E-Leadership and Distance Education in Greece during Covid-19 Pandemic

Dimitrios Gkoros
Early Childhood Education Department, University of Ioannina, Arta, Greece
Department of Primary Education, University of Western Macedonia, Florina, Greece

Tharrenos Bratitsis
Early Childhood Education Department, University of Western Macedonia, Florina, Greece

Abstract
The paper attempts to investigate how contributive primary school principals’ e-leadership proved to the work and preparation of teachers for the implementation of the Distance Education during the covid-19 pandemic. By employing quantitative modes of enquiry and specifically a significant number of questionnaires, we concluded that the teachers’ level of education doesn’t affect their opinion towards the degree of the school principals’ contribution to their work and preparation or the implementation of distance education, contrary to their educational experience. Moreover, the majority of teachers who participated in the research consider the presence and involvement of the electronic leader as important.

Keywords
principals’ leadership, e-leadership, distance education, primary school teachers

Introduction
In the dawn of 2020, a new type of contagious infection, known as covid-19 has appeared in Wuhan China. This new coronavirus has rapidly spread across the world and declared as a pandemic by WHO (World Health Organization) (WHO, 2020). Every national government had to take immediately precautional measures to avoid covid-19 spreading in the main population. These radical measures included social distancing, quarantining not only infected people but also people suspected to be infected, travelling restrictions and of course restrictions in education in order to decelerate virus spreading (Bourouiba, 2020; MacKenzie, 2020). Thus, many governments decided that education practices such us schools and universities should switch to distance education (Alcoforado, 2020; Zhang et al., 2020) affecting this way many students (Zhong, 2020). Although, paradoxically, children do not seem to be at risk from this virus, they can be sources of its spread, and this was the main reason for the closure of schools worldwide (Abdalim and Hadfith, 2020).

Of course Greece couldn’t be excluded from this unfortunate situation and in March of 2020 the Greek Government implemented a general lockdown forcing schools to operate remotely. By March 18 many countries had made decisions to close schools affecting 861,737,696 students (UNESCO, 2020b). Besides, Education is the most affected area after the Health sector (Telli, Yamamoto and Altun, 2020). Indeed, as a matter of a fact, as of April 2020, 92% of the students worldwide have been affected while the countries suspended one to one teaching reached 195 in May (UNESCO, 2020b). This sudden need for the implementation of Distance Education left narrow margins for the Greek state to adequately train its teachers on the concept and implementation of Distance Education and in general affected education life in a very short time. Previous research has shown that officials need to prepare for these kind of transitions and communicate guidelines with clarity (Klaiman et al., 2011). To date, Greek teachers have not had any previous experience in pandemics or in distance education and while research indicates that it is extremely critical for the education sector to have prepared plans for ensuring smooth operation of education (Faherty et al., 2019; Olympia et al., 2005) stakeholders such us teachers and the government couldn’t wait for them to be prepared in the last minute. Therefore, the main burden for the smooth transition from one to one teaching to distance, fell upon the shoulders of school principals. At this point it’s crucial to mention that a new type of leadership has emerged in recent years, e-leadership, through which social influence is exercised with the help of technology (Avolio, Kahai and Dodge, 2000). This type of leadership...
is highly connected to distance education and the elucidation of its influence during the implementation of Distance Education in our country is considered a necessity.

**Materials and method**

The aim of this research was to investigate the degree of contribution of the e-leadership of school principals to the work and the preparation of teachers for the implementation of the Distance Education during the Covid 19 pandemic. Since our original research covers a much larger scope and could not be presented in a single paper, we chose this paper to present the part of the research that corresponds to the aforementioned goal.

In order to investigate the degree of contribution of e-leadership of school principals to the project and the preparation of teachers for the implementation of Distance Education, we chose the quantitative research approach to study a large number of cases and to statistically analyse the data. The quantitative research method is considered appropriate when the existence of “real” data is necessary to answer the research questions, when information is sought on the views, attitudes, theories, beliefs or preferences of the respondents, when it is possible to connect the variables with research hypotheses or questions before data collection and finally when the question or problem is known, clear and identified (Hammarberg, et al., 2016). In addition, the quantitative method can discover the different views, the relationship between the attitude of the respondents and their characteristics (demographic and/or social) and finally the percentage of the population that supports the assisted perception as well as comparisons between the results of other surveys (Beeson et al., 2011; Freeman et al., 2009; Kovacs et al., 2012).

The above are met in this research and therefore the quantitative method was chosen as the most appropriate to investigate trends and examine the ways in which the respective variables are related (Creswell, 2016).

We used a non-probability sample which is a way for a researcher to choose participants that are available, convenient and represent a specific characteristic that is to be studied. In this study, the selection of the sample from all the teachers serving in primary education throughout the country with convenient sampling was considered as reliable because convenience sampling is not a way for a researcher to be certain of the representativeness of his sample, however the sample itself can provide some useful information in order for the purpose and question of the research to be met (Creswell, 2016). This means that only those who were willing and available participated in the research. Limitations occur from our approach that have to do with the generalizability of our results in the whole population. Nevertheless, certain tendencies can be inferred, as mentioned before, in order to understand this innovative leadership type and its contribution to the smooth operation of distance learning. The sample of the research consists of 104 primary school teachers. The survey used an electronic questionnaire sent electronically to primary education teachers in the country. The sampling of our research was carried out using a questionnaire, which maintains the anonymity of the participants and gives them the opportunity to complete it in a short time, thus favouring the greatest possible degree of participation. Web-based questionnaires can accumulate a large number of data in a short period of time. However as Sills and Song (2002) illustrated, they produce a number of methodological issues such as the limited number of questionnaire returns. Nevertheless, web-based surveys allow an effective, fast and economical overview of the entire population and thus bypass the problem of conclusion (Creswell, 2016). It is also crucial to mention that a pilot test of the questionnaire was preceded the main survey in order to have some feedback about our tool and of course the pilot test participants were excluded from the main survey. Other than that, we made sure that specific steps and procedures needed to be followed were thoroughly described to the preface of our questionnaire in order to prevent errors during the completion.

