

The Obstacles to Integrate Information and Communication Technology (ICT) in Kindergartens' Education from the Headmistresses View Point: A survey Study in Salfet Governorate / Palestine.

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Abstract

This research seeks to explore the obstacles to ICT integration in Kindergarten education practices from the perspective of headmistresses in Salfet governorate in Palestine. A total of (52) Palestinian kindergarten headmistresses participated in this research. A self-designed questionnaire was adopted as the research tool. The results indicated that a range of first-order obstacles, which included lack of supporting infrastructure to integrate ICT; lack of training courses on how to integrate ICT in education; lack of teacher's support; and lack of time to use ICT in educational practices. However, several second-order obstacles, such as Lack of teacher's interest; lack of experience among kindergartens' teachers in using computers and modern technology in education; and no obvious benefits to use ICT. Furthermore, the results indicated that the pre and in - service training on ICT, and daily use of ICT play a significant role in determining the headmistresses point view to both first - order and second - order obstacles, and at obstacles as whole. Also, several recommendations for future practices and research were included.

Keywords: ICT integration, Obstacles, Kindergarten headmistress, Salfet governorate / Palestine.

Introduction

In the twenty-first century, it has become imperative to introduce technology in the different fields of life, whether social, economic, cultural or even political, and technology has contributed to scientific progress in a considerable way, so this has led to the use of technology in the educational process to facilitate and organize information in all scientific fields. ICTs, according to United Nations definition (1999) includes Internet services, telecommunications equipment and services, information technology equipment and services, media and broadcasting media, libraries, documentation centers, commercial information providers, network-based information services, and other related information, and communication activities (Noor -ul-Amin, 2013a)

Since the 1980s, as the progress of new information and communication technologies (ICT's), and the increasing acknowledgment of its value in teaching and learning processes, many countries have introduced ICT's into their educational systems and polices (Blackwell, Lauricella&Wartella, 2014). Also, (Al – Naibi, 2012) confirmed the importance of ICT's in enhancing education quality, which led all countries of the world to include ICT's in their educational systems. They executed a set of initiatives, programs and investments to boost the process of ICT's introduction and integration in the educational filed (Kozma 2008).

These efforts have led to substantial outcomes, particularly in terms of the establishment of ICT's infrastructure, and the improvement of teachers' ICT-related knowledge and skills (Xia Liu & Jenny Pange, 2015). However, these achievements can still not meet people's high expectations and their ambitions obtained of ICT's for teaching and learning processes (Blackwell et al. 2014; Nader, 2006). Many previous studies indicated that despite the fact that teachers have a positive attitudes toward ICT for teaching and learning and had much enthusiasm to include it into teaching (Bingimlas 2009; Murad, 2014), but they did not frequently use it in their daily teaching practices (Liu., Toki & Pange, 2014; Alwani&Soomro, 2010). Maybe some teachers may use it in the purpose of teaching, but they could not achieve appropriate and effective integration practices (Redecker 2009).

One of the major reasons is that when teachers intend to introduce and integrate ICT's in their teaching practices, they will face a range of barriers and obstacles with which they do not know how to cope (Goktas, & Baydas, 2013). Despite many education personnel belief, and the great importance of ICT represents, there is

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some obstacles still standing in the way of including in the educational process, according to (Abdul Hafeez, 2011), the most important of which are but not limited to:

Lack of infrastructure, intellectual property issues, fear of losing privacy, financial problems, technical problems, teachers and students and do not possess the technical skills and necessary competencies to utilize ICTs in the educational process.

Furthermore, due to the kindergarten education particularity, the less attention paid to kindergarten education by governments and the concerned in education issues, as well as the impact of long debate among researchers on the place and role of ICTs in young children's learning and development (Wood, Specht, Willoughby & Mueller, 2008). The introduction of ICTs in the educational field is comparatively late in developing countries compared with developed countries (Pelgrum & Law 2003). This leads to the results that the levels of access to and integration of ICTs in the educational process may vary from country to another.

Also, (Khan, Hasan & Clement, 2012) reported that the quality and quantity of ICTs introduction and integration in teaching was much higher in developed countries than that in developing countries, and they argued that developing countries had achieved little in integrating ICTs in the teaching and learning process. Further, several political, economic, social, and cultural factors may also play important roles in the ICTs integration for teaching between countries (Al-Senaidi & Poirot, 2012). It can be said that the barriers to ICTs integration be faced with teachers in all educational stages may be very different from one country to another, due to not only the introduction stage of ICTs in education, but also the context which it is introduced (Alwani and Soomro 2010).

