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The Availability and Use of Information and Communication Technology at Gifted Primary Schools in the Sudan

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This study explored the use of information and communication technology (ICT) in gifted primary schools from the perspective of teachers. Both availability and use of ICT in those schools were examined. Participants were 56 teachers (51.8% males and 48.2% females). Data was collected using a questionnaire developed and validated by the researchers. Results reported tools of ICT that are always, sometimes and never available at schools. They also reported tools of ICT that are always, sometimes and never used. No correlation was found between use of ITC on one hand and age, years of experience and number of courses in ICT on the other hand. Similarly, no significant differences were found in the teachers' use of ICT by qualifications (the bachelor's degree, the Postgraduate Diploma and the Master degree) and gender. However, there were significant differences (a=0.05) by schools (Abdoon Hamad, Mahjoub Obaid and Mohammed Fouad) in favor of Abdoon Hamad School compared with Mohammed Fouad School. Finally, a positive correlation (a=0.01) was found between the availability and use of ICT. Implications based on the results are offered.

Key words: *Information and communication technology (ICT), the gifted, teachers of the gifted, gifted schools, the elementary school, the intermediate school, Sudan.*

Introduction

In the last years of the twentieth century there have been astounding innovations in information and communication technology (thereafter ICT). These innovations have impacted all life spheres, including education. They have been introduced by education experts and policy makers to educational institutes from the kindergarten to the university. Innovations of ICT have made learning environments more interactive and richer in activities that support learning tremendously. They also have taken learning to virtual realms through which learners can increase their knowledge and enhance their skills autonomously and continually.

Gifted education is among the fields where ICT innovations have been put into practice. The gifted with their distinguished abilities are more able to deal with the changes induced by the information and technology revolution. They can make the best use of these innovations to learn independently and satisfy their craving for knowledge. What increases the impact of innovative technologies on learning are their unique characteristics of interactivity, individuality, diversity, globality, integrality, and accessibility (Housein, 2003). Periathiruvadi and Rinn (2012) suggest that technology does not only provide teachers with instructional tools for gifted students, but it also provides an outlet for creativity for the most brilliant minds in the world, Moreover, many experts in gifted & talented education stated the importance of ICT for develop high thinking skills in gifted students (Ali & Alrayes, 2019; Kaur & Meenu, 2013; Kontostavlou & Drigas, 2019; Zimlich, 2015).

ICT is defined as the technology (hardware and software) used for storing, retrieving, sharing and disseminating information. It also refers to the production of verbal, pictorial, text and digital electronic media through the integration between computers and systems of visual communications (Al-Hamran & Al-Ajlouni, 2009; Al-Jarah & Al-Ajlouni, 2012; Al-Ajlouni, 2004). Azzazi (2010) and Al-Naebi (2010) define it as the processes used for creating, transferring, storing, showing and managing information through the use of recent digital technologies, including the computer with its accessories (e.g., the printer, the scanner, digital cams, multimedia, CD-Roms) and the internet with its electronic services and databases (e.g., e-books, e-libraries, databases, encyclopedias, periodicals, educational sites, the e-mail, the video, data shows, the TV, telephones and mobiles, audio recording devices).

Al-Ameri and Anaqrah (2011: 85-86) identified four stages for the impact of ICT on e-learning. The first (prior to 1983) was the period of traditional instruction prior to the spreading of computers. ICT in that period was limited to some DOS-based references and 5.25-inch magnetic disks. Communication between the teacher and the student was implemented in the classroom according to a timetable. The second stage (from 1984 to 19993) was the period of the video disk and multimedia. That stage was characterized by the use of operating systems with graphic interfaces, e.g., Windows 3.1, Macintosh and CDs as tools for supporting instruction. The third stage (from 1993 to 2000) was the period that

witnessed the emergence of the internet, the intranet, the interactive e-mail, audio/video conferences, video showing software, and LMS systems for managing learning. The final stage (from 2001 up to now) witnessed the advent of the second generation of the World Wide Web. Creation of sites on the web has become more advanced with better characteristics in terms of speed and intensity of content. This stage has also witnessed the emergence of LCMS systems for managing the content of learning, virtual learning environments and wireless connectivity.

Surveying the studies that analyzed the development of ICT in schools in developed and developing countries, Al-Hamran and Al-Ajlouni (2009: 257) identified four techniques educational institutions have used in adopting ICT. In the first of these techniques, schools obtain computers and their software by purchasing or donation. Here teachers begin to discover the potentials and results of using ICT in managing schools and add ICT to curricular activities. The second technique is application where teachers and personnel begin to use ICT for assignments performed in school administration and in curricula. In this technique, schools integrate specific tools and software of ICT in different curricula. The third technique is the schoolwide integration of ICT. Schools integrate ICT in curricula and use computer-based techniques in classrooms, labs and offices. Teachers discover new ways of dealing with ICT in a way that enhances their professional roles and experiences. In the fourth technique, the transformation technique, schools are re-organized creatively through the use of ICT, so ICT becomes part of the daily routine and professional practice. Curricula become learner-centered and instructional material is integrated with reality.

Specialized references have identified ICT tools and software that are used the gifted. For instance, Vantassel-Baska (2007) identified the ICT options that enhance the needs and characteristics of the gifted. These include simulations, web quests, virtual field trips, ask-the-expert, telementoring, and distance learning. She also identified the equipment used with gifted children, e.g., laptops and specialized laboratory tolls. She also suggested that technology help teachers and parents of the gifted via electronic mailing lists, discussion boards and chat rooms. Lall (2011) added internet-based learning, distant learning and individualized learning via specialized learning packages, interactive videos, instructional games, digital learning material, e-learning and mobile-based learning.

Al-Beyalawi and Ahmed (2010) added the following tools and programs: synchronous and asynchronous electronic classrooms, diskless networks, multimedia networks, visual presenters, electronic classrooms managed by the Top 2000 program, and artificial reality with its tools, e.g., motion sensing, head-mounted display, multi-display systems, gloves, mounted equipment. There are also technologies for mathematics such as TI84 and TI89 calculators and Voyage 2000 and computerized algebra programs such as Maple, Mathemateca, Matlab and Derive. There are also the internet services and tools, e.g., Webs, Mailing Lists, the E-mail, search sites, inquiry projects via the internet, File Transfer Protocol, Telnet services, the discussion service Talk, Chat, Usenet, Electronic Magazines,

Radio Telecast via the internet, Online Service Providers, Telephone over the Internet, and Video Conferencing on the Internet.

