

Digital Competence of School Leaders



**Georgios D.
Raftoulis**

Larisa, 2022

Georgios D. Raftoulis

Digital competence

Self Publisher

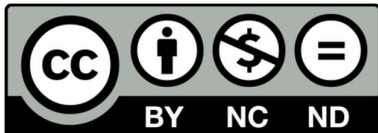
©Georgios D. Raftoulis

Kouma 42 Larisa

Phone: +306944916163

E mail: raftoulis23@gmail.com

ISBN: 978-618-00-3792-0



Αναφορά Δημιουργού-Μη Εμπορική Χρήση-Όχι Παράγωγα Έργα 3.0
Ελλάδα

(CC BY-NC-ND 3.0 GR)

Περιεχόμενα

1. Introduction	5
1.1. Information and communication technologies (ICT)	6
1.2. ICT in educational environments	7
1.3. The use of ICT in the administrative practice	11
1.4. Digital competence	15
1.5. Digital competence of directors	18
1.6. The role of leadership in introducing ICT into education	20
1.7. Possible barriers to the introduction of ICT to school and ways dealing with the principal.....	22
1.8. Conclusions	24
References	25

1. Introduction

The modern director of an institute of vocational training or school of second change must have digital competences in order to help its organization to be adapted to new conditions as well as to contribute to the opening of it to society something that will help the trainees and trainers. It is indisputable that the digital age is a reality and every active citizenship and director have to foster them to the administrative issue. This chapter is about the significance of digital competences to administration of education as well as to institutes of vocational training or schools of second change.

1.1. Information and communication technologies (ICT)

It is an undoubtedly reality that the “technology” has introduced in many fields of our life transforming the way we live, think, work and entertain. The curriculum of the schools must be changed including the technology. ICT changes the way of learning and teaching.

ICT is the combination of three words: Information, Communication, and Technology. ICT is *“a combination of technological tools and resources that are used to manipulate and communicate the information. Technological tools are the electronic and digital devices like computers, Internet, and broadcasting technologies”* (Kaware & Sain, 2015, p.5).

ICT refers to scientific, technological and management technique that is used for information's as well as to be connected with socio- economic and cultural issue.

In recent decades, the term "Information and Communication Technologies" (ICT)" has been widely used in place of "information science» According to Komi (2004, p. 16), ICT refer to “technologies that allow the processing and transmission of a variety of forms of information representation (symbols, images, sounds, videos) and on the other hand, the means that carry these intangible messages”.

It is a reality that ICT plays a fundamental role in the entrance of technology to educational procedures (Kaware & Sain, 2015). *“The aim of ICT integration is to improve and increase the quality, accessibility, and cost-efficiency of the delivery of instruction to students. It also refers to benefits from networking the learning communities to face the challenges of current globalization”* (Albirini, 2006, p. 6).

The entrance and integration of ICT in education changes the way of teaching and learning based on technology. It aims to an effective learning using new pedagogical ways.

According to Papastamatiou (2010) ICT includes the applications, the methods and the products that are offered to us by modern science and technology which are

related to the collection, processing, classification, electronic coding, and study of any information which can be in the form of text, number, graph, audio, image or video.

The rapid development of knowledge combined to these technologies, the ease of access to information and the speed of transportation have made the information, the mind, and the heart of the society and the communication the central concept of social theory in modern times.

Khan et al. (2012) refers that ICT in education includes technologies such as the computers, the Internet, the broadcasting technologies (radio and television) and the telephony, which facilitate so the way of teaching, and the learning. All the above is as an important tool having in the centre the student and the needs through differentiated and personalized teaching.

The definition of Lloyd (2005) includes the technologies that enable the processing of the information that they provide. It also includes any type of equipment that enables the functions and activities of information management. The rapid development of ICT has also led to the development of the necessary technologies with the same rapid way so that they can adapt to the changes that are taking place.

1.2. ICT in educational environments

New technologies have now penetrated in all areas of human activity, including, of course, the education. ICT cannot replace the role of teacher but they add them in teaching and learning. In addition, ICT integration in education is crucial when teachers and students are physically in distance as learning take place everywhere and at any time. Every students can have access whenever it is able for him/her. ICT is a constant procedure which drives to an effective learning environment (Young, 2015).