Kindergarten **headmistresses**, which are an integral part of the teacher community, are also experiencing several barriers in their ICTs integration process, most of these obstacles have similarity with those in other educational contexts (Nikolopoulou & Gialamas 2013). Hence, it is necessary to explore the barriers challenging kindergartens in the process of ICTs integration in the teaching, from teachers' point of view, especially since this matter did not receive more attention by researchers at the local and regional levels. Thus, it is of significance to identify these obstacles and to find out how to overcome them, which will be helpful to enhance not only the quantity but also the quality of teachers' ICT integration in their teaching practices. In addition, the Arab library generally and the Palestinian library particularly lacking such a study, the researcher sought to explore the obstacles to Integrating ICT in Palestinian kindergarten from the point of view of headmistresses.

The rest of the research is structured as follows: section 2 presents the theoretical Background, section 3 shows the literature review, section 4 discusses the research procedures, and finally, section 5 ends the research by results and recommendations.

Research Objective and Questions

The lack of evidence of obstacles to integrate ICT in Palestinian kindergarten formulates the basis for this research. Hence, the aim is to explore the perceived obstacles to integrate ICT in the educational practices in Kindergarten from the point of view of kindergarten headmistresses in Salfet Governorate in Palestine. More specifically, the following two research questions will be looked at:

The first research question (RQ1): What are the main obstacles to integrate ICT in Palestinian kindergartens from the point view of Kindergarten's headmistresses in Salfet governorate?

The Second research question (RQ2): Do obstacles of integrating ICT in kindergartens' teaching from headmistresses' viewpoint varies according to the variables (Pre - service training on ICT, in - service training on ICT, and daily use of ICT)?

2.0. Theoretical Background

2.1. Obstacles to Integrate ICT in General Education

The term ICT integration in kindergarten education means the introduction of technological means, especially computers and machines to improve the educational process and increase its efficiency.

(Searson, Laferriere, & Nikolow, 2011), defined barriers to ICTs integration in teaching as "the conditions that do not support the integration of ICTs in teaching practices. The use of ICT in the teaching and learning process is not without accompanying challenges. Researchers have concluded a number of obstacles teachers encountered in general education (Al-Senaidi & Poirot, 2012); Bingimlas 2009; Alwani and Soomro 2010; Tsai & Chai 2012; Chen, Tan, A., & Lim, 2012); Khan et al. 2012; Goktas et al. 2013; Murad, 2014; Wehba, 2006; Xia Liu & Jenny Pange, 2015). (Sherman and Howard, 2012; Ertmer, 1999] categorized these obstacles into two groups: first and second - order obstacles.

The first-Order obstacles, refer to the obstacles which are external to teachers (Xia Liu & Jenny Pange, 2015) that includes ; Lack of support (which is divided into two categories: technical support to deal with devices breakdowns that cause a lot of frustration for teachers, administrative support and decision-makers support) ; Lack of equipment, devices and resources; Lack of funding (purchases and maintenance of devices, networks, high-speed internet, utilities, and training programs need large budgets that may prevent the economic conditions of some countries from providing them. Likewise at the household level, the availability of computers and Internet outside the classroom is an impediment to the wider use and ICT integration of ICT.

Environmental - spatial constraints: the classroom size and the space available, and the absence of appropriate infrastructure, such as electrical connections and Internet networks, is a major obstacle preventing the ICT integration. In a study conducted in Jordan and another in Greece, it was observed that the reason is the lack of suitability of places designated for IT was due to the fact that they were not indeed intended for this, but were constructed as regular classrooms (Ihmeideh, 2009).

Classroom Status: The high number of students in the classroom depletes a lot of effort and time from teacher regarding managing and controlling student access to computers; and Lack of appropriate educational programs. General principles of educational curricula and administrative systems: The teacher may conflict with the lack of clear instructions on the legitimacy of using some programs and applications inside or outside classroom, most curricula are still without clearly planned activities to integrate ICT, which exposes the teacher to administrative accountability when not committed to implementing the curriculum directions and activities, and this also leads to another obstacle which is the lack of time that can be allocated to preparing, reviewing and following up on the implementation of learning activities that integrate ICT.