Recent literature on the use of ICT in the education of the gifted reveals paucity of research in this area. Uzunboylu et al. (2019) surveyed studies on the use of ICT with the gifted in indexed peer-reviewed journals from 1990 to 2019 using content and citation analysis. A total of 240 documents were found. After revision, 40 documents were excluded for being irrelevant to the research purpose. About 70% of researches were found to be published in journals that are not specialized in the education of the gifted. About 43% of the researches were in education and educational research. The researchers noted that documents and citations related to the use of ICT in the education of the gifted had been increasing since 2005.

Paucity of research in the area was also reported by the study conducted by Periathiruvadi and Rinn (2012) who surveyed the articles published from 2000 to 2012. They found only 23 articles, nine of which were in specialized journals. Studies conducted on the use of ICT with the gifted are therefore quite fewer than studies on other aspects in the education of the gifted. Those studies encompassed elementary, intermediate and secondary school students and teachers. Major research lines in those studies were attitudes towards ICT, computer-assisted instruction and the use of ICT to meet the social and emotional need of gifted students. Those studies covered several aspects, (1) The use of ICT in evaluating gifted students, including the identification of the gifted, the ongoing evaluation of gifted students' learning and evaluation of gifted programs, (2) school curricula and planning instruction based on technology, (3) technology-based programming, (4) ICT in various learning environments, and (5) technology-based professional development. The researchers then concluded from their results that there is a need for further experimental research on the use of ITC and evaluation of their effectiveness in educating gifted students.

The study by Torkar et al. (2018) offered an analytical overview of science and technology curricula from the perspective of the comprehensive curriculum adopted in Slovenia for the education of gifted students in the Basic Education stage. Results revealed weak application of recommendations concerning the use of ICT in educating gifted children. It was also found that electives in science and technology were underrepresented in students' choices of elective subjects.

Surveying international recent research on the use of ICT in gifted education, the authors of the present study identified a number of studies on various aspect of the use of ICT with gifted students. These studies explored the attitudes of gifted students' teachers towards ICT (Calvert, 2012; Fanning, 2011; Holland, 2004; Shaunessy, 2007; Shaunessy, 2005; Zimlich, 2012), the professional development of gifted students' teachers in ICT (Besnoy, 2007; Little & Housand, 2011; Eriksson, Weber & Kirsch, 2012; Urquhart, 2010), the role of ICT in enhancing gifted students' motivation (Housand & Housand, 2012; Siegle, 2012) and the use

of ICT to support the social aspects of gifted students (Rambe, 2012). However, most studies were about educating gifted students with ICT-based techniques (Belcastro, 2004; Besnoy, 2006; Besnoy, Dantzler & Siders, 2012; Cross, 2004; Dieker, Grillo & Ramlakhan, 2012; Dixon, Cassady, Cross & Williams, 2005; Eriksson, 2012; Gadanidis, Hughes & Cordy, 2011; Morgan, 1993; Mulrine, 2007; Nugent, 2001; Olszewski-Kubilius & Corwith, 2010; Portela & Fernandez, 2018; Potts, 2019; Riska, 2010; Schroth, Helfer & Dammers, 2009; Siegle, 2011; Siegle, 2004; Swicord, 2010; Varlamova & Rubtcova, 2018; Wallace, 2005). No studies exploring the availability and use of ICT in gifted schools were found. This provides a rationale for conducting the present study.

A survey of Arab literature also revealed paucity of research on ICT. Of a total number of 600 studies published in Arab journals from 1947 to 2007 (Bakheit, 2009, 2011), only two studies were on ICT (Al-Hazemi, 1995; Saad, 2006). The researchers also found other few studies in the research databases of Dar Almandumah, Dar El-Marefah, Dar Al-Manhal, and Shamaa from 2007 to 2020 (e.g., Hadad, 2018; Sarraya, 2012; Al-Ghamas, 2019; Al-Qahtani, 2011; Al-Qatani, 2011). Some other studies were presented in conferences (Abu-Zaqiah, 2013; Jaradi, 2009; Al-Ajami, 2006; Al-Adel, 2009; Salama, 2010; Sayed, 2003; Ashatl & Mouriah, 2006; Shenudah, 2006; Mazzi, 2003; Mahmoud, 2004; Najuib, 2003). There are also MA and PH.D dissertations (Al-Eneizi, 2011; Al-Qahtani, 2006, Khasawnah, 2010; Arrefai, 2013, Assidat, (2019).

In the period from 2010 to 2019, there was a noticeable shift in Arab research on the use of ICT with gifted students. Several studies were conducted to explore the effect of ICT on the achievement of gifted students and on other cognitive and emotional variables. For instance, Bedaiwi (2010) explored the effect of e-learning the attitudes of gifted students and their teachers. Al-Hadabi and Al-Jaji (2011) examined the effectiveness of training on robot programming in enhancing gifted students' creative and scientific thinking skills. Al-Hamad (2012) studied the effect of designing electronic activities according to multiple intelligences on achievement and satisfaction with learning. Noubi (2012) investigated the effect of the design of electronic activities on gifted students' achievement. Al-Naghi (2013) evaluated the effectiveness of a training program based on teaching strategies and electronic portfolio on kindergarten female teachers' identification of gifted children. Abdulaziz (2015) studied the design of electronic participation in the light of cognitive apprenticeship and its effect on production of creative projects. Mohammed (2016) explored the effectiveness of an enrichment science program based on blogs in enhancing self-learning electronic learning and visual thinking. Mohammed examined the effect of using the interactive classroom in teaching geometry on achievement, visual thinking skills and emotional satisfaction. ?? (2016) studied how fixed and flexible supports in a learning environment based on Google applications affected creative self-efficacy and self-regulated learning. Azzekri and Ashebel (2018) studied the effectiveness of designed digital modules in mathematics in enhancing mathematical creative abilities. Al-Ghamdi (2019) explored the effect of using the 3D pen in

scientific research-based learning on gifted female students' involvement in non-curricular activities. Several other studies were conducted to identify obstacles of e-learning among gifted students (e.g., Alyamani, 2014) and obstacles of e-learning from teachers' perspective (Asibai, 2014).

There are four studies on the use of ICT in gifted schools (Adam, 2013; Assalami, 2014; Al-Shehri, 2019; Al-Yahya, 2014). Assalami (2014) explored the use of ICT in enhancing the skills of gifted students in Jeddah. The researcher also explored the obstacles of enhancing gifted students' skills from the perspective of teachers, supervisors and directors of gifted schools. The mean of ICT use in schools as reported by participants was average. The reported mean of the importance of using ICT in educating gifted students was very high. Furthermore, the reported mean of the difficulty of using ICT for enhancing the skills of gifted students was average. Recommendations based on findings were increasing the use of ICT in the education of gifted students and finding solutions for difficulties that deter the use of ICS in the education of those students.