Raptis & Rapti (2001) consider an immediate need the integration of ICT in the education as they are tool in the hands of the teacher not only for the learning of students but and for their development and socialization as citizens of society. By

this way the introduction of ICT creates a new didactic environment where the teachers need to be familiar with the capabilities of ICT not only for their own preparation and development, but also mainly to support and guide students so that they can be able to learn with the help of ICT through their active involvement in various planned activities.

The use of technology in the learning process is important because it allows all students, regardless of their different characteristics, to have access to education. It allows at the same time different interactions that do not exist in conventional education, as well as allowing the student to form the learning according to every own preferences. Brush, Glazewski and Hew (2008) consider that ICT help students to solve problems and give solutions to any problem of them. The students have easier access to knowledge.

ICT provide a quality teaching which, according to Lowther et al. (2008), means that it provides autonomy, capability, and creativity. The term autonomy means that students are responsible for their learning using ICT. The teachers divide students in-group. The cooperative learning helps students to obtain new knowledge having confidence.

Adding to above option, Serhan (2009) considers that ICT provides autonomy as teachers have the ability to create their own material having the control of the teaching. According to the capability of students, when they have confidence, they are able to apply the knowledge using technology effective.

New technological means of communication and their penetration into the education system affect all levels of education. So, the new technology is addressed to everyone, facilitates the accomplishment of the educational task and at the same time opens new horizons. The communication within the educational organization becomes immediate and all the members can communicate more easily with each other or with their school principal to resolve issues that concern them quickly and efficiently, and to fill any gaps or queries they may have (Bhosale et al., 2020).

ICT and its use in teaching, promotes the cooperation among the students, with the opportunities it provides, in order to work as a team and collectively.

High quality education can be offered with the adoption of ICT. There are four different dimensions of quality education that can be supported by ICT: learning with practice, the discussion in real-time, the conversation after hour, and the guided teaching. The use of ICT could improve the performance, the teaching, and the management, having a positive impact in education as a whole, and contribute to the development of relevant skills in disadvantaged communities, helping to their liberation and transformation (Khan et al., 2012).

ICT can be used in order the students to achieve their goals with low cost. It is able to spread the knowledge making it effective. ICT contributes to education with the following ways:

- ICT can store information providing new ways of communication.
- ICT reduce the quantity of information giving higher quality of it.
- ICT can be used in order to support theories of learning.
 - ICT can be used, finally for the creation of new type of tools of learning in order to be improved the quality (Khan et al., 2012).
 - ICT helps students to have immediate access and equal opportunities of learning having better access to information (Jimoyannis, 2008). Teachers have to use ICT in their learning and teaching process in order students is able to solve problems and take initiatives. ICT affects students to interact with each other. ICT, in addition, improve student's creativity improving the abilities of solving problems (Khan et al., 2012).

The value of use of ICT in the learning process are crucial to effective teaching (Panagiotakopoulos et al. 2003; Phutela & Dwivedi, 2019), and the transformation of the class environment to a fuller understanding of concepts. The use of supervisory tools as learning tools promotes the knowledge acquisition, the quality reflection and the conceptual learning.

Simatos (2003, p.150) identifies the following benefits from the use of new technologies in the learning process:

- Development of interest
- Development of clear representations

- Contribution to a better and fuller understanding of the subjects
- Saving teaching time
- Promotion of self-energy
- Provision of timely teaching
- Cultivation of aesthetic
- Facilitation of teaching and learning.

The students:

- Are excited about the use of new technologies in the learning process
- Are easily adapted and quickly acquire the skills needed for the handling of modern technological means
- Learn to cooperate and to exchange views, with the appropriate intervention of their teachers
- They are able to undertake initiatives and act complex works
- Acquire the appropriate knowledge and skills so they can identify and retrieve the required information, evaluate the quality and utility of these information's, plan, collaborate and present the results of their research.