The second -order obstacles are internal to teachers, including teachers' willingness, beliefs, competences, and established classroom practices (Xia Liu & Jenny Pange, 2015). This model has been cited by many researchers (Chen et al. 2012; Goktas et al. 2013; Xia Liu & Jenny Pange, 2015), it includes: teacher's attitudes and their educational convictions (Plumb and Kautz, 2016), where many of them express their reservations on the widespread use of ICT in education for several reasons, including that its use supports isolationism and individualism among learners, and it represents a threat to traditional practices related to childhood, including free play (Lindahl and Folkesson, 2012).

Further, young children do not possess the mature social, motor and cognitive skills that qualify them to use the IT. Some teachers also tend to traditional teaching styles because of the burden of time, effort and commitment represented by the use of IT, lack of knowledge and skills on the proper integration of ICT in education (Edwards, 2005); lack of training; lack of self-confidence of teachers in their ability to use technology in education. Afterward, (Tsai & Chai, 2012) suggested the third - order obstacles that is design thinking, which was defined as "the capacity to seek to change and enhance the current situation and create what is desired. However, despite all these obstacles, teachers who have received pre-service and in-service training ICT and their daily use of ICT are likely the most aware of these obstacles.

2.2. Obstacles to Integrate ICT in Kindergartens' Teaching in Palestine

Previous studies on obstacles to ICT integration in teaching is mainly focused on primary, secondary, and higher education stages (Xia Liu & Jenny Pange, 2015; Murad, 2014). Little research has been carried out in kindergarten stage in this field (Blackwell et al. 2013; Nikolopoulou and Gialamas 2013), particularly from the perspective of kindergarten headmistresses. Kindergartens are part of general education, and considered as one of the most critical and important stages in this age group. Thus, the obstacles faced by public education, which were discussed above, are very similar to those faced by kindergartens and differ from country to country and from one environment to another.

On another hand, according to researcher's work and experience for a long time in the Palestinian MoE as head of the general education, which involves supervising and follow up the kindergarten's technically, administratively and environmentally, emphasizes many obstacles, which largely agree with those mentioned in the previous studies, the most prominent of these are: some teachers were not convinced of the importance of using ICT in teaching; lack of proper competencies for using ICT in education, which leads some teachers to mistake the use; some teachers fear that the use of ICT may threaten their work because they think it will replace them one day; inability to access some of the programs necessary for the educational process; lack of awareness of the importance of ICT in education and the belief that it can occupy the mind of the student towards matters other than education; lack of integrated government plan to adopt the idea of ICT in educational practices; inadequate financial support from the responsible authorities to support ICT in educational practices.

However, the current researcher adopted two groups of obstacles (namely, first - order Obstacles and second - order obstacles) that facing the ICT integration in kindergarten education based on the studies of [Wood et al. 2008; Ihmeideh 2009; Nikolopoulou and Gialamas 2013; Xia Liu & Jenny Pange, 2015, Murad, 2014).

2.3. ICT and Education in Palestine

The Palestinian National Authority governs only disintegrate and limited parts of the land of Palestine, which led to throttle of internal and external commercial activities alike, the process of accessing services, and the ability to fulfill comprehensive infrastructure development. In these difficult environmental conditions represented by the occupation in the first place, ICT has become a means of connecting the Palestinian regions together with the world, it is the fastest, most efficient, and sometimes the only, means of transportation for the exchange of information and products between producers with each other and between producers and consumers, and all parties related to IT. (Al Sartwi, 2001). Thus, the availability of a modern communication network at a competitive cost and quality has become a basic requirement for modern economies based on the information revolution. Palestine entered the world of ICT after the world set out in this direction. After the emergence of the Palestinian National Authority made a bold decision to build and allocate the telecommunications sector. In the year 1996 Palestinian investors from inside and outside the country with an investment of \$ 65 million to found the Palestinian telecommunications company that built an advanced digital network in the West Bank and Gaza Strip (Palestinian Telecommunications Company, 1996). This work was a qualitative and quantitative shift for the use of the internet and communication and putting Palestine on the start of the road to technical construction.

Based on widespread literature, ICT advocates in Palestine, think that ICT can play a pivotal role in enabling the educational system to better meet the developmental needs of the Palestinian society (Wahbeh, 2006). Therefore, the Palestinian Ministry of Education and Higher Education (MoEHE) took measures to ensure the accessibility of ICT in schools through building more computer labs, more Internet connection, introducing new technology curriculum which addresses many ICT topics throughout grades 5 to 10, and introducing English from grade 1 in hopes of facilitating ICT teaching and learning (MoEHE, 2017). According to the ministry of education (MOE) reports, 40 % of the schools (2109) house computer labs (13 computers in each lab), while a small percentage of these labs are connected to the Internet.