The original questionnaire consisted of four parts but in this study the results of the first and the fourth part are presented. The first part included questions related to demographic characteristics, the extent that individual characteristics are considered determinants of shaping the attitudes and perception of individuals. Thus, there were questions concerning gender, employment relationship, years of service, educational level and familiarity with ICT. The second part concerned four groups of questions that had to do: a) with the readiness and familiarity of the respondents with distance education and its conceptual content, b) with the familiarity of the respondents with specific terms of distance education on the one hand and with their ability to distinguish and give a brief definition of them on the other, c) with their ability to be conversant with the usefulness and function of various tools of distance education and finally d) with their readiness to integrate the above tools into the teaching practice. These were mostly closed-ended questions on a five-point Likert scale with values from 1 (not at all) to 5 (too much) and some open-ended questions in the second set of questions. Thus, in the second group of questions, after answering about their degree of familiarity with the various terms and concepts of distance education (Likert scale), respondents were requested to give a brief definition of each concept in order for the researchers to determine whether the concept the participants had in mind while answering about their degree of familiarity, it was indeed the right one. The third part had to do with the practices used by teachers in the implementation of distance education and the tools they used. These were mostly closed-ended questions on a five-point Likert scale with values from 1 (not at all) to 5 (too much) and some open-ended questions. The open-ended questions had to do with a short answer of the respondents regarding the involvement of the parents in the process of distance education. The fourth and last part of the questionnaire, which was the focus of the researchers’ interest in this study, concerned the degree of e-leadership input possibly exercised by school principals to the work and the preparation of teachers in the implementation of
distance education. This part consisted of closed-ended questions on a five-point Likert scale with values from 1 (not at all) to 5 (too much). The questionnaire closed with an open-ended question where the respondents were optionally requested to add anything they considered relevant and necessary about the fourth part of the questionnaire.

Theory

Distance education

Starting with a brief description of distance education one could claim that it is a worldwide implemented educational method, thus providing learning opportunities to people who cannot access the traditional form of education within a classroom (Holmberg, 2002). This “innovative” form of education according to Holmberg (1977) has to do with all levels of education and provides maximum independence to students, as it takes place without the direct supervision of teachers but takes place in an organized learning environment. The existence of a body that designs, organizes and implements the specific learning context, is considered necessary. In 1988, Perraton (1988: 34) issued a definition stating that distance learning is an educational process in which a significant part of teaching is done by someone who is either temporally or spatially distant from the student.

E-learning and distance education in general are divided according to their tools into synchronous, asynchronous and blended (Abdel Hamid, 2019; Al-Najar, 2013; Anastasiades, 2012; Bonk and Graham, 2006; Moore and Kearsley, 2012).

Synchronous distance education is referred to online learning techniques in virtual classrooms, where the student and teacher exist and communicate simultaneously as they are online at the same time. Thus, participants interact through audio and video in real time regardless of geographical location. Key features of synchronous distance education are the simultaneous presence of the participants, the absence of spatial restrictions and the real-time communication. These features provide flexibility and adequacy of student reaction and interaction time. Other features of synchronous distance education are the ability to share the table (whiteboard), interactive communication (bidirectional image and sound) and application sharing. Immediate feedback is provided by tools such as discussion forums, chat forums, video conferencing and audio conferencing.

Asynchronous distance education is referred to unrestricted classes, either temporally or spatial, as the teacher provides the educational content, makes it available for students to access it, participate and ask questions in their own time.

In the relevant literature review, the definitions that one encounters for blended learning are plenty. Masie (2002) defines it as the use of two or more separate teaching methods, which requires various combinations such as mixing traditional with e-learning education, e-learning education with access to teaching staff or mixing managerial training with e-learning activities.

In conclusion, we could argue that under pedagogical conditions, the model of blended learning can combine the positive elements of both synchronous and asynchronous distance education with traditional face-to-face teaching (Anastasiades, 2012), thus contributing to realizing Simonson’s vision as analysed in his theory of equivalence (Simonson et al., 2012). Blended learning is a student centred approach, according to Schank (2005), with more sensitivity to the needs of students and the educational reality in which education takes place. Researchers such as Dziuban, Hartman and Moskal (2004) believe that for the best possible success of this model, the teaching approach needs to be well organized and include a teaching model based on an educational theory, in various mechanisms both formative and final evaluation as well as to have the appropriate logistical infrastructure.

E-leadership

The term “Leadership” is considered a controversial term that has given rise to literally hundreds of definitions as there are almost as many different definitions of leadership as there are people who have tried to define it (Bass and Stogdill, 1990; MacBeath, 2003). Thus, various definitions of leadership have been proposed, but without clarifying the characteristic that makes leaders different from the rest (Cuban, 1988). Pashiardis (2014: 209) states that “leadership is the web of those behaviors that you use with others when you try to influence their own behavior”. According to Koontz and O’Donnell (1986: 91) leadership is seen as “the influence or art or process of influencing individuals so that they work willingly to achieve team goals”. Kouzes and Posner (2006: 30) defined leadership as “the art of mobilizing others to strive for common aspirations”. Therefore, based on these definitions, the main mission of the leader is related to the orientation of the group behaviour through the influence towards the achievement of a common goal.