Adam (2013) investigated the use of electronic media in gifted schools in Khartoum from the perspective of teachers. Participants were 102 male and female teachers. Teachers' awareness of the importance of using ICT with gifted students was found to be high. Some aspects of the use of ICT were found to be poor. The most used aspect of ICT was found to be electronic educational programs (94%), followed by computer-assisted instruction (92%), mobile-based learning (91%), the Internet (89%), the projector (79%), the smart board (71%), the e-mail (69%), and finally video conferencing (60%).

The study by Al-Yahya (2014) aimed to identify the degree of interest in e-learning among teachers of gifted students in Saudi Arabia. Participants were all teachers of gifted students in the ministry of education in Saudi Arabia. After validated, a questionnaire developed to grope teachers' interest in e-learning was completed by 154 teachers. Results revealed that awareness of e-learning achieved the lowest mean (M=17.90; SD=5.52). On the other hand, management of e-learning achieved the highest mean (M=22.70; SD=6.40). No significant gender differences were found in the use of ICT or in the enrichment programs for gifted students from the perspective of teachers and supervisors. However, there were significant gender differences in favor of males concerning obstacles of e-learning in the enrichment programs for gifted students. Finally, years of experience did not have significant effect on the dependent variables.

Al-Shehri (2019) explored the use of supporting ICT in educating gifted students in Al-Majaridah Governorate in Saudi Arabia and the effect of gender and educational stage on that use. Using the descriptive method, the researcher developed a questionnaire to collect required data. The sample consisted of randomly selected 161 students (80 males and 81 females). Mean of students' ratings was average (M=20.94). No significant differences were

found in participants' performance by gender or educational stage (intermediate and secondary).

Arab studies in all educational institutes and stages reached inconsistent results concerning the availability of ICT and educational technology with some institutes reporting high availability (Al-Harthi, 2011; Al-Hamran & Al-Ajlouni, 2009; Assoud, 2008; Al-Ghadian, 2011; Al-Maqteri & Al- Abbsi, 2012), average availability (Al-Hajaya, 2013; Solyman, 2010; Shatanawi, 2005), lack of a number of technologies (Al-Barakati, 2009; Shaban, 2004; Al-Shehri, 2011; Omar, 1999), and low availability (Abu-Zaytoon, 2009; Al-Jarah & Al-Ajlouni, 2012; Mahjoub, 2007; Al-Nemri, 2012).

Studies on the reality of ICT use in education revealed effective use (Al-Harthi, 2011; Al-Hamdan & Al-Khezi, 2008; Al-Hamran & Al-Ajlouni, 2009; Al-Jamlan, 2004; Addayel, 2013; Al-Zyoudi, 2012; Assoud, 2008; Shatanawi, 2005; Aseiri, 2005; Attalal, 2010; Al-Ghoul, Al-Kateeb & Al-Masri, 2008; Kamtour, 2004), average use (Abu-Jamous & Al-Harsh, 2004; Abu-Himeid, 2007; Abu-Zaytoon, 2009; Ahmed & Al-Baloushi, 2009; Akhder, 2007; Al-Barakati, 2009; Banjer, 2009; Al-Hajaya, 2013; Al-Harbi, 2011; Hanafi, 2010; Al-Khaledi & Al-Wreikat, 2013; Al-Khateeb & Al-Mosalami, 2010; Shaban, 2004; Ashinaq, 2011; Al-Shehri, 2011; Ashour, 2010; Al-Assaf & Assarayrah, 2012; Omar, 1999; Al-Ghadian, 2011; Mahjoub, 2007; Mufleh & Al-Meqdadi, 2010; Al-Nafisah, 2008; Al-Hazani, 2009), and poor use (Al-Jarah, 2013; Alkhuraiji, 2011; Al-Ruwais, 2011; Solyman, 2010; Al-Showe'eya, 2012; Al-Ajlouni & Al-Jarah, 2011; Al-Qahtani, 2013; Al-Naabi, 2010; Jawarneh, El-Hersh & Khazaleh, 2007).

It is obvious from the survey of literature that the availability of ICT has captured the interest of a large number of researchers. This seems reasonable given the important role of ICT in education. It is also obvious that the availability of ICT in various Arab educational institutes is average to low. This raises a need for periodical studies to trace changes in the availability of ICT in Arab educational institutes. It is also important to explore the availability of ICT in various Arab countries given the wide discrepancy in ICT availability in Arab countries. Another observation that emerged from the review is paucity of such investigations in gifted schools and programs despite the great importance of ICT in gifted education. This provided the motive for conducting the present study that could provide accurate information on the availability and use of ICT in gifted schools in Sudan.

Recently, gifted education has received considerable interest in Sudan. Several gifted schools have been established since 2004 and meanwhile there has been nationwide interest in details of gifted education: (a) establishing a comprehensive philosophy and vision of the education of gifted students, (b) selecting and preparing teachers of gifted students, (c) developing the identification of gifted students, (d) enriching existing educational and developing new ones, (e) meeting the counseling needs of gifted students and their families, and (f) preparing professional cadre to lead gifted schools. This study was conducted for further interest in ICT

in gifted schools in an attempt to improve the education provided to gifted students in these schools. For so doing, the study explored the availability and use of ICT in these schools.

Statement of the Problem

The establishment of gifted schools was a leading development for education in Sudan. For this endeavor to be successful, great efforts need to be exerted. In this respect, several studies examined aspects of gifted education in Sudan. However, the use of ICT in the education of gifted students has not received but little research interest. Furthermore, the availability of ICT in gifted schools, as experienced by the authors of this study, seems to be unsatisfactory. For these reasons, this study was conducted to shed light on the reality of ICT in gifted schools in Sudan. More specifically, the study addressed the following questions:

1. To what extent is ICT available and how often is it used at gifted schools in Sudan from the perspective of teachers?
2. Do years of experience in general education, years of experience in gifted education and number of training courses in ICT correlate with the use of ICT?
3. Are there significant differences in teachers' use of ICT by qualification (Bachelor, Diploma and MA)?
4. Are there significant differences in teachers' use of ICT by specialization (Science, Arts)?
5. Are there significant differences in teachers' use of ICT by schools (Abdoon Hamad, Mahjoub Obaid and Mohammed Fouad)?
6. Are there significant gender differences in teachers' use of ICT?
7. Do availability and use of ICT correlate?