The new technology curriculum developed by the Palestinian Curriculum Development Center starting in 2000 culminated in the creation of separate subject textbooks for grades 5 to 10 to be taught for one to two classes (45 90 minutes) per week depending on the level (Wahbeh, 2003). 20% of the technology curriculum subjects is concerned with general computer skills (i.e., how to use Windows and office software), while programming skills (i.e., C+, Visual Basic, algorithms, Internet, networking, multimedia, website design, database design and computer maintenance) are all planned for higher levels starting from grade 11 to 12 through similar text books yet to be published (Wahbi, 2006).

Unfortunately, there is no integrated plan for the implementation of ICT within the Palestinian General Education system. It is expected that the number of computers in the school will increase rapidly due to their low costs and the support of the local and the international community to the ICT sector. Taking into consideration all these factors, together with the high costs of the Internet connection, it is now becoming vital to consider the social and the economic consequences of the rapid integration of ICT in the Palestinian education sector and its effect on educational, social and gender inequalities (Somekh, 2004).

Palestine is an occupied territory encountering a several of issues related with the ongoing Palestinian - (Israeli) conflict, involving poverty, malnutrition, ill health, and trauma (Suliman Mleahat (2018)). This negatively effects on children's education and well-being, particularly in Gaza where intermittent conflict hold on. It was not until 1994, after Oslo accords that Palestinians assumed responsibility for their education, health, and welfare. In the education sector, the focus has been on school building and curriculum development to ensure that children access quality primary and secondary education.

Ensuring access to quality preschool education—two years of kindergarten education is one of the primary challenges encountering the Palestinian MoE. Today, almost 140,000 children attend 1,700 kindergartens—representing over 40% of the children in this age group (MoE, 2019). The quality of the kindergarten is inadequate, as most teachers lack training and are not sufficiently qualified. Agencies as American Near East Refugee Aid (ANERA), Save the Children, and UNICEF have been helping the sector to improve access and quality through the provision of equipment, renovation, teacher training, mentorship, and work with children and their parents (Suliman Mleahat, 2018).

For its part, ANERA has developed over 160 kindergartens and trained 600 teachers over the past 6 years. It has reached nearly 30,000 children and 15,000 mothers, making ANERA’s program the largest in the country. Educational policy makers are now more aware of the importance of pre-school education, and they achieved some excellent developments in this sector such as in January 2017 supported by UNICEF, it was launch of a national early childhood development strategy with three national ministries, the MoE and supported by ANERA launched of a Kindergarten curriculum framework, which will inform the development of the first national kindergarten curriculum, commencement of work on the national kindergarten curriculum with support from ANERA and Save the children, and expansion of one kindergarten class per ministry school in marginalized communities—94 kindergarten classes have been completed.

On the level of regional initiatives, in 2016, the Arab Network for Early Childhood Care and Development (ANECD) was launched in Jordan. Comprising childhood professionals and organizations from across the Arab region, the network will act as hub for information sharing, capacity building, and joint regional initiatives. This is a very important development, as gross kindergarten enrollment rates stand at 25% in the Arab region (EFA GMR, 2015, UNESCO).

3.0. Literature Review

The introduction and integration of ICT in kindergarten teaching has long been debated by researchers (Ihmeideh 2009; Blackwell et al. 2014; Bingimlas, 2009; Blackwell, et al., 2013). Many researchers support the integration of ICTs in kindergarten teaching, because they argued that ICTs integration in teaching was beneficial for children’s learning and development. Many researchers support the integration of ICTs in kindergarten teaching, because they argued that ICT integration in teaching was beneficial for children’s learning and development (Al turkey, 2010; Chen et al., 2012).

These advantages are reflected in many aspects, including language and emergent literacy, mathematical thinking, creativity, problem solving, personality, communication and collaboration, as well as positive attitudes toward learning (Umayahara 2014; Evangelopoulou 2014). On the other hand, there are also some researchers discouraging the integration of ICT in early childhood and Kindergarten, particularly for the very young children. The most mentioned concerns from these researchers refer to children’s health, harmful digital content, children’s privacy, as well as children’s isolation from the society and real-world (Umayahara 2014). The American Academy of Pediatrics (2013) even recommended that no screen time was provided to the children under age 2, and no more than 2 hours to older children.

