



GREEK PRIMARY SCHOOL TEACHERS' PROFESSIONAL EXPERIENCE AS DIGITAL ACTORS

PANAGIOTIS GIAVRIMISV

Potrjeno/Accepted
31. 8. 2023

University of Aegean, Department of Sociology, Mytilene-Lesvos, Greece

Objavljeno/Published
11. 12. 2023

CORRESPONDING AUTHOR/KORESPONDENČNI AVTOR
giavrimis@soc.aegean.gr

Ključne besede:
Osnovnošolski učitelji,
IKT, digitalna
neenakost, Grčija

Keywords:
Primary school
teachers, ICT, digital
inequalities, Greece

UDK/UDC:
37.014(495)

Abstract/Izvleček

The present study investigates teachers' views on their experience as digital actors in the context of Greek educational policy. The interview was used as a tool for data collection. Findings revealed that the teachers in our survey highlighted the shortcomings of the Greek educational approach in terms of material and technical infrastructure and the training of teachers regarding ICT. Through this new digital context of education, teachers conceptualize their competence and self-efficacy, their self-perception, and their emotional response to integrating new digital tools into teaching practice.

Poklicne izkušnje grških osnovnošolskih učiteljev kot digitalnih akterjev

V študiji raziskujemo stališča učiteljev o njihovih izkušnjah v vlogi digitalnih akterjev v grški izobraževalni politiki. Kot orodje za zbiranje podatkov je bil uporabljen intervju. Ugotovitve so pokazale, da so učitelji v naši raziskavi izpostavili pomanjkljivosti grškega izobraževalnega pristopa v smislu materialne in tehnične infrastrukture ter usposabljanja učiteljev glede IKT. Učitelji s tem novim digitalnim kontekstom izobraževanja konceptualizirajo svoje kompetence in samoučinkovitost, dojemanje sebe in čustveni odziv na vključevanje novih digitalnih orodij v pedagoško prakso.

DOI <https://doi.org/10.18690/rei.2762>

Besedilo / Text © 2023 Avtor(ji) / The Author(s)

To delo je objavljeno pod licenco Creative Commons CC BY Priznanje avtorstva 4.0 Mednarodna.

Uporabnikom je dovoljeno tako nekomercialno kot tudi komercialno reproduciranje, distribuiranje,

dajanje v najem, javna priobčitev in predelava avtorskega dela, pod pogojem, da navedejo avtorja

izvirnega dela. (<https://creativecommons.org/licenses/by/4.0/>).



University of Maribor Press

Introduction

In recent years and since the COVID-19 pandemic, a rapid change in the status of ICT in educational practice has been observed. Educational systems are increasingly investing in new technologies. The fourth industrial revolution, with the automation of production and the development of artificial intelligence, is leading to an ongoing transformation of teaching practice (Schleicher, 2020). Interactions in the learning context deconstruct the traditional contract of face-to-face teaching, and the spatiotemporal classroom boundaries are widening. The appropriation of knowledge is mediated by digital factors (e.g., internet, digital information, etc.), the arbitrary authority of the teacher's dominant figure has long since faded, and learning has moved away from the former objectified form it used to take and is becoming multifaceted as new modes of transforming, organizing, and analysing it have emerged (Pokhrel and Chhetri, 2021; Zhao and Watterston, 2021). The contemporary history of social life dynamically blends the local with the global and symbiotic educational reality with new technology's synchronic or asynchronous digital reality.

Theorists approach digital inequalities and knowledge as forms of power signalling and, simultaneously, as a field of social struggle, control, domination, or negotiation. The possession, access, and usage of technological tools and technological products define a special cultural status and identity, which presupposes the acquisition of digital knowledge and skills and are manifestations of power and relative strength. The new digital reality is how the ideological underpinnings of social reproductive practices document current social arrangements as necessary and justified (Drucker, 1996).

The Teachers' Role in the postmodern era

Postmodern societies rely more on information management and skills specialization than pre-industrial societies (Kelpandis and Vriniotis, 2004). According to Giddens (2001), the new way of approaching knowledge subverts the traditional mechanisms of knowledge appropriation. The globalized economic context through the power of ICT impacts knowledge and its transformation and the emergence of information as a commoditised product. The production and accessibility of information and its usage have been commodified (Raggneda and Muschert, 2013).

