Examining the Role of School Leadership in the Digital Advancement of Educational Organizations

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ABSTRACT

This study examines the viewpoints of primary education teachers in the Dodecanese Prefecture regarding the role of school leadership in the digital development of educational organizations during the 2022–2023 school year. More specifically, it examines the recent developments in schools in the aftermath of the COVID-19 pandemic, with a particular emphasis on two major themes: (a) the utilization of novel technologies to enhance communication channels among school leadership, educational staff, and parents, and (b) the significance of digital leadership and investment in educational organizations. The study is founded on a quantitative survey of 117 teachers, with data collected through an online questionnaire. After presenting the respondents' demographic profile, a descriptive and inferential analysis was conducted using the SPSS 29.0 statistical program. The article concludes by presenting the results of the research questions, conclusions, and recommendations for future research. The study found a positive correlation between teachers' level of education and their level of digital literacy. Nevertheless, it appears that the gender of the principal did not noticeably affect the views of teachers regarding their role in promoting the integration of digital technologies in the school.

Keywords: Communication, digital investment, digital leadership, school leadership.

1. Introduction

Power and Heavin (2018) argue that effective leadership, strategic planning, and the systematic integration of new technologies are prerequisites for digital development in educational organizations within the contemporary school frame. To facilitate the digital empowerment of organizations in the complex and evolving digital landscape, educational institutions should prioritize certain internal and external factors. Thus, the school leadership is responsible for practically implementing many of these priorities in school praxis (Eden et al., 2019).

More specifically, school leadership is therefore accountable for the effectiveness of digital communication and networking during the educational process, both regarding the internal and external educational context. This includes maintaining digital communication channels, platforms, and multimedia applications (Raptis, 2022). Effective communication with educational staff and parents is crucial for managers in 21st-century educational organizations (Raptou et al., 2017). Digital events, conferences, and visits can be held through digital tools, connecting all organization members regardless of location (Burleigh, 2020). School leaders may not perceive themselves differently in the post-COVID-19 era. However, their behavior and leadership practices have undergone a radical transformation, which may be irreversible (Harris & Jones, 2020).

The use of new technologies in educational settings, particularly within educational organizations, has long posed a challenge for school leaders. In recent years, these technologies have been increasingly adopted as valuable tools for administrative support (Seyal, 2012). The administrative tasks of school principals include ensuring the proper use of schools’ technological equipment, communicating with parents and the educational staff via email, producing electronic documents and customized web forms, and cooperating with local institutions and parents’ boards in order to secure necessary financial resources for upgrading...
and maintaining schools’ technological equipment (Raptis & Psaras, 2013). Gonzales (2019) defines digital leadership as a new form of leadership that connects administrators to technology. It involves using technology, particularly social media, to improve the lives, well-being, and conditions of others (Couris, 2013). Administrators in educational organizations must adopt a shared mindset to foster a collaborative culture that focuses on how students and teachers engage with technology (Aksal, 2015). In order to deliver these systemic changes in pedagogical practices and instruct students, education leaders must build a shared vision of how technology can meet the needs of all parts of the educational process (Ellis et al., 2021).

As educational organizations rely more on technological innovations, school leaders must harness the power of new technologies to create a meaningful, inspiring, and engaging digital culture (Sheninger, 2017). Encouraging school leaders to embrace their digital role requires cultivating new opportunities to support and learn about new technologies. Sincar (2013) identified five main challenges school leaders face in integrating technology into educational organizations. These challenges include a lack of technological training, organizational resistance, insufficient resources, inequity, and bureaucracy. Regarding the challenges school leaders face when integrating and using new technologies in the school context, Gonzales (2019) identified budgeting, maintaining initiative, negotiation, and setting expectations as key factors.

Similarly, Aksal (2015) argues that school leaders have limited opportunities to implement digital leadership in their schools due to various constraints. These include limited professional development and training time, inflexible curricula, lack of technology infrastructure, and financial constraints to upgrade current technology infrastructure. After the COVID-19 pandemic, it is crucial to systematically prioritize digital investment in teachers, students, and parents (Suphakicco, 2022).

Teachers must develop digital skills to use new technologies to provide digitally enhanced education constructively. This will create an engaging learning atmosphere for all participants. Digital investment in teachers, students, and parents is at the core of the digital transformation of a school. Furthermore, it is important to emphasize that during the digital transformation of an educational organization, its members’ shared culture and team vision regarding new technologies are the key drivers of transformation at a deeper level. Nevertheless, it is not solely the technology itself that drives the transformation since without the proper guidance of strong school leadership and a team consensus, the goal of digital transformation and development of organizations is at risk of being left unimplemented and unfinished (Demchenko et al., 2021). The effective digital literacy of the teaching staff, combined with coordinated efforts to strengthen and update the technological equipment of each school, is the key to the digital empowerment of schools, especially in times of crisis.