Hence, as the rapid evolutions of ICT and its omnipresence in young children’s life, many researchers have realized that the current issue should not be concentrated on whether to integrate ICT into kindergarten teaching, rather on how to suitably and effectively integrate it into teaching to enhance children’s learning and development (Nikolopoulou & Gialamas 2013). For this objective, the national association for young children education and Fred Rogers Center for early learning and children’s media (2010) issued one joint position statement, recommending that early childhood and kindergarten teachers needed to utilize modern technologies and interactive media “intentionally” and “appropriately”. Also, other researchers suggested that early childhood teachers should use ICT in an “attentive, thorough and knowledgeable” way (Evangelopoulou 2014).

Only then could the potential risks of integrating ICT in early childhood teaching and Kindergartens be reduced or removed, and at the same time maximized the benefits of ICT.

The results of (Murad, 2014) study show the existence of some obstacles, while some of them are related to the non-availability of equipment or insufficient infrastructure, some are related to poor training on utilizing ICTs in teaching, also the results o show that the majority teachers sufficiently used the basic applications and software of ICTs, but their use of it for educational purposes was low.(Al-Naabi, 2010) indicates other obstacles related to the lack of adequate equipment and infrastructure to support the use of technology in schools, and lack of computer equipment comparison students numbers.

In his study (Wahbeh, 2006), mentioned some obstacles, such the prevailing situation in kindergarten environment, where classrooms are crowded with children, intensive study schedules, the intensity of curricula in the curricula, which leads to a lack of sufficient time for teachers to use ICTs in teaching. There are also some obstacles related to the teachers themselves, as the lack of their experience in how to use the means of ICTs, their attitudes towards ICTs, as many of them are conservative (Schoepp, 2005), or fearful as they see dealing with computer is difficult and requires more time and effort than traditional educational methods require, which in turn affects their acceptance and use of ICTs (Xia Liu & Jenny Pange, 2015).

A study (Ali Ahmad, 2019) "the reality of employing computer in teaching and Learning in kindergartens in Salfet Governorate in Palestine from the point view of principals and teachers that there is a positive attitude towards using computer in kindergarten teaching, also that there are many obstacles encounter the use of computer in in kindergarten such as lack of computers, and lack of training.

The first-order obstacles, refers to the characteristics of ICT (Butler & Sellbom 2002), which includes: lack of equipment and resources (Bingimlas 2009; Alwani & Soomro 2010; Chen et al. 2012; Khan et al. 2012; Goktas et al. 2013), lack of time (Al-Senaidi et al. 2009; Bingimlas 2009; Alwani and Soomro 2010; Chen et al. 2012; Khan et al. 2012; Murad, 2014), lack of training (Schoepp 2005; Bingimlas 2009; Khan et al. 2012; Goktas et al. 2013; Wahbeh, 2006), lack of support (technical, instructional, funding and administrative) (Al-Senaidi et al. 2009; Bingimlas; 2009; Alwani & Soomro 2010; Khan et al. 2012; Goktas et al. 2013; Xia Liu & Jenny Pange, 2015), lack of support from parent or community (Xia Liu & Jenny Pange, 2015), lack of space (Alwani & Soomro 2010;), curriculum constraint (Chen et al. 2012), public examinations (Becta 2004), and wider economic, political, social & cultural barriers (Khan et al. 2012).

The second-order obstacles includes teachers' negative willingness and attitudes (Bingimlas 2009; Chen et al. 2012; Khan et al. 2012), teachers' lack of confidence (Becta 2004; Bingimlas 2009), teachers' lack of knowledge and skills (Blackwell et al., 2014; Bingimlas 2009; Khan et al. 2012), and teachers' established beliefs and practices of teaching (Murad 2014; Blackwell et al., 2013; Xia Liu & Jenny Pange, 2015).

4.0. Research Methodology

4.1. Research Instrument

The research instrument of this study was a self-designed questionnaire by the researcher based on several previous studies [(Ihmeideh 2009); (Al-Senaidi et al. 2009); (Bingimlas 2009); (Alwani & Soomro 2010); (Khan et al. 2012); (Chen et al. 2012); (Goktas et al. 2013); (Nikolopoulou & Gialamas 2013) ; (Xia Liu & Jenny Pange, 2015); (Murad, 2014)]. The questionnaire comprises from 4 main sections. The First section: basic personal information of kindergarten headmistresses which involves [(age, educational level, teaching years, pre-service training on ICT (Yes/ No), in-service training on ICT (Yes/No), and ICT use in daily life (Yes/No)].

