

# Impact of introducing E-learning in Secondary Education during Pandemic

A case study of a tutoring school in northeast Greece, based on teachers' perspective

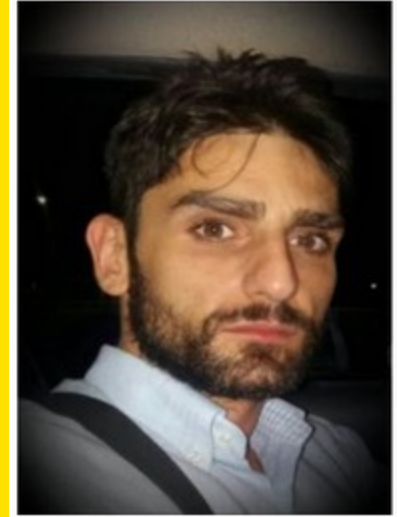


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# Introduction

- Covid-19 pandemic affected educational organizations to adopt new educational delivery models. The use of digital tools has been common in universities and in adult education. However, the adoption of e-learning in secondary education for minors has been a new and challenging phenomenon. This paper intends to elicit information about the challenges that students, teachers and organizations faced during the pandemic, when e-learning was introduced as the only means to teaching minors.

## Research Questions

RQ1: What were the challenges faced by students, teachers and the organization in introducing e-learning during the pandemic, according to teachers' opinion?

RQ2: What was the impact of the introduction of e-learning after the return to face-to-face teaching?



# Literature Review

Students' challenges	Teachers' challenges	Organizational challenges
Poor internet coverage	Lack of training in ICT technologies	Culture reluctant to changes
Poor internet speed	Reluctance to change	Lack of financial sources
Limited internet data packages	Lack of online time management skills	Electricity shortages
Lack of electronic devices	Low motivation	Issues with the internet connection coverage and speed
Lack of ICT knowledge	Feeling of loneliness	Inadequate coordination
Variation of different educational platforms	Maintain the balance between the working and the personal life	Lack of digital skills by the staff
Lack of technical support	Maintain students' attention and engagement	Resolve members' technical issues
Lack of sense of learning community	Conducting online assessments	Distribute information about e-learning to staff
Absence of physical presence of the teacher	Observing the students	Choosing software application
Low motivation and ineffective communication	Higher workload	
Anxiety and depression caused by the pandemic	Development of course content & learning activities	
Time waste due to technical issues	Adopt online pedagogical approaches to students' demands	



# Methodology

Qualitative case study has been chosen as it is a suitable tool to explore events, situations, programs and activities in the context they occur. Semi-structured interviews were conducted for empirical data collection, as they provide a wealth of information, while the data can be compared more easily. Based on the snowball sampling method, the interviews were conducted in the educational organization, In total 9 teachers participated in the interview process.



# Theoretical Framework

A theoretical framework was developed to assess organizational learning. Argyris and Schon made a distinction between two different types of learning:

- a) the single-loop learning, which relates to changing theories of action by refining them
- b) the double-loop learning, which relates to changing theories of action by questioning the shared beliefs, norms, and assumptions to reach a new set of theories-in-use.

Single-loop learning is the way of learning that it is adopted when following specific instructions faithfully, without further examining the procedures and the causes of problems. These processes are repetitive routine behaviours and involve adapting to the circumstances, without worrying about long-term solutions. They solve the problems without altering the organization's fundamental processes and nature.

Double-loop learning is the procedure of comparing the norm with the situation, questioning the appropriation of the norm, and justifying whether the selected method is the best way of doing things. New set of norms are established to adapt to the environment, which means that an organization might change its policies and its objectives.



# Findings

<b>Students' challenges</b>	<b>Teachers' challenges</b>	<b>Organizational challenges</b>
Poor internet connection	Poor internet connection	Technological upgrade
Lack of electronic devices	Lack of electronic devices	Additional financial cost
Lack of sociability	Lack of sociability	Solve students' and teachers' technological issues
E-learning did not give them any pleasure	Need to adopt new educational approaches	Coordinating the educational processes
Difficulty to understand the content of the course	Motivating the students	The reluctance to adopt e-learning by a portion of the members of the organization
Sense of indifference	Supervising children	The pricing of e-learning services
	Physical fatigue	





# *Discussion*

- Regarding the students, technical issues were major challenges for them. Many children had poor internet connection at home, and they lacked the essential electronic devices in order to participate in lessons. Especially families with many children did not have enough devices for every child to participate in the learning processes.
- Regarding the teachers, they faced difficulties in using the new electronic tools and applications to deliver the lessons. Moreover, the poor internet connection and the lack of the essential electronic devices to deliver the lessons were some technical challenges they faced initially. The teachers needed to find new educational approaches to teach in new electronic environments. They had to obtain new skills in order to motivate the students to participate, keep their interest and explain the course content.
- Moving on to the educational organization, there was a need to buy new technological devices due to the growing demand for laptops and tablets, as many teachers used organization's classrooms to deliver the lessons. Furthermore, the organization had to upgrade the internet connection. These needs brought additional financial costs to the tutoring school. A major challenge for organization was the coordination of the learning processes. The secretariat had to organize e-classes in Skype, handle information about students' absences and grades, scheduling the exams and receive payment of the tuition fees.



## **Using the theory of organizational learning to assess the impact of e-learning on the educational organization**

“Orosimo 2001” provides complete freedom in the choice of teaching methods and tools to teachers. The teachers that teach mathematics, physics and chemistry adopted e-learning tools during the pandemic, while after the school closures did not continue to use them. They use just some social media platforms to communicate with children and inform them about the schedule and solve potential questions about the lessons. According to organizational learning theory, these teachers adopted specific tools, without worrying for long-term solutions. They did not perceive the pandemic as an opportunity to reflect and transform their educational methods.

On the other hand, the philologists who teach Ancient Greek, Latin, Modern Greek Language, History and Literature adopted the use of electronic tools even after returning to face-to-face teaching. These teachers continue to use chat applications to communicate with students, but they also use electronic tools, such as PowerPoint, video, and other multimedia, to make their lessons more interactive and student-centered. The pandemic crisis was seen by philologists as an opportunity to adopt electronic tools and enrich their teaching. The members understood the problem, changed their attitude, and chose the appropriate strategy for long-term solutions. Therefore, these teachers fall into the category of Double-loop learning.



# Research contribution

- ★ This research work contributes the existing literature to describe the challenges and impact of e-learning in secondary education during the pandemic, a topic that has not been sufficiently investigated. The findings of the research can be used as a tool for educational organizations in order to mitigate the negative impact of e-learning. Furthermore, the data of this study can be used in order to define the training needs of the teaching staff and structure training programs in digital tools.



# Suggestions for future research

- As a suggestion for future research, it would be useful to explore the views of students and other members of educational organizations about the challenges they faced during the pandemic. This could help identify differences and discrepancies with teachers' views.



# Thank You