Aims of the Study

The aim of this study was to explore the availability and use of ICT in gifted schools in Sudan. It also explored the relationship between ICT use and some demographic variables.

Significance of the Study

The significance of this study stems from the following:

1. The attempt to shed light on the availability and use of ICT gifted schools in Sudan.
2. It can provide professionals in charge with gifted schools in Sudan with ICT innovations that should be introduced to gifted schools. Furthermore, it can urge them to encourage and monitor ICT use by teachers.
3. This study can be the first of its type in the Arab world to explore the reality of ICT in gifted schools. It can therefore encourage other researchers to cover other aspects of ICT that were not included in this study.

4. The study would introduce an instrument of ICT tools and equipment that can be used in future investigations.

Delimitations of the Study

The study was limited to teachers of gifted students and data was collected in the second semester of the school year 2010/2011.

Definition of Terms

Information and Communication Technology (ICT)

ICT refers to equipment and software used for storing, retrieving and sharing information. It also denotes the production of verbal, pictorial, text and digital data via electronic means and integration between computers and visual communication systems (Al-Hamran & Al-Ajlouni, 2009; Al-Jarah & Al-Ajlouni, 2012; Al-Ajlouni, 2004).

Gifted Schools in Sudan

These are schools for gifted students. They were inaugurated in the school year 2004/2005 and were given the name “Schools for the Gifted and the Brilliant”. There are three of such schools in the three main regions of the capital: a school in Khartoum (Abdoon Hamad School), Khartoum Bahri (Mohammed Fouad School) and Omdurman (Mahjoub Obaid School). Admission to these schools begins at the fourth grade of the Basic Education stage that has 8 grades.

Method

The researchers used the descriptive method, as it is the best method for exploring the phenomenon under investigation.

Participants

Participants were 56 teachers (51.8% males and 48.2% females) from gifted primary schools, in Khartoum, they constitute 87.5% of study population. They were selected based on a number of variables. Table 1 shows the distribution of participants according to the target variables.

Table 1. The distribution of participants according to study variables

Variable		Frequency	Percentage
School	Abdoon Hamad	18	32.1
	Mohammed Fouad	19	33.9
	Mahjoub Obaid	19	33.9
Years of experience in general education	1-5	24	42.8
	6-10	10	17.8
	11-15	9	16.1
	16-20	8	14.3
	Over 21	5	8.9
Years of experience in gifted education	1	10	17.9
	2	18	32.1
	3	9	16.1
	4	9	16.1
	5	9	16.1
Gender	Male		
	Female		
Age	25-29	13	23.2
	30-34	12	21.4
	35-39	14	25
	40-44	8	14.3
	45-49	6	10.7
	50-54	1	1.8
	55-59	-	-
	Over 60	2	3.57
Qualification	Bachelor	22	39.3
	Diploma	17	30.4
	MA	17	30.4
Number of courses	1-3	37	66
	4-6	13	23.3
	7-10	5	8.9
	Over 10	1	1.8
Specialization	Arts	33	58.9
	Science	23	41.1

The Instrument

A questionnaire was developed by the researchers to collect the required data. It had two dimensions: a dimension for ICT equipment and software (76 items) and another for ICT use (76 items). It was developed based on ICT literature. After developed, the questionnaire was

face validated by a number of specialists and faculty members of gifted education, instructional technology, information and libraries, computer sciences and teaching methods. The questionnaire was then piloted on 30 male and female teachers (rather than those who participated in the study) to establish its internal consistency by computing correlations among items and total scores of their dimensions. Items whose significance of correlations with their dimensions was less than 0.05 were excluded. Accordingly, six items were excluded from each of the two dimensions in the questionnaire. The questionnaire was then tested for reliability using alpha Cronbach method. The first dimension yielded an alpha coefficient of 0.79 and the second dimension of 0.86.

Statistical Analysis

The IBM SPSS STATISTICS26 program was used to compute means, standard deviations, t-test for independent means, Pearson correlation coefficients, percentages, one-way analysis of variance and Scheffe test for post hoc analysis.

Results

Results of the first research question: "To what extent is ICT available and how often is it used at gifted schools in Sudan from the perspective of teachers?"

To answer the first research question, percentages of teachers' responses concerning ICT availability and use were computed as listed in table 2.

Table 2. ICT availability and use at gifted schools

No.	Equipment and technologies	Availability				Use			
		Degree	Freq.	%	Sig.	Degree	Freq.	%	Sig.
1	**Educational tapes**	Not at all	8	14.3	-	Not at all	15	26.8	-
		Sometimes	27	48.2	.05	Sometimes	29	51.8	.01
		Always	21	37.5	-	Always	12	21.4	-
2	**Television**	Not at all	21	37.5	-	Not at all	42	75.0	.01
		Sometimes	18	32.1	-	Sometimes	13	23.2	-
		Always	17	30.4	-	Always	1	1.8	-
3	**TV cam & educational TV**	Not at all	41	73.2	.01	Not at all	47	83.9	.01
		Sometimes	9	16.1	-	Sometimes	8	14.3	-
		Always	6	10.7	-	Always	1	1.8	-
4	**Video cassettes, CD-ROMs & DVDs**	Not at all	38	67.9	.01	Not at all	47	83.9	.01
		Sometimes	12	21.4	-	Sometimes	8	14.3	-
		Always	6	10.7	-	Always	1	1.8	-
5	**Video cameras**	Not at all	29	51.8	.01	Not at all	36	64.3	.01
		Sometimes	15	26.8	-	Sometimes	17	30.4	-
		Always	12	21.4	-	Always	3	5.4	-
6	**Interactive video**	Not at all	52	92.9	.01	Not at all	51	91.1	.01
		Sometimes	1	1.8	-	Sometimes	5	8.9	-
		Always	3	5.4	-	Always	0	0	-