The concept of leadership could not have failed to infiltrate the education sector as well, playing a catalytic role. Bush and Glover (2003: 8) write that “leadership is the process of influence that leads to the fulfillment of desired goals. Successful principals develop a vision for their school based on their personal and professional values. They clearly articulate this vision at every opportunity and influence their staff and other interested members to share the vision. The philosophy, structures and activities of the school contribute to the fulfillment of this common vision”. Finally, as several researchers have reported, including Cuban (1988, in Bush and Glover, 2003), leadership is related to the notion of influencing others and, in particular, to the ability to activate others to achieve certain goals, a process which proposes two elements: taking initiatives and the concept of risk. According to Conolly, James and Fertig (2019), first of all, the term “educational leadership” is used to describe those who have senior positions in an organizational hierarchy in an educational institution. This usage of the term is omnipresent. Both in England and in Greece, for example, the position of school principal...
is now a “school leadership position” with the person holding that position referred to as the official “school leader”. The reason behind this dominated use of the term is the assertion that for schools to improve, they need to change and bringing about change is a leadership act/practice (Bush, 2008; Dimmock, 1999; Hallinger, 2003 as cited in Conolly et al., 2019). Secondly, the term “leadership” is used to describe the practice of leading others (Raelin, 2016), which is a central perspective to Cuban’s (1988) definition of educational leadership that we mentioned earlier, as an influence for the achievement of desired goals.

Educational leadership is referring to people that administrate, manage or lead educational organizations. The European Union characterizes an educational leader as a person that is responsible for the management of a school. Depending on the circumstances, school leaders are asked to organize the programme, implement the curriculum, any extracurricular activities, and evaluate teachers. In many educational systems there is a shift from a more administrative and bureaucratic mode of operation to a way that will involve more teachers and other staff in order to achieve the goals of the school. This change in the role of leader occurred in different ways in each country. However, the following distinction is made: in the middle of the 20th century, school leaders were mainly teachers who took on administrative roles. In the 1990s, they gradually evolved into managers who dealt with school outcomes. In the 2000s, the role of the leader shifted from the leadership of schools with a regime of more freedom and high accountability to a system characterized by cooperation and responsibility (Pont, 2020: 155–156). The school activities implemented by educational leadership are the following: pedagogical, administrative, human factor resources, cooperation with the external environment (Saitis and Saiti, 2018: 18). A school leader is an independent part of a collective body. Educational leadership often implies ongoing guidance and empowerment, permeability and impermeability (Netolicky, 2020: 2). Since an educational leader plans his work and is responsible for the organization and operation of the school, as well as for supervising teachers’ performance of their duties, his work is considered by some scholars to be identical with that of a manager (Saitis and Saiti, 2018: 5). Thus, researchers argue that the effective operation of school units presupposes the knowledge and application of principles and methods of modern management (Brinia, 2012: 92). However, according to others, these individuals should function more as leaders and less as managers (Papalois, 2012: 180).

The relationship between the concepts of leadership, management and administration is a confusing issue. Since educational management and educational leadership are foundational concepts in the organization of schools one should suppose that there is clarity in the way they are described and used by academics but this is not true (Heck & Hallinger, 2005 as cited in Conolly et al., 2019). The question of the distinction of these terms has been of great concern to researchers, with Mullins (1994: 247) stating that “before concepts were synonymous; however, now some differences have been identified in the behaviour of the leader or the director regarding other parts of the organization”. Pashiardis (2014) made an interesting distinction between the concepts of management, direction and leadership, defining management as a process of day-to-day operations, presenting it similarly to Cuban’s (1988) view upon the matter, who associated it with bureaucracy. In fact, he has created the term “administrivia” (Pashiardis, 2001) which has to do with the daily, processing activities of managers. The term “management”, according to him, refers to the day-to-day management of the organization while at the same time the leader determines the course of the organization within a time horizon of a few months to one or two years. The term “leadership” works more like an “umbrella” term under which both the term management and direction are placed. The concept of leadership includes the vision of the leader and the direction that the school goes in the long run, thus providing strategic orientation to the educational organization. (Pashiardis, 2014). There has to be an education centred approach in defining educational leadership, as the corresponding purposes or goals will provide the crucial sense of directions to underpin school management. Unless this link between purpose and management is clear and close, there is a danger of ‘managerialism’, “a stress on procedures at the expense of educational purpose and values” (Bush, 1999: 240). In most schools, aims are decided by the schools’ natural leader, the principal, however these aims are often influenced from the expectations of government expressed through legislations and formal policy statements (Bush, 2007).

As a concept that has significant normative and political capacities as well as consequences, leadership is discursively overworked and theoretically underdone in policy and in much of the literature (Gunter, 2004). According to Blackmore (2013), this is evident in the multiple usage of adjectives describing leadership, such as “instructional”, “moral”, “entrepreneurial”, “transactional”, “transformational”, “e-Leadership” etc. Regarding the interest of this study, the authors focused in the innovative term of “e-Leadership”. During this global pandemic, as mentioned earlier, governments decided to switch education to distance learning and therefore a need for electronic leadership expressed by school principals emerged. Of note, e-leadership and the use of databases for decision making had already become important tools for education systems. The rapid development of Information and Communication Technologies (ICT) has led to this new type of leadership through which social influence is exercised, with the help of technology, in order to change attitudes, emotions and behaviours in individuals, groups or organizations and be led by the leader to achieve a specific goal (Avolio, Kahai and Dodge, 2000). E-Leadership is guided by the conceptual definition of “leadership” and is built on its basic principles. This leadership refers to the ability of the individual to influence the behaviour of others in a digital technology environment in order to achieve the desired goals as formulated by the organization (Blau and Presser, 2013). The term e-leadership should not be equated with technological means and
tools. However, it refers to the exercise of leadership through the use of digital technology as an adjunct to its exercise. E-leadership is exercised by subjects with leadership skills that have a significant impact on the behaviour of others in the digital space (Chamakiotis and Panteli, 2010).