Contemporary capitalism is based more than ever on the distribution of information, and digital networking is creating digital capitalism (Fuchs, 2013). Knowledge takes on multifaceted dimensions, and the new cognitive tool transforms the organization, analysis, and interpretation of knowledge, as well as factors of consideration of sociocultural reality, merging the local with the global (Robins and Webster, 1999). Teachers are proselytized and act as mediators in establishing the dominant socio-political system perpetuating the social inequalities that have emerged in the Information Society (Witte and Mannon, 2010).

In the post-modern educational context, the teacher himself does not determine the educational practices of education (teaching models, curricula, syllabuses, etc.). The teacher has limited autonomy, while educational practices are shaped within the structured framework of the state and the epistemological demands of the contemporary era. It is difficult for teachers to objectify their work as an artefact of their personality and professional identity. Teachers also have difficulty recognizing themselves, their skills, abilities, and creativity, on account of their activity in the new era. At the same time, the colonization of education by the new methodological tools is shaping new conditions for conceptualizing work and the self. Difficulty in determining one's professional and personal identity shapes the borders of others' management within the educational community. Under stress, disembodiment, and the imposition of cultural differentiation by dominant groups in their school life, teachers become alienated from themselves and their relationships with community members (Mesaros, 1974).

All the above imposes much pressure on the teachers and brings up the project of their training. In such an environment of fluidity and change, teachers thus require education and training (Elliot, 1977) adapted to the new social conditions to acquire a higher level of skills, a comprehensive education, and the establishment of a lifelong education (Hargreaves, 1994). The use of ICT on its own does not automatically mean the modernization of a school system. The availability of a specific training policy can contribute to this, which, in the context of a broader educational policy, should promote the teachers' academic, professional, and personal development.

ICT education in Greece

The integration of ICT in Greek education follows the general development of ICT in Greece. In 2014, Greece had not yet captured the full range of benefits from ICT adoption, as it was still lagging behind Europe in 65 out of 84 ICT indicators (77%), based on the European Digital Agenda Scoreboard (2014) (Foundation for Economic and Industrial Research, 2015). However, the Greek ICT sector grew faster than the global ICT sector over the years 2017-2021, especially during the pandemic. According to the Digital Economy and Society Index (DESI), Greece, although it has made much progress in recent years, still ranks among the lowest (25th) in the EU-27 regarding human capital, connectivity, digital technology integration, and digital public services (European Commission, 2022). Fifty-two percent of people (age 16-74) and 88% of young people (16 - 24 years) have at least basic digital skills. There were 8.5 million internet users in Greece in January 2022 and 7.40 million social media users in Greece in January 2022. In Greece, individuals and workers often lack the foundation skills necessary to flourish in a digital world. In Greece, the connectivity gap between households in rural areas and large urban areas exceeds ten percentage points. In Greece, more than one in five households is not connected to the Internet (Organisation for Economic Co-operation and Development, 2019, p. 143). In 2005 the proportion of people with internet skills was 25.2%; in 2007, 36.01%; and in 2013, it reached 62.44% (Eurostat, 2023a). Also, in 2015, 44.01% of individuals had digital skills, and 2019 50.52% (Eurostat, 2023b). In this framework of the Greek educational system, ICT teaching was initially implemented fragmentarily in the 1980s. The Unified Curriculum (YPEPTH, 1998) systematized the introduction of ICT in education, while the *Cross-Thematic Curriculum Framework* (Greek Ministry of Education and Culture, 2003) innovatively aimed at compulsory education to develop digital literacy in students and to familiarise them with the various applications of computers as a learning tool, as a cognitive - exploratory tool and as a tool for communication and retrieving information in the context of daily school activities (Greek Ministry of Education and Culture, 2003). The new 2021 Curricula for informatics are by the Interdisciplinary Unified Curriculum Framework from the first grade to the Lyceum (I.E.P, 2021).