The second section: first – order obstacles, this section included (17) statements which consists of 3 main dimensions: the 1st dimension related to the lack of resources and equipment included 5 items (1- 5), the 2nd dimension related to lack of support (technical, pedagogical, administrative, and parental and society) included 6 (6- 11) items, the 3rd dimension related to Kindergarten environment included 6 items (12- 17). The third section: second – order Obstacles including 2 dimensions, the 1st dimension related to lack of (skills, interests, teacher's positive attitudes, benefit, and enthusiasm) involved 4 items (18 -21), the 2nd dimension related to Individual and cultural factors involved 5 items (22- 26), the last 4th dimension included one statement related to the whole obstacles. The participants were requested to choose their perceptions of these statements on a 4-point Likert scale 1 = Strongly Agree, 2 = Agree, 3 = Disagree, 4 = Strongly Disagree.

4.2. Validity and Reliability of the Research Tool:

The questionnaire was presented to a group of arbitrators specialized in the fields of administration, education and language at Palestinian universities to ensure the questionnaire content and its proper formulation and representation of the topics accurately. The statements that the arbitrators agreed on not being proper to the study subjects and its dimensions were modified, and the statements that need modification. To determine the questionnaire's internal consistency, the Cronbach's Alpha was calculated, (0.88), distributed according to the fields of study, as shown in Table (1).

Table 1: Cronbach's Alpha values

No.	Dimension	No. of Items	Cronbach's α
1	First - Order Obstacles	17	0.86
2	Second – order obstacles	09	0.90
3	Whole obstacles	01	0.88
Overall Cronbach's α			0.88

The descriptive analytical method was used due to its relevance to the research nature. The researcher used SPSS to manage and analyze the data. More specifically, for the analysis of demographic information of kindergarten headmistresses and the main obstacles they encountered. Moreover, T - test were conducted to examine the differences between the averages of the respondent's on the obstacles to integrating attributing to (Pre - service training on ICT, in - service training on ICT, and daily use of ICT).

4.3. Population and Sample

The study population consists of all kindergarten headmistresses in Salfeet Governorate / Palestine, which are (56) kindergarten. Given that, the research population is relatively small, so the sample will be the population (56). A total of (56) questionnaires were distributed by e-mail due to the repercussions of Coronavirus disease (COVID - 19). All questionnaires were retrieved from kindergarten headmistresses, 4 of them were excluded due to their incompleteness, and thus the research sample subject to analysis becomes (52). The demographic information of the participating headmistresses are illustrates in **Table 2**.

Table 2: participants’ demographic information. (N = 52)

Variables	Frequen cy	Percentage (%)
Age		
21- less than 30 years	11	21.15
30 – less than 40 years	19	36.54
40 – less than 50 years	12	23.08
50 years or more	10	19.23
Educational level		
Diploma	09	17.31
Bachelor Degree	30	57.69
Higher Education	13	25.00
Teaching years		
1 – less than 10 years	14	26.92
10 – less than 20 years	27	51.92
20 years or more	11	21.16
Pre – Service training on ICT		
Yes	14	26.92
No	38	73.08
In – Service training on ICT		
Yes	17	32.70
No	35	67.30
ICT use in daily life		
Yes	43	82.70
No	09	17.30
Total	52	100 %

Table 1 presented the demographic characteristics of participating headmistresses. It can be seen that the majority of them (80.77 %) were aged 21 – < 50 years. With regard to the educational level, (82.69 %) of the headmistresses were bachelor degree and higher education holders. And most of them (78.84%) had less than 20 years of working experience. The percentage of headmistresses who attended pre-service training on ICT was very low, with only (26.92 %). Also, only (32.70 %) of them attended in-service training on ICTs in the last 2 years. The ratio of headmistresses who used ICT in their daily life was very high, with (82.70 %), this indicate that most of respondents use the World Wide Web (the Internet), and this confirms the awareness of them the importance of the Internet and its uses, in addition to the availability of wired and wireless Internet networks in Palestine, whether in the kindergartens’ that they work in, or outside.

5. Results

To answer the first research question (RQ1): What are the main obstacles to ICT integration in Palestinian kindergartens from the point view of Kindergarten's headmistresses in Salfeet governorate, the mean and standard deviations for each of these obstacles were calculated Main barriers to ICT integration in teaching of the early childhood teachers.

The results in table (2) indicated that the main obstacles from the first - order to ICT integration in Palestinian kindergartens from the point view of Kindergarten's headmistresses in Salfeet governorate are: lack of support infrastructure to integrate ICT; lack of training courses on how to integrate ICT in education; lack of teacher’s support; and lack of time to use ICT in educational practices as it averaged (3.97, 3.9, 3.38, 3.34) respectively. While the main obstacles form the second – order obstacles are: Lack of teacher’s interest; lack of experience among kindergarten teachers in using computers and modern technology in education; and no obvious benefits to use ICT as it averaged (3.18, 3.02, 2.87) respectively (Table 3).