However, the use of ICT can cost, which in many cases is unbearable and does not reach for all the school units. Furthermore, their installation can be complicated in some cases. Finally, some teachers cannot use ICT when they have not the necessary knowledge and experience. For this reason, in order teachers' have high confident level, they need to have sufficient ICT skills in order to use it in the classroom. In addition, teachers need to appreciate the pedagogical role of ICT in teaching.

Winzenried, Dalgarno and Tinkler (2010) refers that those teachers who have attend any ICT course are better in their teaching .

The basic dimension of this issue is not whether ICT can provide teaching and learning activities, but the way teachers and students can approach and use them and be benefited from ICT in their work (Postholm, 2007). Especially in Greece today, ICT is part of education both as an autonomous subject and as a means of enriching the teaching of other lessons (Michalakis et al., 2019).

1.3. The use of ICT in the administrative practice

The integration of ICT in education does not only mean changes in the level of teaching by teachers, but is directly related to administrative tasks, both by the personnel of management (director - secretariat) as well as the teachers themselves. Among the multiple administrative tasks that need to be done by the director of a school unit is the tasks that require time and effort and, of course, is demanded the use of ICT is essential. ICT ensures faster and easier access to information as well as better quality of it (Oyedemi, 2015).

Specifically, ICT assist management in the enhancing of interactive communication between teachers, students and parents, as it is provided the ability to organize the profile of students in an electronic database, their particular learning needs, and also their progress and development, so that teaching can be better adapted to their particular needs. In addition, it is provided the possibility of computerization of management, via electronic protocol, for monitoring of incoming and outgoing administrative documents. So, by this way, is significantly reduced the work that would be handwritten and is allowed the best monitoring of the movement of documents and the progress of administrative work. ICTs are also important as they provide the appropriate tools that facilitate the search and the retrieval information, ensuring the immediately and reliably information of the director and the teachers of school unit in service matters.

According to Papadaniil (2005, p.19), ICT contribute effectively to school management and is a useful tool as:

- It serves to the secretarial function of a school by helping to handle it.
- It strengthens the electronic communication of the school as it offers applications such as email and videoconferencing.
- It helps to management of issues that can be raised.
- It can facilitate the organization of the school by providing the appropriate means for the completion of day-to-day administrative tasks such as the storing of student grades, the timetables, and more.

The most important advantages of the use of ICT are the following:

- They give greater efficiency and flexibility in all school unit
- They provide the ability of collection, storage, and use of data.
- They provide records - data of the highest quality and accuracy.
- They provide details for specialized situations and assist by this way in taking better administrative decisions.
- They reduce the workload of the teachers of the school and of the management, increasing their available non-teaching time that can be allocated to other development activities.
- They reduce the production of printouts and so the time of their filling and photocopying.
- They provide broader and better communication within and outside the school unit.
- They improve the relationship between school-home and the provision of more access to information for the parents of students.
- They provide better social networking opportunities.
- They provide the ability of better management of personal data of the students who are written in the school who are promoted to other classes and are gone to other schools.
- They provide access to more accurate data about the attendance and school performance of the students.
- They allow the better cooperation at the level of evaluation, both among the teachers and among the various sections (Lloret & Piñero, 2018).

From the other aspect, Dede (2008, p. 46) rejects the traditional image of the director as a technology leader and proposes a model of multiple forms of technological leadership within a school. He suggests that technology leaders exist in every level of the educational organization. Specifically, the principals are responsible for the budget that will be used for technology purposes; teachers of ICT are responsible for the integration of technology into the curriculum. Teachers need to know how to link technology with pedagogy and ultimately students who are familiar with the technology drive the use of any innovation in ICT. There is a need for all stakeholders in a school to be involved in the design of effective technology integration.