Furthermore, in the past two decades, in Greece, educational training activities for teachers regarding constantly renewing ICTs have been developed by private educational institutions and associations (Hellenic Mathematical Society, Greek Physicists' Union, etc.) and universities. The first training effort in ICT for teachers was conducted through the PEK (Regional Training Centres), which were established in 1992. A great impetus was given by programs funded through the EU. In the initial programs, the emphasis was on knowledge and skills in new technologies (A-level training course, "Training of primary and secondary teachers in the basic skills of Information and Communication Technologies (ICT) in education" (2002-2008). It should have paid more attention to the pedagogical and instructional integration of ICT. Research results on the above have shown that there was a change in the level of knowledge and skills among teachers who attended the programs, and the usage of ICT in teaching practice increased significantly after the training (Jimoyiannis and Komis, 2007). However, support for instructional activities was inadequate (Author, 2011; Komis, 2000), the organization of training programs had considerable problems (Jimoyiannis and Komis, 2007), and doubts were also raised about their effectiveness (Kyridis et al., 2006). At the end of the first decade of the 21st century, a long-term program on the pedagogical usage of ICTs in instruction, as well as training programs for trainers (B-level training course, "Training of teachers in Information and Communication Technologies (ICTs)" 2008-2014) began to be implemented.

Finally, the implementation of "emergency remote education" during the pandemic period and the resulting violent and dynamic change in educational processes revealed several aspects related to the digital literacy of teachers, such as a) teacher confusion and stress (Koutsogiannis, 2020, p. 550; UNESCO, 2020), and their lack of training (KE.ME.TE, 2021; Perifanou et al., 2022; Samioti, 2021); b) the social and digital inequalities that digital technology causes in both teachers and students (Author, 2020; Ralli, 2021), and c) the reflection on the transformation of the role of teachers and in the methodology of teaching practice (Author, 2020; Jimoyiannis et al., 2020). The integration of ICT in Greece during the COVID-19 period revealed barriers to its implementation and the direction in which educational policies should be oriented. Two of the most significant issues, upgrading the logistical infrastructure and teacher training, have not yet been addressed.

The present study investigates teachers' views on their experience as digital actors in the context of Greek educational policy. Research questions included how teachers experience themselves as digital actors and evaluate Greek educational policies on ICT use.

Method

Qualitative research was used. Qualitative research involves a naturalistic and interpretive approach to social phenomena, in their natural context, through the discourse of individuals and their interpretive schemas (Denzin and Lincoln, 2005). In addition, qualitative research approaches social phenomena by conceptualizing the acting subjects and their social action as a complex symbolic construction adopting reflection processes (Tsiolis, 2014). A phenomenological approach was chosen in the context of qualitative research in which the common conceptualizations of individuals of their lived experience regarding the phenomenon under study are captured. The phenomenological approach enables the researcher to identify and interpret the phenomenon's essence. The participants selected all had experience related to ICT implementation in Greek education and wanted to record their views in the research (Creswell, 2013; Denzin and Lincoln, 2005).

Participants

This study used the qualitative method to assess the participants' interpretations and social experiences. Participants were selected to ensure the appropriateness and adequacy of responses to the research questions (Iosifidis, 2017). Purposive sampling was used, and two strategies were followed: a) selecting those critical cases that are experts in the field of our research and b) ensuring maximum sample diversity (gender, age, years of service) (Flick, 2017). In total, 29 primary school teachers were selected, ten males and 19 females of several age groups. Participants' age ranged from 32 years old to 54 years old, with an average of about 41.5 years. Years of service were between 1 and 36 years, with an average of 13.5 years.

Table 1. Demographic Profile of Participants

Years of service	Age		Primary Education category		
1-5 years	7	30-40 years old	14	PE70	23
6-15 years	8	40-50 years old	12	PE11	3
16-25 years	8	50 years and over	3	PE06	3
26 years and over	6				
			<i>Work Position</i>		
<i>Area</i>			Typical class		16
Urban	17		Educational Priority Zones		2
Countryside	9		Integration class/Parallel support		5

Research Implement

For the present study, we used interviews for data collection and, more specifically, the semi-structured interview, characterized by a looser question structure. This is a qualitative research tool that aims to organize a communicative relationship between the interviewer and the interviewee, for the former to obtain information from the latter through appropriate questions (Iosifidis, 2017). The interview guide included four thematic axes:

- The first thematic area concerned teachers' conceptualizations regarding the digital divide. Indicative questions were: "What does the digital divide mean to you?", "Can you give us an example of a digital divide through your experience in school?"
- The second thematic area was related to the causes of the digital divide. Indicative questions were: "What are the causes of the digital divide?", "What explanation do you give for the existence of the digital divide in education?"
- The third thematic area referred to the consequences of the digital divide. Indicative questions were: "What do you think are the consequences of the digital divide in your daily life?", "What do you think are the consequences of the digital divide in your instructional work?", "Who is most affected by the digital divide in the school context?"
- The fourth thematic area included questions about ways to address the digital divide. Indicative questions were: "In your opinion, to address the digital divide, what can you personally do?", "In your opinion, what can the education system do to address the digital divide?"

Research procedure

In the present study, we chose the thematic analysis method to analyse the information from the interviews with teachers. Essentially, this is a method that identifies patterns within the data allowing the researcher to understand the research data in depth. Thematic analysis is valuable for studying data collected from open-ended research questions such as focus group discussions or interviews. In this research, coding was carried out after the data was collected through semi-structured interviews. Coding is a technique for identifying themes and concepts in the text and finding relationships between them. The central unit of analysis was sentences, paragraphs, or the whole interview text (Kyriazi, 2009, p. 238). In addition, coding was guided by concepts drawn from existing literature and theory. The next step was categorizing the data into multiple categories and sometimes subcategories. In the end, the processing of existing ideas and concepts was conducted.

Results

In the present study's findings, teachers' views on their experiences as digital actors are presented. Teachers' views are related to intrapersonal and interpersonal dimensions of their experience and the educational policies implemented during the integration of ICT in the Greek educational system.

*Teachers' experience as digital actors (Intrapersonal and interpersonal dimensions)***- Positive Teacher experiences**

Most teachers in our survey mention the positive effects of digital literacy on teaching practices. Digital literacy, according to these teachers, facilitates the learning practices and the instructors' actions and fosters an emotionally positive climate based on cooperation and emotional closeness between student and teacher. In addition, ICT supports the development of a network of information on educational work between schools.

Facilitate educational activities: *"Those who are familiar with using... They have collected supervisory material and not only their own, but they have the supervisory material of many teachers;" "... it is easy for me, who knows to search about the first flight into space...I can easily be ready in two minutes" (E3).*

Use of different teaching methods: *"I think a teacher working with technology can teach the same thing in various ways, with many comparisons..." (E8).*

Engagement - learner agency: *"With new technologies, students can be more engaged... you do not provide them with information that is, let us say, 'sterile;' they work on their own doing what they want to do, they feel more productive..."* (E12)

Increased emotional closeness with the teacher: *"And they feel closer to the teacher...the lesson becomes more pleasant, more immediate with the students, they feel more comfortable and relaxed, you interact better with each other"* (E1).

Developing an information network between schools: *"...you can communicate with other schools in Greece about the same subjects and how they teach them, to provide the children with additional information"* (E17).

- Negative teacher experiences

Nevertheless, some teachers have negative professional experiences as digital actors. For example, they feel undervalued or threatened and have feelings of burnout or feelings of knowledge inadequacy.

Underestimation: *"... Those who can use it are considered better. The others feel inferior, feel disadvantaged. I could place it in that way"* (E20)2.

Threat: *"I am threatened in some way on a daily basis. Because while I have some basic knowledge about technology, this constant growth is scary..."* (E143).

Emotional burnout: *"...apart from the fact that it is exhausting, and you do not have the patience, neither can I afford to follow it, nor do I have the time to deal with new technologies all the time"* (E7).

Feelings of knowledge inadequacy: *"Yes indeed, I feel that I should be able to learn some things; I lack skills, and I would only want to be trained to learn how to operate laptops, projectors..."* (E22).

Digital technology also harms people's social networking in terms of communication because of a lack of appropriate equipment or skills and their relationships with others, which can turn into dependent relationships.

Communication: *"In my everyday life... I think it has affected me most in the communication field. As some friends of mine do not have certain applications that I have or do not have the knowledge to use them"* (E28).