The whole obstacles is also very high as it is averaged 4.03. It is evident that there exist another obstacles, such as lack of computers update/maintenance (2.56), lack of content in Arabic language (2.33), lack of administrative support (2.58), and Lack of teachers' skills (2.74).

Table 3. Means (M) and Standard Deviations (SD) for obstacles to integrate ICT in Kindergarten Education

First – Order Obstacles			
No.	M	SD	
1	Lack of laptops/notebooks	2.18	1.073
2	Computers lacking update/maintenance	2.56	0.718
3	Lack of content/material	1.95	1.025
4	Lack of content in Arabic language	2.33	0.772
5	Lack of support infrastructure to integrate ICT	3.97	1.04
Second – order obstacles			
6	Lack of technical support	2.62	1.067
7	Lack of pedagogical support	2.69	1.004
8	Lack of teacher's support	3.38	0.847
9	Lack of support of parents and community	3.08	0.984
10	Lack of administrative support	2.85	1.065
11	Lack of pedagogical models	2.21	0.923
Second – order obstacles			
12	Pressure caused by exams and tests	2.69	0.950
13	Lack of proper classroom environment in computer lab.	3.17	1.30
14	Lack of time to use ICT in educational practices.	3.34	1.24
15	Crowded in the number of students in the classroom.	2.84	1.32
16	Computer supervisors are not cooperating	2.65	1.16
17	Lack of training courses on how to integrate ICT in education	3.9	1.09
Second – order obstacles			
18	Lack of teachers' skills	2.74	0.938
19	Lack of teachers' interest	3.18	0.854
20	No obvious benefits to use ICT	2.87	0.923
21	Lack of enthusiasm to use ICTs in education	2.66	1.13
Second – order obstacles			
22	Fear of Internet content and information that contradict with religion beliefs and prevailing customs	2.80	1.20
23	Lack of knowledge in Arab and foreign educational websites that serve the curriculums	2.60	1.20
24	Lack of experience among kindergarten teachers in using computers and modern technology in education	3.02	1.72
25	Feeling that use of ICTs will losing the educational process its humanity nature.	2.52	1.20
26	The desire to resist change	2.82	1.18
Whole obstacles			
27	Over all, it is difficult to integrate ICT in kindergarten teaching.	4.3	1.22

To answer the Second research question (RQ2): Do obstacles of integrating ICT in kindergartens' education from headmistresses' view point vary attributed to the variables (Pre - service training on ICT, in -

service training on ICT, and daily use of ICT), t-test was conducted to examine the differences between arithmetic averages. Tables (4), (5), and (6), illustrates the results.

Pre – Service Training on ICT

Table 4. Results of the T-test to examine the differences between the averages attributing to the pre-service training variable.

Variable	No.	M	SD	Averages Difference	t	Sig.level
Pre- service training on ICT						
Yes	14	4.18	0.550	0.07	2.030	0.004(*)
No	38	4.11	0.549			

(*) **Sig level ($\alpha \leq 0.05$)**

The results in table (3) indicates that the value of (t) was (**2.030**), at significance level of (**0.004**) less than 0.05, which is statistically significant. This indicating that there is a significant differences between the perceptions of kindergarten's headmistresses on obstacles to integrate ICT in kindergarten education practices, and pre - service training in favor of (Yes), with mean (**4.18**), and standard deviation (**0.550**). This points out that the obstacles of integrating ICT in kindergartens' teaching from headmistresses' viewpoint differ attributed to the variable in - service training on ICT.This finding means that the kindergartens' headmistresses who received pre-service training on ICT had more probability to perceive first - order and second - order obstacles than those who did not received pre- service training on ICT, and they are more prepared to integrate ICT into educational practices in kindergarten.

In – Service Training on ICT

Table 5. Results of the T-test to examine the differences between the averages attributing to the in -service training variable.

Variable	No.	M	SD	Averages Difference	T	Sig.level
In - service training on ICT						
Yes		3.88	0.560	0.34	2.148	0.000(*)
No		3.54	0.629			

(*) **Sig level ($\alpha \leq 0.05$)**

The findings in table (4) shows that there is a difference in the average respondent's (**Yes / No**) related to their in-service training, as the value of this difference has reached (0.34) in favor of yes, also the value of t was (**2.148**), (**Sig. = 0.004**) which is less than (**0.05**).This indicates that the obstacles of integrating ICT in kindergartens' teaching from headmistresses' viewpoint differ attributed to the variable in - service training on ICT.These results also confirm that the in-service training recipients are more aware of obstacles' nature preventing the integration of ICT in kindergartens' education.