- These are the most important fields that ICT are essential in the administrative support of the school:
- The communication of the school unit. The principal is the representative of the school unit in its contact and communication with everyone. He/she has regular communication with many factors with which he/she cooperates. In addition, he/she also communicates with the other school units and with the society in general. This communication can be done either with the traditional way or by e-mail. The second way makes the communication direct and as the volume of electronics messages that are received by the school unit are constantly increasing this way is considered necessary (European Commission, 2020).
- The school principals have new effective tools that contribute to his/her work and make him/her more accessible to the teachers. Many surveys in the past have recognized problems with the communication of school principal's with their staff describing the communication incomplete or even non-existent. This was often attributed to the lack of skills and time from the part of the managers. However, through new technological means the workload is reduced and the manager has more time to communicate with his/her teachers. In particular, the modern leader of an educational unit thanks to the benefits of the ICT can eliminate all geographical distances by receiving direct responses from school counsellors or senior management on key educational issues, or it can even chat and exchange views with principals from other schools. But also from the teachers' point of view, they may be able to get in touch with other colleagues from different school units which are miles away. Consequently, the integration of ICTs in school management provides a modernized form of administration that provides faster services.
- Writing of official documents. As an organization's official documents are the information, whether printed, electronic or digital, that are produced, received, and retained by the public authorities as evidence and as information of the organization's obligations and activities. Example of such documents is the papers of payment (regular salary, extraordinary salaries, and earnings certificates). In addition, they are related to the students writing

in the school, the control of their attendance, the publishing of student documents (eg study of certificates, certificates of recruitment, student record). The creation of the curriculum of school unit, the planning of the exams using the right software saves time.

- Filling of forms – use of internet. The school unit quite often is required to fill various forms and send them online to various services (European Commission, 2020).
- The creation of a website for the school unit. The identity of the school can be known not only to the educational community but also to the rest of society. This will promote the cooperation with other school units making the communication more immediate and the activities, events, and programs related to the school unit are become known to all.
- Electronic data processing. By this term, we mean the electronic management of information's of the school unit that is made by the use of special software and specialized programs.
- Financial management. An important factor for every school unit is its financial management that requires the retirement and keeping documents of payment, financial records.

Despite the great importance and contribution of ICT in the field of education, their integration into public education in Greece has not been fully realized. However, the increasing complexity of the education system makes the integration and exploitation of the ICT imperative, as they can contribute to the handling and facilitation of all educational and administrative processes. Specifically, the need of incorporation and use of new technological tools in everyday practice is that these tools can provide better organization, time saving, cost reduction and more generally facilitate all administrative processes.

Makri and Vlahopoulos (2015) add that through the application of technology to the education system, is achieved the access to a wealth of information, the minimizing the time that is spent on administrative tasks, the modernization of educational management and the better communication. The advantages of new technology are making positive changes in the educational space as they facilitate the school unit's processes at the micro level, but also help the function of the

education system at the macro level. The aim is the transformation of the traditional school into a "digital" one, flexible and adapted to the modern "digital" environments in order to can respond to the needs of Europe (Iliadi, 2014).

1.4. Digital competence

The term of digital competence has been under strong discussion as ICT has introduced in our society and is deemed as an important tool that can solve problems (OECD, 2010).

Digital competence includes digital technologies that are used for learning and teaching, for work in order people be active members of a society. The term of digital competence describes the skills that are related to technology. Some relevant terms have been used in order to describe the term of digital competence. Some of these are the following ones: ICT skills, technology skills, information technology skills, 21stcentury skills, information literacy, digital literacy, and digital skills. All the above terms present, firstly, that our society changes rapidly, secondly, approves the rapid development of technology as well as, the increased interest for different topics.

Nowadays, the term "competence" is more used compared to it of "skills." According to OECD (2005, p. 4), *"a competency is more than just knowledge and skills. It involves the ability to meet complex demands, by drawing on and mobilizing psychosocial resources (including skills and attitudes) in a particular context."*

Digital competence includes information and data literacy, communication and collaboration, media literacy, digital content creation (including programming), safety (including digital well-being and competences related to cyber security), intellectual property related questions, problem solving and critical thinking (Ilomäki et al., 2011, p. 1). According to Ferrari (2013, p. 3):

"Digital Competence is the set of knowledge, skills, attitudes (thus including abilities, strategies, values and awareness) that are required when using ICT and digital media to perform tasks; solve problems; communicate; manage information; collaborate; create and share content; and build knowledge effectively, efficiently, appropriately, critically, creatively, autonomously, flexibly, ethically, reflectively for work, leisure, participation, learning, socializing, consuming, and empowerment".