Interpersonal relations: *"... it can also affect relations with colleagues. Of course, it can have an impact..."* (E10).

Dependency on others: *"I find it quite difficult. I can be familiar with new technology and be a little independent regarding computers and not depending on other colleagues, to whom you become a burden"* (E4).

According to the teachers in our study, negative professional experiences are related to the insufficient utilization of ICTs in teaching practice, as a result of inadequate skills or inferior logistical equipment. In addition, teachers mentioned that professional inequalities are increasing as a result of a deficit in the necessary skills, and there is the stigmatization of schools that cannot use ICT.

Low usage of ICT in classroom practice: *“Regarding teachers, some of them may not use digital media so often to support their teaching practice”* (E25).

Negative consequences for students due to teacher inefficiency: *“I think students experience a learning disadvantage if the teacher does not know something to demonstrate to them ... the stimuli teachers provide may be less”* (E2).

Establishing a professional divide: *“... anyone who does not comply will be left behind ... that is, the one who does not have an internet connection and a computer is left behind”* (E21).

Education Policy on ICT Digital

Teachers reported outdated ICT resources in schools, which can malfunction. Usually, the Ministry of Education offers limited funding, which is insufficient for a fully equipped school, and the level of flexibility in the usage of ICT depends on the school's culture.

“Uh... okay... There are some worthy efforts to have the appropriate infrastructure available. However, unfortunately, school facilities are deplorable regarding infrastructure; there are schools with few labs or even no computers. Without interactive whiteboards even. I think there should be better material infrastructure, and every class should have its proper computer and projector” (E16).

“My difficulty is the infrastructure that does not exist in several schools to use the new technologies properly as I know how ... I do not feel that I can search; there is no electronic ‘library’ ...” (E19).

“We are privileged as a school compared to other schools I hear about since we have three interactive whiteboards” (E24).

State support is insufficient regarding equipment and teacher training, resulting in negative feelings concerning this issue. Teachers referred to the failure of the State to develop teachers' digital skills training at an adequate level. In-service training in Greece needs to be improved or extended. Teachers are often forced to join training programs on their initiative and at their own expense to cope with the new cognitive challenges of ICT.

“Training is not at all encouraging, and it depends on the teachers and their willingness to offer as well as their knowledge” (E11).

“I think training is not enough; I was trained too, but there were so many things I had to learn that maybe I could not sufficiently assimilate them as to feel secure” (E14).

“... for example, ICT training has stopped being provided. They only conduct exams, and as far as I know, these are administered in large testing centres located off-island” (E8).

Discussion

Teachers' life experiences in their professional careers and encounters as individuals with the differentiation of teaching practices and the postmodern context contribute to forming their identity as teachers (Hargreaves and Goodson, 2006). The present study investigated teachers' views on their experience as digital actors in the context of Greek educational policy.

Teachers in our survey mentioned both positive and negative aspects of their interaction with ICT. The positive reports from the group of teachers in our survey concerned pedagogical practices, since ICT facilitates instructional practice, and teachers' actions and forms an emotionally positive climate based on collaboration and student-teacher emotional closeness. In addition, ICT supports the development of a network of information on learning and teaching between schools. Studies have highlighted the above aspects of ICT's positive effects (Diamantaki et al., 2001; Gulbahar and Guven, 2008; Jimoyiannis and Komis, 2006; Jonassen et al., 1998; Kafai et al., 2002; Kyridis et al., 2003; Rumpagaporn and Darmawan, 2007). Moreover, many teachers had negative learning experiences as digital actors. They felt undervalued or threatened and had feelings of burnout or feelings of knowledge inadequacy. According to the teachers in our study, negative professional experiences were related to the low usage of ICT in teaching practices due to inadequate skills or lack of logistical equipment. Teachers mentioned that professional inequalities are growing on account of the lack of necessary skills, while there is a stigmatization of schools that cannot use ICT. Digital technology also harms people's social networking in terms of communication because of a lack of appropriate equipment or skills and their relationships with others, which can also turn into dependent relationships. Dysphoric states (e.g., anxiety, fear) have been confirmed in several studies (Demetriadis, 2003; Pelgrum, 2001; Preston et al., 2000; Vosniadou, 2006).