7	**Video text**	Not at all	51	91.1	.01	Not at all	53	94.6	.01
		Sometimes	3	5.4	-	Sometimes	3	5.4	-
		Always	2	3.6	-	Always	0	0	-
8	**Teletext & Fascimile**	Not at all	49	87.5	.01	Not at all	49	87.5	.01
		Sometimes	4	7.1	-	Sometimes	7	12.5	-
		Always	3	5.4	-	Always	0	0	-
9	**Educational films**	Not at all	23	41.1	-	Not at all	27	48.2	.05
		Sometimes	22	39.3	-	Sometimes	27	48.2	.05
		Always	11	19.6	-	Always	2	3.6	-
10	**Microforms**	Not at all	46	82.1	.01	Not at all	50	89.3	.01
		Sometimes	6	10.7	-	Sometimes	5	8.9	-
		Always	4	7.1	-	Always	1	1.8	-
11	**Filmstrip projectors**	Not at all	28	50.0	.01	Not at all	34	60.7	.01
		Sometimes	13	23.2	-	Sometimes	19	33.9	-
		Always	15	26.8	-	Always	3	5.4	-
12	**Field films projectors**	Not at all	39	69.6	.05	Not at all	45	80.4	.01
		Sometimes	13	23.2	-	Sometimes	11	19.6	-
		Always	4	7.1	-	Always	0	0	-
13	**Video projector 66mm**	Not at all	44	78.6	.01	Not at all	47	83.9	.01
		Sometimes	8	14.3	-	Sometimes	9	16.1	-
		Always	4	7.1	-	Always	0	0	-
14	**Video projector 8mm**	Not at all	47	83.9	.01	Not at all	46	82.1	.01
		Sometimes	7	12.5	-	Sometimes	9	16.1	-
		Always	2	3.6	-	Always	1	1.8	-
15	**Language lab**	Not at all	3	5.4	-	Not at all	18	32.1	-
		Sometimes	14	25.0	-	Sometimes	22	39.3	-
		Always	39	69.6	.05	Always	16	28.6	-
16	**instructional packages**	Not at all	23	41.1	-	Not at all	33	58.9	.01
		Sometimes	11	19.6	-	Sometimes	14	25.0	-
		Always	22	39.3	-	Always	9	16.1	-
17	**Smart board**	Not at all	43	76.8	.01	Not at all	47	83.9	.01
		Sometimes	8	14.3	-	Sometimes	8	14.3	-
		Always	5	8.9	-	Always	1	1.8	-
18	**Digital show**	Not at all	22	39.3	-	Not at all	35	62.5	.01
		Sometimes	14	25.0	-	Sometimes	15	26.8	-
		Always	20	35.7	-	Always	6	10.7	-
19	**LCDs**	Not at all	25	44.6	-	Not at all	37	66.1	.01
		Sometimes	14	25.0	-	Sometimes	9	16.1	-
		Always	17	30.4	-	Always	10	17.9	-
20	**Personal computer**	Not at all	9	16.1	-	Not at all	15	26.8	-
		Sometimes	11	19.6	-	Sometimes	15	26.8	-
		Always	36	64.3	.01	Always	26	46.4	.05
21	**Laptop**	Not at all	15	26.8	-	Not at all	16	28.6	-
		Sometimes	11	19.6	-	Sometimes	21	37.5	-
		Always	30	53.6	.01	Always	19	33.9	-
22	**Slide projector**	Not at all	24	42.9	-	Not at all	34	60.7	.01
		Sometimes	12	21.4	-	Sometimes	20	35.7	-
		Always	20	35.7	-	Always	2	3.6	-
23	**Thermal transparency maker**	Not at all	49	87.5	.01	Not at all	53	94.6	.01
		Sometimes	5	8.9	-	Sometimes	3	5.4	-
		Always				Always	0	0	-
24	**Photocopiers**	Not at all	21	37.5	-	Not at all	30	53.6	.01
		Sometimes	9	16.1	-	Sometimes	18	32.1	-
		Always	26	46.4	.05	Always	8	14.3	-

25	**Episcope**	Not at all	44	78.6	.01	Not at all	47	83.9	.01
		Sometimes	9	16.1	-	Sometimes	9	16.1	-
		Always	3	5.4	-	Always	0	0	-
26	**Educational games**	Not at all	11	19.6	-	Not at all	17	30.4	-
		Sometimes	22	39.3	-	Sometimes	33	58.9	.01
		Always	23	41.1	-	Always	6	10.7	-
27	**Opaque projectors**	Not at all	42	75.0	.01	Not at all	50	89.3	.01
		Sometimes	9	16.1	-	Sometimes	6	10.7	-
		Always	5	8.9	-	Always	0	0	-
28	**The Internet**	Not at all	5	8.9	-	Not at all	5	8.9	-
		Sometimes	17	30.4	-	Sometimes	32	57.1	-
		Always	34	60.7	.01	Always	19	33.9	-
29	**The Intranet**	Not at all	27	48.2	.05	Not at all	38	67.9	.01
		Sometimes	15	26.8	-	Sometimes	13	23.2	-
		Always	14	25.0	-	Always	5	8.9	-
30	**E-mail & mailing lists**	Not at all	21	37.5	-	Not at all	26	46.4	.05
		Sometimes	11	19.6	-	Sometimes	24	42.9	-
		Always	24	42.9	-	Always	6	10.7	-
31	**Traditional and documentary cameras**	Not at all	18	32.1	-	Not at all	22	39.3	-
		Sometimes	15	26.8	-	Sometimes	24	42.9	-
		Always	23	41.1	-	Always	10	17.9	-
32	**Digital camera**	Not at all	20	35.7	-	Not at all	36	64.3	.01
		Sometimes	16	28.6	-	Sometimes	13	23.2	-
		Always	20	35.7	-	Always	7	12.5	-
33	**Magnetic table**	Not at all	50	89.3	.01	Not at all	55	98.2	.01
		Sometimes	6	10.7	-	Sometimes	0	0	-
		Always	0	0	-	Always	1	1.8	-
34	**Overhead projector**	Not at all	52	92.9	.01	Not at all	51	91.1	.01
		Sometimes	3	5.4	-	Sometimes	3	5.4	-
		Always	1	1.8	-	Always	2	3.6	-
35	**White board**	Not at all	11	19.6	-	Not at all	17	30.4	-
		Sometimes	7	12.5	-	Sometimes	18	32.1	-
		Always	38	67.9	.05	Always	21	37.5	-
36	**The microphone**	Not at all	3	5.4	-	Not at all	9	16.1	-
		Sometimes	11	19.6	-	Sometimes	30	53.6	.01
		Always	42	75.0	.01	Always	17	30.4	-
37	**Audio recorders**	Not at all	8	14.3	-	Not at all	18	32.1	-
		Sometimes	15	26.8	-	Sometimes	22	39.3	-
		Always	33	58.9	.01	Always	16	28.6	-
38	**School broadcasting unit**	Not at all	0	0	-	Not at all	7	12.5	-
		Sometimes	7	12.5	-	Sometimes	19	33.9	-
		Always	49	87.5	.01	Always	30	53.6	.01
39	**Radio via the Internet**	Not at all	7	12.5	-	Not at all	14	25.0	-
		Sometimes	15	26.8	-	Sometimes	31	55.4	.01
		Always	34	60.7	.05	Always	11	19.6	-
40	**The telephone**	Not at all	5	8.9	-	Not at all	10	17.9	-
		Sometimes	3	5.4	-	Sometimes	27	48.2	.05
		Always	48	85.7	.01	Always	19	33.9	-
41	**Play station & musical programs**	Not at all	43	76.8	.01	Not at all	45	80.4	.01
		Sometimes	7	12.5	-	Sometimes	8	14.3	-
		Always	6	10.7	-	Always	3	5.4	-
42	**Audio cassettes**	Not at all	4	7.1	-	Not at all	14	25.0	-
		Sometimes	14	25.0	-	Sometimes	26	46.4	.05
		Always	38	67.9	.01	Always	16	28.6	-