Aesaert et al (2013, p. 132) define digital competences as the, *“integrated and functional use of digital knowledge, skills and attitudes.”* Petersson (2017, p. 2) writes, *“generally speaking, digital competence often refers to the skills and literacies needed for the average citizen to be able to learn and navigate in digitalized knowledge society.”*

In our digitalized society, it is necessary for every active citizen to understand the usefulness of ICT as it helps everyone to the communication promoting the creativity and innovation. It is, very important for citizen to have the critical ability to recognize the dangers of ICT. Everyone who is engaged with digital technology has to judge the provided information's as well as he/she must be in the position to follow the ethical principles that are related to digital technologies (European Council, 2018).

Every active citizen, in our days, is obligated to know and use digital technologies in order to be integrated to social society as a whole. The above helps to creativity, cooperation, and social inclusion. These skills include the ability to can use, have access, be able to filter as well as evaluate and share digital content. (European Council, 2018).

Those active citizen that are engaged with digital technologies must be able to judge the information's and be responsible as well as open-minded in the use of digital technology (Caena & Redecker, 2019; European Council, 2018). Janssen et al. (2013) refers to twelve different areas of digital competence including knowledge, skills, and attitudes.

The European Commission defines 11 actions for the period 2018-2020, in order to help member states to face the challenges of digital technology in education. The Action Plan for the digital education was about the formal education. It aimed to develop more the digital competences improving the education making better use of digital technology.

The DigComp project (2011-2013) proposed 5 key areas of competence including:

1. "Information: It is related to identify, locate, retrieve, store, organise, and analyse digital information, judging its relevance and purpose.
2. Communication: It has to communicate in digital environments, share resources through online tools, link with others and collaborate through digital tools, interact with and participate in communities and networks, cross-cultural awareness.
3. Content-creation: Create and edit new content (from word processing to images and video); integrate and re-elaborate previous knowledge and content; produce creative expressions, media outputs and programming; deal with and apply intellectual property rights and licences.
4. Safety: personal protection, data protection, digital identity protection, security measures, safe and sustainable use.
5. Problem-solving: identify digital needs and resources, make informed decisions as to which are the most appropriate digital tools according to the purpose or need, solve conceptual problems through digital means, creatively use technologies, solve technical problems, update one's own and others' competences" (Ferrari, 2013, p.4).

The DigComp 2.0 contains similar dimensions of digital competence including the following ones: information, communication, content creation, safety, problem solving as they are referred to framework of 2013 (Vuorikari et al., 2016).

The DigComp contains 21 competences about the skills and attitudes. The version DigComp 2.1 has eight levels aiming to the development of competence of people as well as to professional orientation (Carretero et al., 2017). The European Framework for the Digital Competence of Educators (DigCompEdu) is referred to digital competence that teachers must have in order to be adapted to new educational conditions (Carretero et al., 2017).

The DigCompEdu Framework is referred to 22 elementary competences that are organized to 6 areas: Area 1 has to make with the professional environment of teachers aiming to their personal and collective good of their organization. Area 2 examines the competence that is required in order teachers use digital competence effective. Area 3 is about the use of digital technologies to learning. Area 4 is related to evaluation. Area 5 is focused on ways and strategies that have in their core the

students. Areas 6 is referred to those pedagogical competence that are required for the digital competence of students (Punie & Redecker, 2017).

The digital competence has affected every type of school organization as well as its curriculum.

The DigCompOrg framework is used by educational organizations in order to be measured the grade of incorporation and use of digital technologies.

1.5. Digital competence of directors

The technological development has affected all fields of our society, and, of course the field of education. In this framework, leaders of every educational organization are responsible for the training of the teachers as well as for the technological equipment of their units.

The concept of leadership is the same as it was before years. The only difference is that leaders should re arrange the style in order to prepare students for the digitalized world. It demands a combination of attitudes and competence in order leaders be able to transform the culture of school unit using ICT (Sheninger, 2019).

In order the ICT to be integrated in school units, it is needed competencies and responsibilities (Flanagan & Jacobsen, 2003). Technology and ICT play a fundamental role in the school leadership interacting with others.