The application of e-leadership in modern educational systems upgrades the operation of the school as through the management of databases important decisions are made and the pedagogical data are modernized (Gurr, 2004). The use of technological means forms communication channels between organizations which in turn lead to the sharing of knowledge and educational achievements between them (Younie and Leask, 2013).

This innovative and vague term of e-leadership broadly focuses on the ability of leaders to converse with digital team users and shape the conditions for their interpersonal communication development within technological environments (Gurr, 2004). Thus, in education, the development of such digital environments and their involvement in educational leadership are the subject of systematic study. A typical case of implementation of this new form of leadership is the venture of distance education. This education is a form of interaction between individuals in digital environments with the ultimate goal of learning. Therefore, educational leadership takes on new terms through this form of education as leaders are called upon to manage a particular audience within a technological environment.

The development of online education, such as "virtual universities" may be rapid as well as cross-border education programmes, mainly in higher education, however the literature on the concept of e-leadership is limited (Gordon, 2014). This bibliographic deficiency identified, can be attributed to two factors. Firstly, the study of types and theories of leadership does not harmonize with the purpose and context of distance education and secondly, researchers do not recognize in distanced leadership practice some "uniqueness" or some distinctive elements compared to other types of leadership types (Kalogiannis, 2014).

Nevertheless, there is an insurmountable need for the leader to be informed about the new technological achievements in order to take advantage of the modern possibilities of digital technology. The leader, therefore, assists teachers in taking initiatives and adopting innovative and alternative teaching methods. As a leader, it is essential to have the necessary and specific knowledge to implement innovative programmes and to select appropriate strategies through an appropriate organizational framework in order to implement appropriate interventions and make the right decisions (Normore, 2004). It is common knowledge that teamwork is fundamental to problem solving and the role of a leader is catalytic in promoting "active collaboration" between teachers and students while promoting and implementing innovations in distance education (Dede, 2010).

In conclusion, e-leadership is characterized by distributed leadership, so it is implemented through the active action of all the responsible members of the organization among whom the responsibilities are shared, contributing to its guidance (Pulley & Sessa, 2001, as cited in Gurr, 2004). In addition to distributed leadership, e-leadership has a lot in common with transformational leadership. In the school context the leader influences the members of the digital environment of distance education by communicating to them the vision he has formed, by taking the role of coordinator for the procedures to be followed, but also by inspiring confidence in them to take responsibility (Walvoord et al., 2008). An e-leader must fully support the teachers and through transformative actions to enhance their creativity and intellectual vigilance in order to lay foundations for the utilization of the technological means (Frambah & Schillevaert, 2002; Schillevaert, Aheame, Frambah, & Moenaert, 2005, as cited in Afshari et al., 2009).

In terms of the differences between e-leadership and traditional forms of leadership, the main discrepancy concerns the fact that the former is practiced in digital environments having as a mediating tool between the members of an organization the technological means (Bansal, 2008). In other words, the differences between the two forms of leadership stem from the physical presence of the leader. However, the non-physical presence of the leader offers more time and circumstances of communication and contact between the leader and the members, exceeding the limits of a face to face contact (Avolio and Kahai, 2003). Another important difference between the two types of leadership lies in the advantages of the electronic form over the traditional one. Thus, e-leadership has the significant advantage of creating extensive networks of collaboration between individuals located in different geographical locations (DasGupta, 2011). On the other hand, there are discrepancies related to the disadvantages of the two types of leadership. An important disadvantage of e-leadership is the selfish behaviour of principals who seek to satisfy individual interests by exerting a strong influence on the behaviour of members due to remote action (Avolio and Kahai, 2003). Another disadvantage is the inadequacy to inspire commitment in the members of the school community to dedicate themselves to their work. This is evidenced by the research effort of Bansal (2008) in a sample of 200 people which showed that in the traditional forms of leadership, dedication, efficiency, mobilization and orderliness of employees was stronger than the electronic form. Inferentially, the literature review of Avolio, Sosik, Kahai and Baker (2014) reveals that technology has not led to a radical reform of the way leadership is exercised despite the differences between the two forms. According to Mishra, Henriksen, Boltz and Richardson (2016), this is due to the inadequacy to predict the results of using technological means in organizations such as education systems.

**Results**

**Descriptive analysis**

E-leadership, as formulated in the theoretical part of our work, refers to the ability of the individual to influence the behaviour of others in a digital technology environment in order to achieve the desired goals as formulated by the organization (Blau and Presser, 2013). Considering the
covid 19 pandemic crisis and the application of distance education in educational structures, this term began to be used more often. Figure 1 shows how familiar teachers are with this term. Specifically, almost 28% of the participants (29 teachers) stated that they do not know “at all” the meaning and therefore the work of e-leadership, while 26.9% of the respondents (28 people) gave the answers that they know this term “little” and “moderately”, respectively. Following with 11.5% (12 people), there are the answers of the teachers that know the meaning of e-leadership “much”, and finally at around 7% (7 people) responded that they know it “very much”.

In the context of distance education, teachers were forced to adapt to new areas of teaching, which led to a number of different activities. Specifically, the participants were asked to answer whether they were given the opportunity by their school principal to take new initiatives to cope with their new role dictated by the implementation of distance education. As illustrated in the results of the research, almost 9% (9 people) of the participants answered that they were not given any opportunity for new initiatives, 14.4% (15 people) responded that they were given few opportunities to take initiatives, 24% (25 people) reported that they were given moderate opportunities for initiatives, 28.8% (30 people) claimed that they were given many opportunities and finally 24% (25 people) answered that they were given plenty opportunities to take initiatives during the implementation of distance education.