The European Action Plan (2021–2027) sets out a long-term strategic vision promoting the development of a high-standards digital education ecosystem and strengthening digital skills and competencies. In the frame of this policy and European policy cooperation programs in the field of education and training, Cedefop, a European institution based in Thessaloniki, Greece, has played a significant role in enhancing digital skills among managers, teachers, and learners through seminars, workshops, and training programs in the country. They have also highlighted the need for developing similar policies in Europe (Psifidou & Grm, 2022). This policy aims to promote excellence in preparing teaching staff for digital environments, such as virtual reality, artificial intelligence, and emerging technologies, and to incorporate these developments into teaching, learning, and evaluation processes.

2. Research Methodology

The aim of this study is to explore, analyze, and interpret the views of Primary Education teachers in the Dodecanese prefecture regarding the contribution of school leadership to the digital development of educational organizations. The main purpose of the study is to explore two central thematic axes: a) the use of new technologies and communication channels between school leadership, teaching staff, and parents, and b) the investment in digital leadership in educational organizations. The secondary objectives of the research, which also serve as the main research questions, are:

1. To what extent are new technologies used for communication between school leadership and teaching staff?
2. To what extent is digital media used to communicate between school leadership and parents?
3. What are teachers’ opinions regarding the level of digital investment in schools?
4. What is the level of digital training of educational staff in schools?
5. Is there a correlation between teachers’ level of studies and the degree of digital training?
6. Do teachers’ views vary according to the school principals’ gender in terms of their contribution to the development of new digital media?

For this study, a questionnaire was used to collect data, a widely used data collection tool. This research questionnaire consisted of an introduction and two distinct sections. In the introduction, the main purpose of the research was clearly stated, and the privacy of participants was emphasized. In the first section, there were 6 demographic items, which refer to the gender, age, level of education, gender of the head teacher, employment status and years of service of the participants. The second sector, which is the main part, contained 26 items which corresponded to the research objectives (research questions) measured by a five-point Likert scale (1 = never, 2 = rarely, 3 = sometimes, 4 = often and 5 = always).

The population of this study was primary education teachers of the prefecture of Dodecanese. The questionnaire was developed using Google Forms and was distributed to the school principals using the school’s email addresses. The sample consisted of 117 teachers.

Table 1 describes the sample according to the demographic questions of the questionnaire. It demonstrated
that 117 teachers participated in the sample, of which 32 were men (or 27.4%) and 85 were women (or 72.6%).

Table II demonstrates that 11 teachers (or 9.4%) are up to 29 years old, 69 teachers (or 59%) are from 30 to 39 years old, 20 teachers (or 17.1%) are from 40 to 49 years old, and 17 teachers (or 14.5%) are from 50 years old and above.

From the data in Table III, it can be seen that 33 teachers (or 28.2%) have the qualification of higher education degree, 4 teachers (or 3.4%) have a second degree, 78 teachers (or 66.7%) have a master degree and 2 teachers (or 1.7%) have a doctoral degree as their top qualification.

From the data in Table IV, it can be concluded that 62 teachers (or 53%) stated that their school principal is male and 55 (or 47%) that the principal is female.

The data in Table V shows that 82 teachers (or 70.1%) are full time teachers and 35 teachers (or 29.9%) work as substitute teachers.

Table VI shows that 29 teachers (or 24.8%) have up to 5 years of experience, 28 teachers (or 23.9%) have 6 to 10 years of experience, 33 teachers (or 28.2%) have 11 to 15 years of experience, 12 teachers (or 10.3%) have 16 to 20 years of experience and 15 teachers (or 12.8%) have 21 years of experience and more.

3. Results and Discussion

Using the parametric criterion of the mean (one of the measures of central tendency), standard deviation (one of the measures of variance), t-test for two independent samples and Spearman’s correlation (Spearman’s rho), the following results were extracted using descriptive and inferential statistics. Specifically:

Table VII corresponds with the first research question and presents the mean and standard deviation of teachers’ views about the use of new technologies for communication between school principals and teaching staff (use of email, use of social media, use of digital video conferencing platforms, new technologies and training seminars). All the answers recorded in the first research question indicate that the teachers of the sample evaluated the frequent use of new technologies for communication between school principals and teaching staff (M = 3.96, SD = 0.78).