The survey of Hatlevik & Arnseth (2012) presents that the teachers are pushed by the principals decisions in order to use ICT in their teaching. Dexter (2008) It is very interesting the point of Dexter (2008) according to which, a leader must put visions and goals supporting and collaborating with the teachers.

Van Niekerk and Blignaut (2014, p. 249) defines that school leaders *“cannot remain bystanders that assume their teachers are skilled in ICT” but rather formulate and implement goals and strategies that support both the staff’s and their own professional development.*

Furthermore, the role of the school leaders is to be able to recognize the needs of schools and try to improve the professional development of teachers (Krumsvik, 2008).

Leader of a VET is essential to drive the six interconnected organisational conditions necessary for supporting teaching, training, and learning with ICT, namely:

- *A strategic plan;*
- *A vision;*
- *An institutional culture of creativity and openness;*
- *A whole-provider approach/coordinated policies;*
- *Provider infrastructure and*
- *Organisational structures*

Leadership is effective using ICT when:

- Both trainees and trainers have decided to entrance ICT to teaching
- The teachers are ready to use ICT
- It is adapted new ways of evaluation as the role of trainees and trainers have changed (European Commission, 2020, Rasmussen, 2016).

In our digitalization world, every director of every educational institution has to use ICT in his or her administrative issues that is includes seven pillars.

The first pillar, as it is shown in the above figure 7, of the leadership is the participation of students as well its results. Students are obligated to think deeply and the leaders must give the students the possibility to use tools of the real world. The technology must be in the basis of this pedagogy.

The second pillar of his leadership is the innovative learning, spaces and environments. According to this pillar, leaders must follow a vision in order to create a school building that it will be relevant to digital world. For the achievement of this purpose, leaders have to be innovative. .

The third pillar is the professional growth/ development. This pillar is related to the fact that principals must not feel to be alone and isolated but they can create their own Personal Learning Network in order to be able to have access to knowledge and have feedback. Leaders have to know the free means in order to follow the learning results.

The fourth pillar is the communication. Every leader can provide information's in real time through applications of ICT. This pillar demands the cooperation of all members.

The fifth pillar is public relations. Every leader in this pillar has to share the positive aspects of the school in order to create a transparency .

The sixth pillar is the branding. Leaders can use social networks in order to create a positive picture for their school. The above element helps the parents of teachers who seek a safe place for their children.

The last pillar is the opportunity. Leaders must seek ways in order to improve the existing curriculum and their professional development. So, they make improves in fields of school unit (Sheninger, 2019).

In a survey of Sathiamoorthy et al. (2011), it seems that leaders can affect and improve the digital competence of their teacher in a per cent of 30%. As better informed, they are for the technological dimensions as better they can contribute to the digital development of teachers. Consequently, only when leaders are ready for their role as technological leader, only then, they can help teachers to incorporate it in their teaching.

From all the above, we can conclude that it is very important for every school leader to push the teachers to be innovative and use ICT in their practice (Kirkland & Sutch, 2009; Kozma, 2003). Except from teachers, leaders can improve students digital competence through the existing of available in fracture (Dexter 2008).

Leadership plays an important role in what has to do with the entrance of ICT and digital competence to every school organization. The creation of the appropriate school climate between all the members of a school unit can make easier the use of digital competence (European Commission, 2020).

1.6. The role of leadership in introducing ICT into education

The integration of ICT in education is a vital topic which started since 1990s. Every society has as its obligation so to equip schools with computers as to cultivate a culture of their positive acceptance.

It is an undoubtedly fact that leaders play a crucial role in the integration of ICT in school unit but it does not be ignored the important role and attitude of teachers.

School leaders have a fundamental role in the field of educational change. They can be the tails in this effort. The teachers are forced to include ICT in their teaching and leaders must be the first one who has innovative ideas (Schiller, 2003).

In our rapidly changed world, with the entrance of ICT to schools, leaders face new challenges in their administration.

No one can ignore the digital competence of leaders of school organizations. Those leaders, who consider themselves as technological leaders, use more ICT so in learning as in administration. The possibility of using computers and the necessary software make leaders more effectively technologically (Afshari et al., 2012, 165).