Furthermore, teachers where asked whether they received the appropriate support from their principal during distance education. The responses that teachers gave upon the question of how supportive their school principal was for the smooth running of the Distance Education show clearly that the fewest participants gave a negative answer with 7.7% (8 people) of the participants claiming that their manager was not “at all” supportive and on the contrary most participants, almost 32% (33 people), responded positively that the principal was “much” and “very much” supportive, respectively. In between, the results obtained from the research show that 10.6% (11 people) answered that their principal was “a little” supportive and finally 18.3% (19 people) responded that the school principal was in a “moderate” degree supportive.

The diagram of Figure 2 shows the answers given by the teachers regarding the question of whether e-leadership, as expressed by their principal, may have influenced their behaviour during the implementation of Distance Education. It is observed that 13.5% of the respondents

![Figure 1](image1.png)  
**Figure 1.** Percentage of individuals depending on how familiar they are with the concept of e-leadership.

![Figure 2](image2.png)  
**Figure 2.** Percentage of individuals regarding the impact of e-leadership on their behaviour during distance learning.
consider that they were not influenced “at all” by the e-leadership of their principal, 19.2% of the respondents claim that the e-leadership of the principal affected them relatively “little”, and 23.1% of the respondents report that it affected them to a “moderate” degree. Finally, 24% of the respondents consider that it affected them “much” and a percentage of 20.2% answered that it affected them “very much”.

E-leadership and distance education are two concepts that interact with each other and with proper operation they can greatly facilitate the work of teachers. The teachers participating in the survey were asked to answer whether e-leadership, as it was expressed, ultimately contributed to a better implementation of Distance Education. Thus, as illustrated in Figure 3, it is observed that of the 104 participants who completed the questionnaire, only 14 people answered negatively that e-leadership did not contribute “at all” in a better implementation of Distance Education and 16.3% (17 people) answered that e-leadership contributed to a lesser extent, that is, “a little”. Also, 24% (25 people) and 26.9% (28 people) of the participants answered that e-leadership contributed “moderately” and “much”, respectively, and finally 19.2% (20 people) reported that it contributed “very much”.

For the implementation of distance education, new techniques and new educational tools were used, which resulted in changing the entire educational process but also the relations between teachers and students. What follows is the results obtained from the teachers who participated in the research and were asked to answer whether the actions of the principals were satisfactory for the smooth relationship between school and student during the implementation of Distance Education. Specifically, the minority of the participants (7.7%) believe that the actions of their principal were “not at all” satisfactory. This is followed by 12.5% of those who believe that the actions were “a little” satisfactory. Finally, 18.3%, 27.9% and 33.7%, of the participants believe that the actions of their principals were “moderately” satisfactory, “much” and “very much” satisfactory, respectively.

Another relationship that changed during the implementation of distance education was the one between school and parents. Thus, teachers were asked whether the actions of the principals were satisfactory for the smooth restoration of the relationship between the school and the parents of the students. More specifically, the minority of the participants (6.7%) believe that these actions by the school principals were “not at all” satisfactory. Moreover, 15.4% and 16.3% believe that their actions were “little” and “moderately” satisfactory, respectively. Last but not least, 32.7% and 29.8% of the participants believe that actions of their principals for a normal relationship between school and parents were “much” and “very much” satisfactory, respectively. These results were probably derived from the actions taken so that all parents and students have continuous and uninterrupted communication throughout the distance education. In Greece, face-to-face pedagogical meetings with parents are scheduled once a month while there is also the possibility of unscheduled meetings or telephone communications with the families. During distance learning,
principals were responsible for the smooth transition of this relationship to an online one. In addition, due to the young age of many students, the parents were the ones who had to organize the students’ connection to the online classroom. So, a series of e-mail accounts and student profiles had to be created through the national school computer system and distributed to each student and family and this whole procedure could only be carried out by the school principal.

Comparative analysis of variables
For the purposes of this analysis, the abovementioned group of questions was treated as a single one because it is of scientific interest to highlight the concept and role of e-leadership of principals as a whole in the project and the preparation of teachers in the utilization of Distance Education. Based on this approach, this group of answers was essentially considered as a conceptual question that answers our key research question “What is the degree of contribution of the e-leadership of school principals to the work and preparation of teachers for the implementation of Distance Education?”

More specifically, the “average” answer of each participant in the third group of questions was calculated and the results are presented schematically in Figure 4 where it is illustrated that the majority of teachers consider that their principal played a “much” important role in the utilization of Distance Education.

Analysing the answers in our group of questions in order to identify possible factors related to these answers, it was chosen to check the possible dependence of the studies and years of service (educational experience) of the teachers in relation to the “average” answer given by them to the abovementioned group of questions. Essentially, in the following statistical procedure, it is checked, whether or not, there is a statistically significant correlation between e-leadership and the level of studies and years of service.

More specifically, no statistically significant correlation was found (Spearman: $\rho = -0.01$) of the level of studies with the answers given, while the $X^2$ test shows statistically significant independence at the level of statistical significance of 95% ($p$-value = 0.9 for significance level 0.05) (Figure 5).
Regarding the possible dependence of the years of service (educational experience) of the teachers in relation to the “average” answer given by them to the group of questions, a statistically significant correlation was calculated (Spearman: $\rho = 0.27$) with the answers given. Furthermore, $X^2$ test shows a statistically significant dependence at 95% statistical significance level ($p$-value = 0.048 for significance level 0.05). Consequently, the result of this analysis proves that the category of educational experience show a statistically significant relation to the contribution of principals’ e-leadership to the work and the preparation of teachers for the implementation of the Distance Education (Figure 6).

Discussion

At the beginning of the covid-19 pandemic, the United Nations recorded 165 countries conducting distance learning at all levels of education (UNESCO, 2020a). In fact, Anderson (2020) described the situation as the largest global experiment in the history of educational technology. With 1.5 billion out-of-school students and hundreds of millions trying to learn in distance, he states that the experiment will reshape both the schools themselves and the general idea of what education and learning will look like in the 21st century.