43	**Video game players**	Not at all	42	75.0	.01	Not at all	48	85.7	.01
		Sometimes	10	17.9	-	Sometimes	7	12.5	-
		Always	4	7.1	-	Always	1	1.8	-
44	**Educational videos & video conference**	Not at all	25	44.6	-	Not at all	33	58.9	.01
		Sometimes	19	33.9	-	Sometimes	22	39.3	-
		Always	12	21.4	-	Always	1	1.8	-
45	**Scanner**	Not at all	47	83.9	.01	Not at all	49	87.5	.01
		Sometimes	4	7.1	-	Sometimes	6	10.7	-
		Always	5	8.9	-	Always	1	1.8	-
46	**Laser & color printers**	Not at all	1	1.8	-	Not at all	8	14.3	-
		Sometimes	8	14.3	-	Sometimes	16	28.6	-
		Always				Always			
47	**MP3 & MP4 players**	Not at all	36	64.3	.05	Not at all	35	62.5	.01
		Sometimes	11	19.6	-	Sometimes	10	17.9	-
		Always	9	16.1	-	Always	11	19.6	-
48	**DVD players**	Not at all	23	41.1	-	Not at all	30	53.6	.01
		Sometimes	14	25.0	-	Sometimes	11	19.6	-
		Always	19	33.9	-	Always	15	26.8	-
49	**SD-Rom players**	Not at all	19	33.9	-	Not at all	28	50.0	.01
		Sometimes	13	23.2	-	Sometimes	8	14.3	-
		Always	24	42.9	-	Always	20	35.7	-
50	**Hotlines for consultation**	Not at all	40	71.4	.05	Not at all	39	69.6	.01
		Sometimes	10	17.9	-	Sometimes	15	26.8	-
		Always	6	10.7	-	Always	2	3.6	-
51	**White & digital board**	Not at all	33	58.9	.01	Not at all	30	53.6	.01
		Sometimes	7	12.5	-	Sometimes	11	19.6	-
		Always	16	28.6	-	Always	15	26.8	-
52	**Desktop software (word processors, databases)**	Not at all	8	14.3	-	Not at all	9	16.1	-
		Sometimes	14	25.0	-	Sometimes	20	35.7	-
		Always	34	60.7	.01	Always	27	48.2	.05
53	**Photoshop, paint & flash programs**	Not at all	26	46.4	.05	Not at all	29	51.8	.01
		Sometimes	12	21.4	-	Sometimes	15	26.8	-
		Always	18	32.1	-	Always	12	21.4	-
54	**E-maps**	Not at all	50	89.3	.01	Not at all	47	83.9	.01
		Sometimes	5	8.9	-	Sometimes	9	16.1	-
		Always	1	1.8	-	Always	0	0	-
55	**Digital interactive books**	Not at all	47	83.9	.01	Not at all	43	76.8	.01
		Sometimes	4	7.1	-	Sometimes	5	8.9	-
		Always	5	8.9	-	Always	8	14.3	-
56	**Programmed games**	Not at all	25	44.6	-	Not at all	34	60.7	0.01
		Sometimes	17	30.4	-	Sometimes	11	19.6	-
		Always	14	25.0	-	Always	11	19.6	-
57	**Magnetic and flannel boards**	Not at all	42	75.0	.01	Not at all	42	75.0	.01
		Sometimes	5	8.9	-	Sometimes	9	16.1	-
		Always	9	16.1	-	Always	5	8.9	-
58	**Desktop programs (Excel & PowerPoint)**	Not at all	17	30.4	-	Not at all	21	37.5	-
		Sometimes	14	25.0	-	Sometimes	21	37.5	-
		Always	25	44.6	-	Always	14	25.0	-
59	**Electronic concept map programs**	Not at all	38	67.9	.01	Not at all	44	78.6	.01
		Sometimes	4	7.1	-	Sometimes	5	8.9	-
		Always	14	25.0	-	Always	7	12.5	-
60	**Electronic min map programs**	Not at all	50	89.3	.01	Not at all	50	89.3	.01
		Sometimes	4	7.1	-	Sometimes	6	10.7	-
		Always	2	3.6	-	Always	0	0	-

61	**E-books & E-journals**	Not at all	42	75.0	.01	Not at all	45	80.4	.01
		Sometimes	4	7.1	-	Sometimes	6	10.7	-
		Always	10	17.9	-	Always	5	8.9	-
62	**Educational software (hypermedia)**	Not at all	31	55.4	.01	Not at all	25	44.6	-
		Sometimes	11	19.6	-	Sometimes	26	46.4	.05
		Always	14	25.0	-	Always	5	8.9	-
63	**E-portfolios**	Not at all	50	89.3	.01	Not at all	50	89.3	.01
		Sometimes	4	7.1	-	Sometimes	6	10.7	-
		Always	2	3.6	-	Always	0	0	-
64	**Electronic course developing programs**	Not at all	50	89.3	.01	Not at all	55	98.2	.01
		Sometimes	6	10.7	-	Sometimes	1	1.8	-
		Always	0	0	-	Always	0	0	-
65	**E-learning via international sites & E-blogs)**	Not at all	50	89.3	.01	Not at all	55	98.2	.01
		Sometimes	6	10.7	-	Sometimes	1	1.8	-
		Always	0	0	-	Always	0	0	-
66	**Virtual labs**	Not at all	50	89.3	.01	Not at all	50	89.3	.01
		Sometimes	4	7.1	-	Sometimes	6	10.7	-
		Always	2	3.6	-	Always	0	0	-
67	**Wireless projector**	Not at all	50	89.3	.01	Not at all	50	89.3	.01
		Sometimes	4	7.1	-	Sometimes	6	10.7	-
		Always	2	3.6	-	Always	0	0	-
68	**M-learning, virtual learning, news network, cataloging systems**	Not at all	50	89.3	.01	Not at all	55	98.2	.01
		Sometimes	6	10.7	-	Sometimes	1	1.8	-
		Always	0	0	-	Always	0	0	-
69	**Synchronous & asynchronous electronic classrooms, electronic classroom management programs, course management programs, chat groups**	Not at all	47	83.9	.01	Not at all	43	76.8	.01
		Sometimes	4	7.1	-	Sometimes	5	8.9	-
		Always	5	8.9	-	Always	8	14.3	-
70	**Computerized mathematical programs & scientific calculators**	Not at all	42	75.0	.01	Not at all	42	75.0	.01
		Sometimes	5	8.9	-	Sometimes	9	16.1	-
		Always	9	16.1	-	Always	5	8.9	-