To deal with these issues, an effective education policy would be necessary. Teachers in our survey stated that educational policy in Greece for ICT integration in schools is inadequate or insufficient because of limited State funding, inadequate training, and the inappropriate culture of some schools.

State support needs to be improved in terms of financial support for the digital upgrading of schools and in the training of teachers, since the present situation has resulted in an unfavourable climate around the issue. In-service training in Greece is limited and needs to be improved. Teachers are often directed to join training programs on their initiative and at their own financial expense to cope with the demands of contemporary education.

The new cognitive tools of the postmodern era shape the different accessibility of teachers to learning resources and individuals derived professional experiences, making ICTs part of the interest conflicts between social groups (Giddens, 2001). The 'colonization' of education by new methodological tools alienates aspects of the teacher's experience of learning, such as their relationship with knowledge, their educational practice, their relationships with members of the educational community, and their relationship with themselves. Their differentiated views result from their professional trajectory in the postmodern and digital context. The social differentiation in subsystems that is taking place is a dynamic and continuous process that transforms social structures into new levels of social inequality, which have the management of new cognitive tools as a fundamental component (Giannakopoulos, 2005, p. 37), along with the manipulation and exclusion of individuals and groups (Melucci, 2002). Thus, the availability of digital resources establishes a new level of social stratification and new forms of inequality. Inequality and social classes are not approached materialistically but as unequal access to digital literacy. Digital inequalities and knowledge are perceived as both forms of power signalling and, simultaneously, as a field of social struggle, imposition, domination, or negotiation. As a mediating framework in teachers' pedagogical experience, the Greek educational policy function raises issues of the reproduction of social inequalities, which have been transformed into digital disparities. The school's orientation is also determined by digitally dominant social groups, which can impose ideological and educational policy agendas as another form of symbolic violence. Simultaneously, the public area of education, with its conditions of underfunding and insufficient teacher training, operates as a part of a commercialized education by reducing the availability of public resources, subverting the social contract of public free education, and pushing teachers to join private training organizations. The instrumentalization of the production process, the commodification of knowledge, and the increasing influence of market practices in education are among the inevitable consequences emerging in this context.

Conclusion

Overall, the teachers in our survey highlighted the shortcomings of Greek educational policy in terms of material and technical infrastructure and the training of teachers regarding ICT. The educational environment that is formed shapes the teachers' professional experience regarding the use and usefulness of ICT at Greek schools. Through this new digital context of education, teachers conceptualize their competence and self-efficacy, their perception of themselves, and their emotional response to integrating new digital tools into teaching practice. There is, therefore, an educational project to build a functional framework for introducing ICT in education that aligns with the latest cognitive tools provided in the post-modern era. At the same time, increased funding is deemed necessary to upgrade the quality of the material and technical infrastructure and train teachers in ICT.

References

- Creswell, J. (2013). *Qualitative Inquiry and Research Design: Choosing among five approaches*. Sage.
- Demetriadis, S., Barbas, A., Molohides, A., Palaigeorgiou, G., Psillos, D., Vlahavas, I., Tsoukalas, I. and Eurostat (2023a). Individuals' level of internet skills. https://ec.europa.eu/eurostat/databrowser/view/isoc_sk_iskl_i/default/table?lang=en
- European Commission (2022). Δείκτης Ψηφιακής Οικονομίας και Κοινωνίας (DESI) 2022: Greece. <https://ec.europa.eu/newsroom/dae/redirection/document/88749>
- Eurostat, (2023b). Individuals' digital skills. https://ec.europa.eu/eurostat/databrowser/view/isoc_sk_dskl_i/default/table?lang=en
- Foundation for Economic & Industrial Research (2015). *ICT adoption and digital growth in Greece*. http://iobe.gr/research_dtl.asp?RID=108
- Pombortsis, A. (2003). Cultures in Negotiation: Teachers' Acceptance/Resistance Attitudes Considering the Infusion of Technology into Schools. *Computers & Education*, 41, 19–37.
- Denzin, N. K., and Lincoln, Y. S. (2005). Introduction: The discipline and practice of qualitative research. In N. K. Denzin and Y. S. Lincoln (Eds.), *The Sage Handbook of Qualitative Research* (3rd ed., pp.1–32). Thousand Oaks, CA: Sage.
- Diamantaki, K., Davou, M., and Panousis, G. (2001). *New Technologies and Old Fears in the School System*. Papazisis.
- Drucker, P. F. (1996). *Post-capitalist Society*. Gutenberg.
- Elliot, A. J. (1997). Integrating the “classic” and “contemporary” approaches to achievement motivation: A hierarchical model of approach and avoidance achievement motivation. In M. L. Maehr, and P. R. Pintrich (Eds.), *Advances in Motivation and Achievement* (pp. 143–179). JAL.
- Flick, U. (2017). *Introduction to Qualitative Research*. Promobos
- Fuchs, C. (2013). *Social Media: A critical introduction*. Sage.
- Giannakopoulos K. (2005). *Virtual Communities: A sociological approach to the Internet. A sociological approach to social science*. Papazisis
- Giavrimis, P. & Nikolaou, SM. (2020). Teachers' views on the digital divide in Greece: a qualitative approach. *International Journal of Social Science Research*, 8(2), 46–58.
- Giavrimis, P., Giossi S. & Papastamatis, A. (2011). Teachers' attitude towards training in ICT: a critical approach. *Quality Assurance in Education*, 19(3), 283–296.