In the context of the above dynamics, subsequently, the authors tried to crystallize the views of both the Greek teachers and the global research community on distance education and the role that principals’ e-leadership played in its implementation.

Regarding the main research question, the conclusions of this study appear to be of high importance. In particular, our results showed that the teachers’ level of education does not affect their view of the degree of school principals’ e-leadership contribution to the work and the preparation of teachers for the implementation of the Distance Education, in contrast to their educational experience. Of course, it should be noted that based on the results, teachers seem to show a lack of knowledge regarding the concept of e-leadership, an element that confirms the characterization of the term according to Gurr (2004) as innovative and vague, but also Gordons’ (2014) view about the lack of

![Figure 6. 3d graph of the years of educational experience (0–5 years: “1”, 6–15 years: “2”, 16–25 years: “3” and 25+ years: “4”) and the answers to the group of questions (Not at all: “1”, A little: “2”, Moderate: “3”, Much: “4”, Very much: “5”).](image-url)
bibliographic references to the term despite the growing debate about digital learning environments. It is also being proved that the majority of teachers participating in the survey has the tendency to consider electronic leaders being proved that the majority of teachers participating in debate about digital learning environments. It is also bibliographic references to the term despite the growing

10

Management in Education 0(0)

able to diffuse responsibilities in a balanced way, to monitor teachers’ and students’ activity levels and learning outcomes. (Blau and Presser, 2013). This condition is consistent with the view that e-leadership is about a form of distributed leadership where responsibilities and initiatives within digital environments are bottom-up (Mehra et al., 2006; Blau and Presser, 2013). In addition, recent research has highlighted the role and importance of educational leadership in the organization of online courses and the dependence of effective distance education on the quality of e-learning and in general the educational leadership of the school management. Both the rapid transition from traditional education to distance education and the provision of guidance to teachers on which synchronous and asynchronous learning platforms to use and how to organize their curriculum in this new educational reality were the result of successful e-leadership of principals (Hosszu and Rughinis, 2020). In this context, our research shows that teachers considered the e-leadership of principals to be an important resource for the better implementation of distance education. After all, according to Dede (2010) the role of principals is crucial in the implementation of innovations in education. Principals and their leadership play a vital role in defining and implementing policies that are appropriate during Distance Education. Our study found that the majority of teachers were positively impressed by the support of school leaders in this new challenge of implementing distance education, underpinning the view of Normore (2004) that leaders need to have the expertise to implement innovative programmes and a wide range of strategies to better organize and shape their choices. Thus, the support of principals related to the motivation of teachers and their readiness, with the synchronization and utilization of the schools’ electronic equipment as well as its upgrade, is extremely important for the learning to take place more effectively (Whitaker et al., 2013). Last but not least, considering the poor electronic equipment of Greek public schools but also the ongoing, for the last decade, national economic crisis that people in general have been struggling with, its fair enough to say that the urgent need for transition from face to face learning, to online learning, with the government deadline of few days, did not discourage teachers or principals. On the contrary, the readiness of both was admirable.

Reflecting on our own work as described in this article, it is our firm belief that it represents an emerging field of research that is worthy of further exploration. To this end, we would like to make some suggestions for future research on this field and urge other researchers to seize the opportunity and take advantage of the relevant data coming from the latest ongoing global situation’s impact on educational practices. Further studies could explore new possible leadership practices that can be incorporated into the school leaders’ quivers, in order for the latter to be able to respond successfully to future emergency situations that require implementation of distance learning. In addition, new research studies could shed some light into the importance of leadership training and the possible ways of keeping the school leaders up to date with suggested training courses that will enable them to meet the leadership expectations; thus produce reliable and generalizable outcomes that can serve as a springboard for educational policy-making. Another interesting element, that could be further explored, is the role that school leaders play in the inclusion of students with disabilities in distance education. Finally, e-leadership, being part of a multi-level system of leadership styles that can be utilized, could also be explored in the light of the holistic leadership model proposed by Pashiaridis & Brauckmann (2008, as cited in Pashiaridis, 2014).

Declination of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

ORCID ID

Dimitrios Gkoros https://orcid.org/0000-0001-8476-9287
Tharrenos Bratitisis https://orcid.org/0000-0003-4257-2755

References

Abdulamir AS and Hadifidh RR (2020) The possible immunological pathways for the variable immunopathogenesis of COVID-19 infections among healthy adults, elderly and children. *Electronic Journal of General Medicine* 17(4): em202.
Afshari M, Bakar AK, Luan SW, et al. (2009) Factors affecting teachers’ use of information and communication technology. *International Journal of Instruction* 2(1): 77–104.
Al-Najjar M (2013) Strategies for professional web development from web 1.0 to Web 3.0. Academy for publishing and scientific services.
Alcoforado F (2020) The world after coronavirus. Retrieved from https://www.academia.edu/42549068/THE_WORLD_AFTER_CORONAVIRUS.
Aljaser AM (2019) The effectiveness of e-learning environment in developing academic achievement and the attitude to learn English among primary students. *Turkish Online Journal of Distance Education* 20(2): 176–194.
Anastasiades P (2012) Design of a blended learning environment for the training of Greek teachers: Results of the survey on educational needs. In: Anastasiades P (ed) *Blended Learning Environments for Adults: Evaluations and Frameworks*. Hershey, PA: Information Science Reference, pp.230–256.
Anderson J (2020) The coronavirus pandemic is reshaping education. Quartz. Retrieved from https://qz.com/1826369/how-coronavirus-is-changing-education/.
Avalio BJ, Kahai S and Dodge GE (2000) E-leadership: implications for theory, research, and practice. *Leadership Quarterly* 11(4): 615–668.
Avalio BJ and Kahai SS (2003) Adding the “E” to E-leadership: How it may impact your leadership. *Organizational Dynamics* 31(4): 325–338.
DasGupta P (2011) Literature review: E-leadership. The Leadership Quarterly 25(1): 105–131.