Everyone who is technologically leader, have to know word program, XI sheets and presentation software. Leaders, additionally, must know the way in order to use internet with the other trainers and trainees. In the case that school leaders evaluate positively the use of ICT in school, there is a large possibility the other members to use ICT in school (Afshari et al., 2012).

Leaders are also these who need to design professional development programs for teachers. The professional development is necessary for the application of technology in schools. Career plans must be cost-effective and efficient. For the school administrators, professional development is one of their most important responsibilities. Researches have shown that one factor in building trust between teachers and their principals involve the participation of principals in the professional development of teachers. The research also shows that the satisfaction of teacher from their job is related to how the teacher's teaching focuses on their professional development. The managers are those, who must resolve the dilemma of how to provide appropriate technology training for all.

In addition, leaders should also be aware that if teachers are not at the centre of the technology training, then technology will fail. Teachers should be involved in the process of integrating technology into the curriculum. This participation will ensure that the teachers will take personal responsibility for the successful integration of ICT. Furthermore, the principals need to be prepared to encounter teachers'

resistance to technology, which is embedded in the curriculum. Many teachers perceive the technology as another burden of responsibility, which is added to the already overwhelming burden of a teacher. Principals must be prepared to provide extensive training for teachers in integrating technology into the curriculum, and create an environment that will facilitate the integration of technology in the curriculum.

1.7. Possible barriers to the introduction of ICT to school and ways dealing with the principal

The ability is a key to managers in using computers on a daily basis. In fact, the ability to use the computer can improve the quality and effectiveness of administrative performance in schools. The improving of quality could lead to the improvement of decision-making. It is clear that the effective training is vital to the effective use of ICT in their work. If the training is inadequate or unsuitable, managers will not be sufficiently prepared and perhaps not sufficiently confident to make full use of the technology. Therefore, the lack of managerial competence and the lack of quality training for managers can be obstacles to the use of ICT by managers (Afshari et al., 2010).

The research shows that the lack of training in the use of technology is a major challenge for school leaders. The need for technological training in the area of preparing teachers and principals is identified as an important need for the realization of technological innovation in schools. In addition, the inadequate development of the teaching staff, the lack of up-to-date colleagues on leadership and pedagogy issues, are strong barriers for school principals. Similarly, the level of ICT skills is very important for school principals in order to understand their role in the use of ICT in schools.

In this point, it should be highlighted that the teachers are not very positive in every change that is related to their teaching practices as the introduce of ICT requires from teachers to change the traditional way of teaching. In this stage the last ones can be positive when the leader support them.

The lack of available resources is another challenge for school leaders. While many schools, which do not have sufficient technology, are a challenge for the school director, many schools have all the necessary technological facilities. At the same time, school principals have to deal with the uneven distribution of resources, especially in schools, where he/she wants to integrate ICT but he/she fails due to lack of funds (Sincar, 2013, p. 3).

The school barriers also include those concerning with the school:

- Lack of time both personally and institutionally
- Lack of courage and confidence
- Fear of negative experiences of the past
- Lack of knowledge and information
- Embarrassment
- Lack of motivation
- Wrong beliefs
- Lack of equipment and resources
- Existence of unreliable and verified ICT
- Lack of support in all fields.

1.8. Conclusions

ICT gradually entrance in our daily life, changing, consequently the way education is conceived and delivered. In this transformation process directors of institutions of vocational training and schools of second change play a key role. Through the use of ICT their beliefs, pedagogical practices, and teaching skills are continuously challenged (Assar, 2015).

The digitalization has affected all areas of society and especially, the education having created new challenges for directors of LLL structures introducing new dimensions in directors competences.

In order to be able to adapt to new challenges directors of these organizations has to digital competences that would help them to their administration. As digital technologies are becoming a central part of the everyday work, directors must transform their previous educational traditions using technology in their teaching and administration (Pettersson, 2017).