- Giddens, A. (2001). *The Consequences of Modernity*. Kritiki
- Greek Ministry of Education and Culture (2003). *A Cross-thematic Curriculum Framework*. Greek Pedagogical Institute.
- Gulbahar, Y., and Guven, I. (2008). A survey on ICT usage and the perceptions of social studies teachers in Turkey. *Educational Technology and Society*, 11(3), 37–51.
- Hargreaves, A. (1994). *Changing Teachers, Changing Times: Teachers' work and culture in the postmodern age*. Teachers College Press.
- Hargreaves, A., and Goodson, I. (2006). Educational change over time? The sustainability and non-sustainability of three decades of secondary school change and continuity. *Educational Administration Quarterly*, 42(1), 3–41.
- IEP (Institute of Educational Policy) (2021). *Curriculum for ICT and Informatics in Primary School*. IEP.
- Iosifidis, T. (2017). *Qualitative Research Methods and Epistemology of Social Sciences*. Tziola.
- Jimoyiannis, A. and Komis, V. (2007). Examining teachers' beliefs about ICT in education: implications of a teacher preparation program *Teacher Development: An international Journal of Teachers' professional development*, 11(2), 149–173.
- Jimoyiannis, A., and Komis, B. (2006). Attitudes and perceptions of secondary school teachers regarding the application of ICT in their teaching. In M. Grigoriadou, A. Raptis, S. Vosniadou and X. Kynigos (eds.), *Proceedings of the 4th Panhellenic Conference "ICT in Education"* (pp. 165–176). New Technologies Publications.
- Jimoyiannis, A., Koukis, N., and Tsiotakis, P. (2020). *Shifting to Emergency Remote Teaching Due to the COVID-19 pandemic: Greek teachers' beliefs and experiences*. TECH.EDU 2020, the 2nd International Conference on Technology and Innovation in Learning, Teaching, and Education. December 2.4, 2020 (online)
- Jonassen, D. H., Carr, C., and Yueh, H-P. (1998). Computers as mindtools for engaging learners in critical thinking. *TecTrends*, 43(2), 24–32.
- Kafai, Y. B., Fishman, B. J., Bruckman, A. S., and Rockman, S. (2002). Models of educational computing @ home: new frontiers for research on technology in learning. *Educational Technology Review*, 10(2), 52–68.
- KE.ME.TE. (2021). *Aspects of Tele-education During the Pandemic: Educational Inequalities and Implications for Labour Rights*. KE.ME.TE. <https://shorturl.at/iAP78>
- Kelpanides, M. and Vriniotis, K. P. (2004). *Lifelong Learning: Social conditions and functions, data, and findings*. Ellinika Grammata.
- Komis, V. I. (ed.) (2000). *Information and Communication Technologies in Education*. New Technologies Publications.
- Koutsogiannis, D. (2020). The Greek school in the era of the coronavirus: From the techno-functional to the political approach. In P. Kapola, C. Kouzelis, and O. Konstantinas (Eds), *Imprints in Moments of Risk* (pp. 549–556). Nisos
- Kyriazi, N. (2002). *Sociological Research: A critical review of methods and techniques*. Ellinika Grammata.
- Kyridis, A., Drossos, V., & Tsakiridou, E. (2003). *Who is afraid of new technologies? The views and perceptions of primary school teachers on introducing information communication technology in Greek primary schools*. Typothito.
- Kyridis, A., Drossos, V., and Tsakiridou, E. (2006). Teachers are facing ICT. In the case of Greece. *Journal of Technology and Teacher Education*, 14(1), 75–96.
- Melucci, A. (2002). *Cultures at Play. Differences to Symbiosis*. Gutenberg.
- Mészáros I. (1974). *Marx's Theory of Alienation*. (ed. E. Konstantelou). Rappa.
- Organization for Economic Co-operation and Development. (2019). *OECD Skills Outlook 2019: Thriving in a digital world*. OECD.
- Pelgrum, W. (2001). Obstacles to the integration of ICT in education: Results from a worldwide educational assessment. *Computers & Education*, 37, 163–178.
- Perifanou, M., Economides, A. A., and Tzafilkou, K. (2022). Greek teachers' difficulties & opportunities in emergency distance teaching. *E-Learning and Digital Media*, 19(4), 361-379.