Bansal M (2008) Traditional leadership vis-à-vis e-leadership. A study of BPO sector. Delhi Business Review 9(2): 79–87.

Bass BM and Stogdill RM (1990) Bass and Stogdill’s Handbook of Leadership, 3rd Edition New York, London: Free Press/ Collier Macmillan.

Beeson D, Jennings P and Kramer W (2011) Offspring searching for their sperm donors: How family types shape the process. Human Reproduction 26: 2415–2424.

Blackmore J (2013) A feminist critical perspective on educational leadership. International Journal of Leadership on Education 16(2): 139–154. doi: https://www.tandfonline.com/action/showCIFormats?doi=10.1080/13603124.2012.754057.

Blau I and Presser O (2013) E-Leadership of school principals: Increasing school effectiveness by a school data management system. British Journal of Educational Technology 44(6): 1000–1011.

Bonk CJ and Graham CR (Eds.) (2006) Handbook of Blended Learning: Global Perspectives. Local Designs. San Francisco, CA: Pfeiffer Publishing.

Bourouiba L (2020) Turbulent gas clouds and respiratory pathogen emissions: Potential implications for reducing transmission of COVID-19. JAMA 323(18): 1837–1838.

Brinia B (2012) The implementation of Participatory Management in the school unit: Key to success for the Greek educational system. In: Karaktasini D and Papadamiantaki G (eds) Contemporary Issues of Educational Policy - In Search of the New School. Thessaloniki: Focus, pp. 89–110.

Bush T (1999) Crisis or crossroads? The discipline of educational management in the late 1990s. Educational Management and Administration 27: 239–252.

Bush T (2007) Educational leadership and management: Theory, policy, and practice. South African Journal of Education 27(3): 391–406.

Bush T and Glover D (2003) School leadership: Concepts & evidence. National College for School Leadership, Full report, 1–42. Retrieved from https://dera.ioe.ac.uk/5119/14/dok217-eng-School_Leadership_Concepts_and_Evidence_Redacted.pdf.

Chamakiotis P and Panteli N (2010) E-Leadership styles for global virtual teams. In: Yoong P (ed) Leadership in the Digital Enterprise: Issues and Challenges. Hershey, Pennsylvania: IGI Global, pp. 143–161.

Conolly J, James C and Fertig M (2019) The difference between educational management and educational leadership and the importance of educational responsibility. Educational Management, Administration & Leadership 46(4): 504–519.

Creswell JW (2016) Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research. Saddle River, NJ: Prentice Hall.

Cuban L (1988) The Managerial Imperative and the Practice of Leadership in Schools. New York: State University of New York Press.

DasGupta P (2011) Literature review: E-leadership. Emerging Leadership Journeys 4: 1–36.

Dede C (2010) Comparing frameworks for “21st century skills”. In: Bellanca J and Brandt R (eds) 21st Century Skills: Rethinking How Students Learn. Bloomington, IN: Solution Tree Press, pp. 51–75.

Dziuban C, Hartman J and Moskal P (2004) Blended learning. ECAR Research Bulletin 7(1): 2–12.

Faherty LJ, Schwartz HL, Ahmed F, et al. (2019) School and preparedness officials’ perspectives on social distancing practices to reduce influenza transmission during a pandemic: Considerations to guide future work. Preventive Medicine Reports 14: 100871.

Freeman T, Jadva V, Kramer W, et al. (2009) Gamete donation: Parents’ experiences of searching for their child’s donor siblings or donor. Human Reproduction 24: 505–516.

Gordon T (2014) Leader Effectiveness Training: L.E.T. (revised). New York: Perigee.

Gunter H (2004) Labels and labelling in the field of educational leadership. Discourse: Studies in the Cultural Politics of Education 25: 21–41.

Gurr D (2004) ICT, leadership in education and E-leadership. Discourse: Studies in The Cultural Politics of Education 25(1): 113–124.

Hammarberg K, Kirkman M and de Lacey S (2016) Qualitative research methods: When to use them and how to judge them. Human Reproduction 31(3): 498–501.

Holmberg B (1977) Distance Education: A Survey and Bibliography. London: Kogan Page.

Holmberg B (2002) Distance Learning: Theory and Practice, (R. Pagida, Translation) In Greek.

Hosszu A and Rughinis C (2020) Digital divides in education. An analysis of the Romanian public discourse on distance and online education during the COVID-19 pandemic. Sociologie Românească 18(2): 11–39.

Kalogiannis D (2014) School Leadership and its Professional Development in the Modern Environment - International Developments, Provided Programs and Quality Elements. Athens: Grigoris. (In Greek).

Klaiman T, Kraemer JD and Stoto MA (2011) Variability in school closure decisions in response to 2009 H1N1: A qualitative systems improvement analysis. BMC Public Health 11(1): 1–10.

Koontz H and O’Donnell C (1986) Management: A Systems and Contingency Analysis of Managerial Functions. New York: McGraw-Hill Book Company.

Kouzes JM and Posner BZ (2006) The Leadership Challenge. 3rd Edition San Francisco: Jossey-Bass.

Kovačs GT, Morgan G, Levine M, et al. (2012) The Australian community overwhelmingly approves IVF to treat subfertility, with increasing support over three decades. Aust N Z J Obstetr Gynaecol 52: 302–304.

MacBeath J (2003) The alphabet soup of leadership. Leadership for Learning, Inform, 2. The Cambridge Network. Retrieved from https://www.educ.cam.ac.uk/networks/ll/about/inform/PDFs/InForm_2.pdf.