References

Afshari M., Bakar K. A., Wong S. L., Afshari M., Fooi F. S. and Samah B. A., (2010). Computer use by secondary school principals *TOJET: The Turkish Online Journal of Educational Technology*, 9(3), 8-25. Available at: <https://files.eric.ed.gov/fulltext/EJ898011.pdf>

Albirini, A. (2006). Teachers' attitudes toward information and communication technologies: The case of Syrian EFL teachers. *Computers & Education*, 47(4), 373-398. Available at: <https://tinyurl.com/f7xyd4w>

Assar, S. (2015). *Information and Communications Technology (ICT) and Education*, 66-71. Available at: <https://hal.archives-ouvertes.fr/hal-02386986/>.

Bhosale, M. S. S., Salunkhe, M. A., & Surve, M. F. (2020). Influence of Modern Technology in Education, *National Seminar on "Trends in Geography, Commerce, IT And Sustainable Development*

Caena, F., & Redecker, C. (2019). Aligning teacher competence frameworks to 21st century challenges: The case for the European Digital Competence Framework for Educators (Digcompedu). *European Journal of Education*, 54(3), 356-369. Available at: DOI:10.1111/ejed.12345

Carretero, S., Vuorikari, R. & Punie, Y. (2017). *DigComp 2.1: The Digital Competence Framework for Citizens with eight proficiency levels and examples of use*. Available at: <https://publications.jrc.ec.europa.eu/repository/handle/JRC106281>

European Commission (2020). Digital education action plan 2021-2027. Education and training.

European Council (2018). Council recommendation of 22 May 2018 on key competences for lifelong learning, *Official Journal of the European Union*, 2018/C 189/01.

Ferrari, A. (2013). DIGCOMP: A Framework for Developing and Understanding Digital Competence in Europe. *JRC Scientific and Policy Reports*. European Commission.

Kaware, S. S., & Sain, S. K. (2015). ICT application in education: an overview. *International Journal of Multidisciplinary Approach & Studies*, 2(1), 25-32. Available at: <http://ijmas.com/upcomingissue/04.01.2015.pdf>

Krumsvik, R. J. (2008). Situated learning and teachers' digital competence. *Education and Information Technologies*, 13(13), 279–290. Available at: <https://tinyurl.com/nxudekhx>

Michalakakis, V. I., Vaitis, M., & Klonari, A. (2019). The ICT Literacy Skills of Secondary Education Teachers in Greece. In *CSEDU (2)*, 376-383. Available at: DOI: 10.5220/0007728703760383

OECD (2010). *Are the New Millennium Learners Making the Grade?* Technology use and educational performance in PISA. Centre for Educational Research and Innovation.

Oyedemi, O. A. (2015). ICT and effective school management: Administrators' perspective. In *Proceedings of the World Congress on Engineering*, 1. Available at: http://www.iaeng.org/publication/WCE2015/WCE2015_pp249-252.pdf

Petersen, A. (2017). Teachers' perceptions of principals' ICT leadership. *Contemporary Educational Technology*, 5(4), 302–315. Available at: <https://files.eric.ed.gov/fulltext/EJ1105498.pdf>

Sheninger, E. (2019). *Digital leadership: Changing paradigms for changing times*. Corwin Press.

Simatos, A. (2003). *Technology and Education: selection and use of supervisory means of teaching*. Athens: Pataki Publications.

Vuorikari, R., Punie, Y., Gomez, S. C., & Van Den Brande, G. (2016). *DigComp 2.0: The digital competence framework for citizens. Update phase 1: The conceptual reference model*. Joint Research Centre (Seville).

Young, M. (2015). Effective leadership Preparation: We know it looks Like and What It Can Do, *Journal of Research on Leadership Education*, 10(1), 3-10. Available at: <https://doi.org/10.1177/1942775115569419>

Some words about the author of this book...

Georgios Raftoulis was born in Larisa where he lives and works. He has studied Computer science in University of Macedonia, and Business of Administration in University of Thessaly. He has obtained two masters, about the administration of school organizations as well as about the adult education. He was leader of the 2nd Institute of Vocational Training in Larisa. Now, he works in the primary schools of Larisa.

Some words about this book...

This book is so current as it is occupied with digital topics, emphasizing to digital competence and its using in our digitalized society.

ISBN: 978-618-00-3792-0