- Pokhrel, S., and Chhetri, R. (2021). A literature review on impact of COVID-19 pandemic on teaching and learning. *Higher Education for the Future*, 8(1), 133–141.
- Preston, C., Cox, M., and Cox, K. (2000). *Teachers as Innovators in Learning: What motivates teachers to use ICT*. Teacher Training Agency.
- Ragneda, M., and Muschert, G. (2013) *The Digital Divide*. Routledge
- Ralli, N. (2021). *Accelerated Tutorial on Social Inequalities*. Efimerida ton Syntakton, 21/4/2021. https://www.efsyn.gr/ellada/ekpaideysi/244183_tahyrrythmo.frontistirio.koinonikon.anisotiton.
- Robins, K., and Webster, F. (1999). *Times of the technoculture; From the information society to the virtual life*. Routledge.
- Rumpagaporn, M., and Darmawan, G. (2007). Students' critical thinking skills in a Thai ICT schools pilot project. *International Education Journal*, 8(2), 125–132.
- Samioti, P. (2021). Emergency Remote Educational Challenges During COVID-19: The Case of Secondary Education Teachers in Greece. In G. Bissessar (Ed.), *Emergency Remote Learning, Teaching, and Leading: Global Perspectives*, (pp. 37–54). Springer. https://doi.org/10.1007/978-3-030-76591-0_3#DOI
- Schleicher, A. (2020). *The Impact of COVID-19 on Education: Insights from Education at a Glance 2020*. OECD Publishing.
- Tsiolis, G. (2014). *Methods and Techniques of Analysis in Qualitative Social Research*. Kritiki.
- UNESCO (2020). *COVID-19 response - Remote learning strategy: Remote learning strategy is a key element in ensuring continued learning*. UNESCO.
- Vosniadou, S. (2006). *Children, Schools, and Computers*. Gutenberg.
- Witte, J. C., and Mannon, S. E. (2010). *The Internet and Social Inequalities*. Routledge.
- YPEPTH (Greek Ministry of Education and Religious Affairs) (1998). *Informatics at School: Its design and work. Design and planning*. Greek Pedagogical Institute.
- Zhao, Y., and Watterston, J. (2021). The changes we need: Education post-COVID-19. *Journal of Educational Change*, 22(1), 3–12.

Author:**Giavrimis Panagiotis, PhD**

Associate Professor, Department of Sociology, University of the Aegean, Greece, Pamfilis 17, 81100 Mytilene-Lesvos, Greece, e-mail: giavrimis@soc.aegean.gr
Izredni profesor, Oddelek za sociologijo, Univerza v Egeju, Grčija, Pamfilis 17, 81100 Mytilene-Lesbos, Grčija, e-pošta: giavrimis@soc.aegean.gr