason (being an environmental enforcer like the COVID-19 pandemic or a carefully planned governmental reform), Greek universities should explore new pathways to modernize (and internationalize) the content of their curricula, align their methods of providing education and training with the capabilities of the forth industrial revolution and multiply their affiliations with foreign academic institutions under the umbrella of multi-center, integrative research activities, to become a highly competitive domestic sector for the Greek economy, able to support the country in times of financial difficulties (like during the years 2010-2019), healthcare crisis (like during 2020-2021) or any other potential future, local or global, challenge.

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