MacKenzie D (2020) COVID-19 goes global. New Scientist 245(3271): 7.

Masje E (2002) Blended learning: The magic is in the mix. In: Rossett A (ed) The ASTD e-Learning Handbook. New York: McGraw-Hill, pp. 58–63.

Mehra A, Smith BR, Dixon AL, et al (2006) Distributed leadership in teams: The network of leadership perceptions and team performance. The Leadership Quarterly 17(3): 232–245.

Mishra P, Henriksen D, Boltz OL, et al (2016) E-Leadership and Teacher Development Using ICT. In: Huang R, Kinsukh and Price JK (eds) ICT in Education in Global Context, Lecture Notes in Educational Technology. New York: Springer, pp. 249–266.

Moore MG and Kearsley G (2012) Distance Education: A Systems View of Online Learning. Belmont, CA: Wadsworth.

Mullins LJC (1994) Management and Organizational Behavior. London: Pitmans Publishing.

Netolicky DM (2020) School leadership during a pandemic: Navigating tensions. Journal of Professional Capital and Community 5(3/4): 391–395.
Normore A (2004) Lester B. Pearson elementary school: First year on a journey with the change process. *Journal of Cases in Educational Leadership* 7(35): 35–44.

Olympia RP, Wan E and Avner JR (2005) The preparedness of schools to respond to emergencies in children: A national survey of school nurses. *Pediatrics* 116(6): e738–e745.

Papaloi E (2012) Basic issues of management and leadership of educational units-leadership practices, student performance and efficiency. In: Karakatsani D and Papadiamantaki G (eds) *Contemporary Issues of Educational Policy- In Search of the New School*. Thessaloniki: Focus, pp. 167–182. (In Greek).

Pashiardis P (Ed.) (2001) *International Perspectives on Educational Leadership*. Hong-Kong: Hong-Kong University, Center for Educational Leadership.

Pashiardis P (2014) *Educational Leadership. From the Period of Favorable Indifference to the Modern Era*. Athens: Metaixmio. (In Greek).

Perraton H (1988) A theory for distance education. In: Stewart D, Keegan D and Holmberg B (eds) *Distance Education: International Perspectives*. New York: Routledge, pp. 34–45.

Pont B (2020) A literature review of school leadership policy reforms. *European Journal of Education* 55(2): 154–168.

Raelin JA (ed.) (2016). *Leadership-as-practice: Theory and application*. Routledge/Taylor & Francis Group.

Saitis C and Saiti A (2018) *Initiation of Educators into Educational Management Secrets*. New York: Springer.

Schank RC (2005) *Lessons in Learning, e-Learning and Training*. San Francisco, CA: Pfeiffer.

Sills SJ and Song C (2002) Innovations in survey research: An application of Web-based surveys. *Social Science Computer Review* 20(1): 22–30.

Simonson M, Smaldino SE, Albright M, et al. (2012) *Teaching and Learning at a Distance: Distance Education Foundations*, 5th Edition Charlotte, North Carolina: Age Publishing.

Telli Yamamoto G and Altın D (2020) The coronavirus and rising of online education. *Journal of University Research* 3(1): 25–34.

UNESCO (2020b) COVID-19 educational disruption and response. Retrieved from https://en.unesco.org/themes/education-emergencies/coronavirus-school-closures.

UNESCO (2020a) COVID-19 educational disruption and response. Retrieved from https://en.unesco.org/covid19/educationresponse.

Walvoord A, Redden E, Elliott L, et al. (2008) Empowering followers in virtual teams: Guiding principles from theory and practice. *Computers in Human Behavior* 24(5): 1884–1906.

Whitaker T, Whitaker B and Lumpa D (2013) *Motivating & Inspiring Teachers: The Educational Leader’s Guide for Building Staff Morale*. New York: Routledge.

WHO [World Health Organization] (2020) Coronavirus disease 2019 (COVID-19) Situation Report – 1. Retrieved from https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200121-sitrep1-2019-ncov.pdf?sfvrsn=20a99c10_4.

Gerard Guile and Leask M (2013) Teaching with technologies. *Open University Press* (McGraw–Hill Maidenhead UK & New York).

Zhang W, Wang Y and Yang L (2020) Suspending classes without stopping learning: China’s education emergency management policy in the COVID-19 outbreak. *Journal of Risk and Financial Management* 13(3): 1–6.

Zhong R (2020) The coronavirus exposes education’s digital divide. Retrieved from nytimes.com: https://www.nytimes.com/2020/03/17/technology/china-schools-coronavirus.html.

Author biographies

**Dimitrios Gkoros** is a PhD candidate at the Early Childhood Education Department, University of Ioannina, Greece currently working in his thesis about educational leadership while at the same time he works as a primary school teacher. He has two master’s degrees, one in Organization and evaluation of education and another in Organization and management of education: educational leadership. Additionally, he has participated in several international conferences, has published a book about a Greek pedagogue and philosopher and some articles in both international scientific journals and international conferences. His research interests include Educational Leadership, Educational Management, Educational Administration, Educational Evaluation, and Distance Education.

**Tharrenos Bratitsis** is a Full Professor at the Early Childhood Education Department, University of Western Macedonia, Greece and a director of the Creativity, Innovation and Technology in Education (CrInTE) Laboratory. He has...
participated in over 250 international conferences’ scientific committees; is a member of the reviewers’ board of 47 scientific journals (3 as an associate editor) and publishes regularly, having over 210 scientific papers with over 1000 citations on his work. He has participated in over 45 research funded projects, 17 as a coordinator (global or for UOWM). His research interests include Technology Enhanced Learning, Game-based Learning, Digital Storytelling, STEAM Education, Educational Robotics, Computer Supported Collaborative Learning and Learning Analytics.