Daily use of ICT

Table (6). Results of the T-test to examine the differences between the averages attributing to the daily use of ICT.

Variable	No.	M	SD	Averages Difference	T	Sig.level
Daily use of ICT						
Yes		4.21	0.654	0.02	3.285	0.000(*)
No		4.19	0.624			

(*) **Sig level ($\alpha \leq 0.05$)**

Table (5) indicates that the averages difference between (Yes/No) in daily use of ICT has reached (0.07) in favor of Yes, the value of (T = 2.030), (Sig = 0.000) less than 0.05, which is a statistically significant difference, this means that the obstacles of integrating ICT in kindergartens' teaching from headmistresses' viewpoint differ attributed to the variable daily use of ICT? Finally, this finding from kindergartens' headmistresses' point of view means that the teachers who use ICT in their daily life had more probability to perceive first and second order obstacles' than those who did not use ICT in their daily life.

Conclusions and Discussions

The purpose of this research was to explore and analyze the obstacles to ICT integration in kindergarten teaching from a perspective of Palestinian kindergartens' headmistresses in Salfet governorate, to which was not paid more attention by previous Palestinian researchers. A total of 2 research questions were looked at: the first

question was what are the main obstacles to ICT integration in teaching perceived by Palestinian kindergartens' headmistresses in Salfeet governorate; the second question how Palestinian kindergartens' headmistresses' demographic information effect their perceptions of obstacles to ICT integration in kindergarten teaching. In order to answer these questions, a self-designed questionnaire was adopted as the research tool, and was distributed into 56 kindergartens' located in Salfeet governorate. Finally, 52 questionnaires were selected for further analysis.

Through recognizing the main obstacles and analyzing the effecting factors of perceived obstacles by kindergarten's headmistresses' is useful to effectually dissolve these obstacles, and moreover, improve the level of Palestinian kindergartens teachers' in integrating ICT in their teaching practices. Furthermore, this research may as well supply some implications for the global trend of ICT introduction and integration in the education field, particularly for the developing countries. The relationship between obstacles to ICT integration in kindergarten's teaching and general education is complex and not obvious, and still a source of controversy between practitioners and researchers, some of them encourage the integration of information and communication technology in education, while others oppose it. However, there is a consensus that first and second - order and other obstacles should be addressed that hinder the successful ICT integration in the kindergartens' teaching practices.

Recommendations

Based on research results and conclusions above - mentioned, the following strategies are recommended:

1. An adequate ICT-related equipment and support infrastructure should be provided to the kindergartens education as well as pedagogical support in how to integrate ICT in teaching practices.
2. The pre - service and in - service training kindergartens' teachers on specialized courses that involves integrating ICT for teaching and learning purposes is needed.
3. Reconsidering the courses and curriculums taught to kindergarten's students, and restructuring them in a manner commensurate with the time required to integrate ICT in teaching and learning processes, especially after the world of education has been affected by the COVID-19 pandemic.
4. Training of students and teachers in the use of ICT in kindergartens' education by providing it with the necessary educational equipment and software.

Limitations and future research

As any other researches, there are some limitations to the current research: **first**; variables selection, 26 obstacles to ICT integration in kindergarten education were selected by the researcher, many other obstacles were not included, like: curriculum constraint, political, cultural, and economical factors, etc.; **second**, sample selection, only 52 kindergartens' headmistresses participated in this research, this will impact the findings' generalization. Third; the study were conducted on private kindergartens in salfeet governorate only.

Thus, a number of study topics can be explored in future research. They include

- (1) Future studies can involve more obstacles, larger, and more diverse kindergartens and samples to verify the findings of this research.
- (2) The mixed research method (quantitative and qualitative approaches) is also recommended so as to obtain a better understanding of the obstacles.
- (3) What are other practitioners' (such as, teachers, educational supervisors ...etc.) perceptions of obstacles to ICT integration in kindergarten's education?
- (4) Are there some differences on perceived obstacles to integrate ICT in kindergarten's' teaching among different regions, cities and kindergartens in Palestine?
- (5) What is the particularity of the obstacles faced by kindergartens' in Palestine compared with other countries?

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