From table 2, ICT tools that are always available in gifted schools are language labs, the personal computer, the laptop, the photocopier, the Internet, the whiteboard, the microphone, audio recording devices, the school broadcasting unit, the radio via the Internet, the telephone, audio cassettes, laser printers, color printers, and desktop software (word processors, information storing and retrieval, databases). Educational videos are sometimes available.

Tools that are not at all available include TV cams, the educational TV, video recorders, CD and digital videos, video cameras, the interactive video, videotext, telecast and Fascimile, micro forms, filmstrip viewer, field film viewer, video projector 66mm, Video projector 8mm, the smart board, thermal slide makers the episcope, the opaque projector, the intranet, the magnetic table, the overhead projector, the PlayStation, musical programs, the scanner, MP3 and MP4 players, hotlines for consultation, the digital whiteboard, Photoshop, Paint and Flash programs, e-maps, interactive digital books, the magnetic board, the flannel board, electronic concept map programs, electronic mind map programs, e-books, e-journals,

video game players, educational software (hypermedia), e-portfolios, electronic course development programs, e-learning management systems (learning via international sites and e-blogs), virtual labs, wireless projector, mobile learning, virtual learning, the news network, cataloging systems, synchronous and asynchronous electronic classrooms, electronic classroom management programs, course management programs, chat groups, computerized mathematical programs, and scientific calculators.

It is also obvious from table 2 that ICT tools that are always used by teachers include the personal computer, the school broadcasting unit, the laser and color printers, desktop programs (word processors, information storing and retrieval, databases). Tools that are sometimes used by teachers include educational tapes and videos, educational games, the microphone, the radio via the Internet, the telephone, audio cassettes, educational software (hypermedia).

Tools that are not at all used by teachers are the TV, the TV cam, the educational TV, video players, CDs and DVDs, video cams, the interactive video, videotext, Teletext and facsimile, educational films, micro forms, filmstrip projector, field film viewer, video projector 66mm, Video projector 8mm, instructional packages, the smart board, digital data shows, LCDs, the overhead projector, thermal strip maker, the photocopier, the episcope, the opaque projector, the intranet, the e-mail and mailing lists, the digital cam, the magnetic table, the PlayStation, musical programs, video game players, educational videos and video conference, the scanner, MP3 and MP4 players, audio players, DVD and CD-ROM players, hotlines for consultation, the white digital board, Photoshop, Paint and Flash programs, e-maps, digital interactive books, programmed games, the magnetic board, the flannel board, electronic concept map programs, electronic mind map programs, e-books, e-journals, e-portfolios, electronic course development programs, e-learning management systems (learning via international sites and e-blogs), virtual labs, the wireless projector, mobile learning, virtual learning, the news network, cataloging systems, synchronous and asynchronous electronic classrooms, electronic classroom management programs, electronic course management programs, chat groups, computerized mathematics programs, and scientific calculators.

Results of the second research question: "Do years of experience in general education, years of experience in gifted education and number of training courses in ICT correlate with the use of ICT?"

To answer the second research question, correlation coefficients among ICT use on one hand and years of experience in general education, years of experience in gifted education and number of training courses in ICT on the other were computed. These results are shown in table 4.

Table 4. Correlations among ICT use and years of experience in general education, years of experience in gifted education and number of training courses in ICT

Depended variable	Demographic variable	Correlation coefficient	N	Sig.
CCT use	Years of experience in general education	0.01	56	Not sig.
	Years of experience in gifted education	0.254		Not sig.
	Age	0.001		Not sig.
	number of training courses in ICT	0.246		Not sig.

Data in table 4 reveals that no correlational relationships were found between ICT use on hand and each of the demographic variables of age, years of experience and number of training courses in ICT on the other.

Results of the third research question: "Are there significant differences in teachers' use of ICT by qualification (Bachelor, Diploma and MA)?"

To answer the third research question, one-way analysis of variance was computed to explore differences in ICT use by qualification (bachelor, Diploma, MA). These results are listed in table 5.

Table 5. ANOVA test for differences in ITC use by qualification

Dependent variables	Source of variance	Sum of squares	df	Mean square	F	Sig.
ICT use	Between groups	74.279	2	37.139	.168	.846
	Within groups	11743.650	53	221.578		
	Total	11817.929	55			

Data in Table 5 reveal no statistically significant differences in ICT use by qualification (bachelor, Diploma, MA).

Results of the fourth research questions "Are there significant differences in teachers' use of ICT by specialization (Science, Arts)?"

To answer the fourth research question, the t-test for independent means was used to explore differences in teachers' ICT use by specialization (arts and science). These results are shown in table 6.

Table 6. The t-test for differences in teachers' ICT use by specialization

Dependent variables	Specialization	N	M	SD	df	t-value	Sig.
ICT use	Arts	33	102.97	15.645	54	-.027	.979
	Science	23	108.00	12.866			

From table 6, it can be seen that no statistically significant differences in teachers' ICT use by specialization (arts and science) were found.

Answer of the fifth research question, "Are there significant differences in teachers' use of ICT by schools (Abdoon Hamad, Mahjoub Obaid and Mohammed Fouad)?"

The ANOVA test was used to explore if there were differences in teachers' ICT use by school (Abdoon Hamad, Mahjoub Obaid and Mohammed Fouad). These results are listed in table 7.

Table 7. ANOVA test for differences in teachers' ICT use by school

Dependent variables	Source of variance	Sum of squares	df	Mean square	F	Sig.
ICT use	Between groups	2507.823	2	1253.912	7.138	.002
	Within groups	9310.105	53	175.662		
	Total	11817.929	55			

Table 7 reveals statistically significant differences in in teachers' ICT use by school. Thus, Scheffe test was used to identify the direction of differences as illustrated in table 8.