Table VIII corresponds with the second research question and presents the mean and the standard deviation of the relevant statements for the use of digital media for communication between school principals and parents (use of social media, information through the school’s website, workshops for the development of digital skills of parents, etc).
meetings using teleconferencing). All answers related to the second research question indicate that the teachers of the sample evaluated the moderate degree of New Technologies used for communication between school principals and parents (M = 3.18, SD = 0.76).

‘Table IX’ corresponds with the third research question and presents the mean and the standard deviation of teachers’ views regarding the degree of digital investment in schools (availability of digital devices, availability of portable devices to be used by students outside school timetable, school participation in European and national programs through New Technologies, digital training programs). All answers referring to the third research question are presented in ‘Table IX’, indicating an average score regarding schools’ digital investment (M = 2.79, SD = 0.89).

‘Table X’ corresponds with the fourth research question and presents the mean and standard deviation of teachers’ views on the degree of digital training of the teaching staff in schools (ability to create digital material, filtering of data on the internet, degree of daily use of digital media for communication, degree of protection of digital devices, ability to understand and solve technical problems, degree of searching for opportunities to develop digital skills, degree of protection of digital devices, ability to understand and solve technical problems, degree of digital skills development, degree of digital literacy, degree of digital literacy, degree of digital literacy, degree of digital literacy, degree of digital literacy and digital literacy in schools). Mean indicates that teachers perceive that they have a rather high digital training (M = 3.77, SD = 0.75).

‘Table XI’ correlates with the fifth research question and presents the correlation between teachers’ education level and their level of digital literacy, assessed through Spearman’s correlation coefficient (Spearman’s rho). The relationship between teachers’ study level and teachers’ digital training was statistically significant, r_s(115) = 0.228, p = 0.013.

‘Table XII’ corresponds with the sixth research question. More specifically, an independent-sample t-test was run to determine if there were differences in digital media use between male and female school principals. Digital media use was not different for male principals and female principals, 95% CI [−0.32, 0.39], t(115) = 0.211, p = 0.84.

### 4. Conclusion

In conclusion, it appears that principals have adapted their communication methods with teachers in the post-COVID-19 era. This includes the use of mixed communication methods, often incorporating new technologies, particularly in situations such as emergencies caused by bad weather, pandemics, or geographically inaccessible areas (O’Shea et al., 2022; Saraih et al., 2022).

Legitimate questions arise regarding the appropriate and recommended use of digital media by school management to communicate with parents, particularly in proportion to parents’ digital competence. The text adheres to conventional academic structure and formatting, with a logical flow of information and causal connections between statements. After the COVID-19 pandemic, communication between schools and parents heavily relies on digital media, assuming that all parents are familiar with these tools. It is important to ensure that communication is clear, concise, and objective, avoiding biased or emotional language. At the same time, educational activities aiming at familiarizing parents with digital tools, either organized by schools or in cooperation with local authorities, are largely absent from schools.

Therefore, it is important for schools to prioritize the systematic development of new digital skills in teachers, students, and parents, as well as equipping educational organizations with updated technologies and digital devices, in shadow of the COVID-19 pandemic (Suphakicco, 2022). The digital development of educational organizations in the post-COVID-19 era is reliant on a combination of digital investment in human capital and technological equipment, as well as effective school leadership.

As per self-ratings by teachers, their general level of digital training is above average to very good. It is evident that teachers in modern schools have developed their digital skills to a commendable level and are well-versed in the use of new technologies and digital devices for communication and work. The Council of the European Union has expressed its aim to promote and support the implementation of similar policies in Europe, particularly considering the unforeseen closure of schools due to the COVID-19 pandemic (Psifidou & Grm, 2022).

Moreover, the study found a correlation between the educational level of teachers and their digital literacy, albeit weak. It was observed that higher levels of education were associated with greater digital literacy. Furthermore, the study found no significant difference in teachers’ perceptions based on the gender of the school principals regarding their contribution to the development of new digital media.

The study suggests the following for further research on this topic:
1) It may be worth considering repeating the survey with a representative sample of primary school teachers.
2) It may also be worth considering repeating the survey with a representative sample of secondary school teachers.
3) Another option could be to conduct a comparative survey of the views of primary and secondary school teachers.
4) Additionally, a similar survey could be conducted for primary and secondary school principals.
5) A mixed qualitative and quantitative survey could be conducted comparing the beliefs and attitudes of primary education school principals and the secondary school principals.

**CONFlict of Interest**

The authors declare that they do not have any conflict of interest.

**References**