Table 8. Scheffe test for differences in teachers' ICT use by school

Dependent variable	School (I)	School (J)	Mean differences (I-J)	Standard error	Sig.	Confidence level	
						Minimum	maximum
ICT use	Abdoon Hamad	Mohammed Fouad	27.10	5.14	.002	4.359	16.12*
		Mahjoub Obaid	16.37	-5.59	.471	4.359	5.39
	Mohammed Fouad	Abdoon Hamad	-5.14	-27.10	.002	4.359	-16.12*
		Mahjoub Obaid	.09	-21.57	.52	4.300	-10.74
	Mahjoub Obaid	Abdoon Hamad	5.59	-16.37	.471	4.359	-5.39
		Mohammed Fouad	21.57	-.09	.52	4.300	10.74

* significant at the 0.05 level

Data in table 8 shows that there were significant differences (a=0.05) in ICT use by teachers in Abdoon Hamad School and Mohammed Fouad School in favor of Abdoon Hamad School.

Results of the sixth research question, "Are there significant gender differences in teachers' use of ICT?"

The t-test for independent means was used to explore gender differences in teachers' ICT use. Table 9 presents these results.

Table 9. The t-test for gender differences in teachers' ICT use

Dependent variables	Specialization	N	M	SD	df	t-value	Sig.
ICT use	Males	29	103.59	16.677	54	.425	.673
	Females	27	106.59	12.255			

Table 9 shows that there were no statistically significant differences in teachers' ICT by gender.

Results of the seventh research question, "Do availability and use of ICT correlate?"

Correlations were computed to explore if availability and use of ICT correlate. These results are listed in table 10.

Table 10. Correlations between availability and use of ICT

Dependent variable	Use	Availability
Availability	1	.457**
Use	.457**	1

** Significant at the 0.01 level (2-tailed)

Table 10 reveals a strong correlational relationship (a=0.01) between availability and use of ICT.

Discussion

The study aimed to identify the reality of ICT availability and use from the perspective of teachers at gifted schools in Sudan. It also explored the relationship between ICT availability and use on one hand and a number of demographic variables.

Results revealed the availability of a small number of ICT tools and software at gifted schools in Sudan. The numbers of tools that were always and not at all available were 16, 54 respectively. The finding is consistent with the studies by Al-Jarah (2013), Al-Hamdan and Al-Khezi (2008), Al-Khareji (2011), Al-Ruwais (2011), Solyman (2010), Al-Ajlouni and Al-Jarah (2011), Al-Qahtani (2013) and Al-Naebi (2010). Tools that were always, sometimes and not at all used by teachers were 5, 8 and 57 respectively. This finding is in line with the studies by Al-Jarah (2013), Al-Khareji (2011), Al-Ruwais (2011), Solyman (2010), El- El Showe'eya (2012), Al-Ajlouni and Al-Jarah (2011), Al-Qahtani (2013), Al-Naebi (2010), and Jawarneh, El-Hersh, & Khazaleh (2007). These results reflect unfavorable reality of ICT at gifted schools. Using the classification proposed by Al-Ameri and Anaqrah (2011) of the four stages of ICT reality, the availability of ICT at gifted schools in Sudan falls in the second stage that lasted from 1984 to 1993. Very few available ICT tools belong to the third stage that lasted from 1993 to 2000. Sudan gifted schools do not have ICT tools from the fourth stage that extents from 2001 up to now. Use of ICT by gifted students' Sudanese teachers as indicated by results of the present study can be judged in the light of the summary offered by Al-Hamran and Al-Ajlouni (2009) of the techniques that schools follow in their adoption of ICT: emergence, application, integration and transformation. ICT use at the three Sudan gifted schools fell in the second stage, application.

Results revealed no correlational relationship between ICT use and each of the variables of age, experience and number of training courses in ICT. This finding concurs with the studies by Abu-Jamous and Al-Harsh (2004), Al-Khareji (2011), Al-Soud (2008), Shatanawi (2005),

El-Showe'eya (2012). The finding concerning experience is inconsistent with the studies by Ashour (2010), Al-Ghoul, Al-Khateeb and Al-Masri (2008), Al-Ghadian (2011), Al-Naebi (2010). The finding about training courses concur with the studies by Abu-Jamous and Al-Harsh (2004) and Al-Nafisah (2008).

No significant differences were found in teachers' ICT use by qualification (bachelor, diploma and MA). This finding quite concurs with Ashour (2010), Abu-Jamous and Al-Harsh (2004), Al-Khareji (2011), Al-Soud (2008), Shatanawi (2005) and Kamtour (2004).
Also no significant differences in teachers' ICT use by specialization were found. This finding is in line with Addayel (2013), Shatanawi (2005), Kamtour (2004), Al-Naebi (2010), whereas it is inconsistent with Al-Hamdan and Al-Khezi (2008) that found differences for teachers with science specialization.

Significant differences were found in teachers' ICT use by gender. This finding quite concurs with the studies by Ashour (2010), Abu-Jamous and Al-Harsh (2004), Al-Hamdan and Al-Khezi (2008), Al-Khareji (2011), Al-Ruwais (2011) Al-Soud (2008) and El- Showe'eya (2012). It is nevertheless inconsistent with the studies by Al-Kkaledi and Al-Wreikat (2013), Shatanawi (2005), Al-Assaf and Al-Sarayrah (2012), Mufleh and Al-Meqdadi (2010) where significant differences were found in favor of male teachers.

Significant differences (a=0.05) were found in teachers' ICT use by school in favor of teachers at Abdoon Hamad school in comparison with teachers at Mohammed Fouad school. Finally, data analysis revealed a positive correlation (a=0.01) between availability and use of ICT.

Recommendations

1. Establishing monitoring mechanisms to make sure that teacher use available ICT at their schools.
2. Rewarding teachers who use ICT in their teaching practice.
3. Introducing ICT tools that the present study proved to be lacking to gifted schools and monitoring their use by teachers.
4. Providing teachers with intensive training in ICT.
5. Encouraging teachers to develop the skills required for effective ICT use.
6. Following ICT innovations and introducing them to gifted schools.
7. There should be ICT experts and technicians at every gifted school.

Suggestions for further studies

1. Exploring factors that deter teachers of gifted students from using ICT and proposing solutions to them.
2. Identifying the ICT training needs of teacher of gifted students.

3. Investigating the attitudes of teachers of gifted students towards ICT use.

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