

A Survey on Existing Digital Gap between Teachers and Students of Girl Schools in Neishabour

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Abstract

This research project aims to study the digital gap between teachers and female students of high schools of Neishabour. The survey research method was used for this research. The information was collected through two researcher developed questionnaires: one related to teachers and the other one related to students. All the teachers and female students of high schools of Neishabour formed the statistical population of this research project which included 92 teachers and 260 students. The statistical population was selected according to Kersey and Morgan table and through simple one-step random sampling. The findings of the research showed that although teachers have more expertise of information and communication technologies than students, teachers and students possess the same amount of hardware facilities. There is a significant difference between students' using of information and communication technologies and that of teachers: students use information and communication technologies more than teachers. Teachers' level of education does not affect their possession and using of information and communication technologies. In general, the results of the research showed that there was a digital gap between teachers and students. In order to remove or reduce this divide and develop educational knowledge and technology, it is required to change and improve the organization structure and the methods of our country's educational system.

Keywords: Digital Gap, Information and Communication Technology, Teachers, Students, Schools.

Introduction:

In knowledge-oriented society of today, humankind is passing a deep evolution. Not only this evolution covers technology, devices and environment, but also includes our lifestyle and fundamental concepts of life, from concept of work to the concept of education, which all have experienced major changes. (Tabatabaee Arany, 2002). Major changes that have happened recently, have essentially changed societies in many ways. These changes have caused significant changes in educational systems: Educational patterns have turned schools to learning oriented patterns and have initiated an era of digital instruction; an era in which learning has made its way outside schools and universities and is accessible from home, workplace and other places. In fact, all of these changes are the results of growth of communicative technologies. (Paseban, 2005: 16)

With emergence of new technologies, the profession of teaching has changes from being teacher-oriented and oration-based instruction to pervasive-oriented and cooperative learning environment. It should be noted it is individuals who change the instruction not technology and first of all, teachers should become an effective and efficient force. Therefore, just using the technology is not important; teachers should also consider thinking methods which are usually provided by technology (Resta, 2002). In this way, teachers are not the kind of people who sit in the class before the students and teach them, they are there as a guide to help the students find the right learning path and access what they have learned. Instead of working separately from one another, teachers work together in groups in common plans and projects. (Hajforoosh and Orangi, 2004)

In order to increase its impact on the teaching to students and improve knowledge level of the teachers, our educational system should inevitably use information technology. But this happens when teachers have conceptual skills resulting in the creation of new insights which can be of help in planning to our educational system (Nassiri Allabadi, Naghipoor Zahir, 2009). Hence, in order to meet the needs of this era and information technology in the third millennium, our educational system should unavoidably adapt itself to changing circumstances of this country and the world. (Khorasani, 2003)

Research Background

Andro Jones did a research about obstacles of using of the communication and information technology from the viewpoint of the teachers. He mentioned problems such as : teachers' distrust and worry about using the computer, teachers disability, time limit, teachers' inaccessibility to communication and information technology on their own, technical problems, lack of didactic skills, lack of hardware, age differences, sexual differences, lack of intuition and knowledge of vantages of using communication and information technology. (quote in: Nasiri Ali Abadi, Taghipoor, Zahir, 2009) in another research Juznic and his colleagues' results about using the internet in Slovenia indicated that just one third of aged people in society are users of the internet and age is an important element in using the internet. (Smoot 2007) through a research with the title "eliminating digital gap: The quality study of the two teachers who diminish the gap" which dealt with events, beliefs, method, contacts modes and plans that tend to expand the technology by an skilled teacher for passing the digital gap. The results of this research propose that teachers can have different ways to achieve their aims for accessing digital gap, because user teachers of technology, who teach in extracurricular classes have the same trends to technology role in education. The research results indicate that teachers' ability to using technology joy in teaching,

sureness in students' ability to using technology, all of these affect the idealistic aim of teacher, and ability of communicating with digital world. during a quality research, Clarck studied on parents' guideline in relation with young people using of communication and information technology. Founds indicated that digital divide in poor families is deeper in generations. Nevertheless in these families, parents and children can cope with digital gap challenges effectively by using a suitable guideline. (Clarck,2009).

In one of the first researches, Eslami (2004) studied the ability of teaching the internet, accessing and using of teachers and students in north of Tehran. The results show that the students mostly have access to the internet and students of north of Tehran had more options. In an inter organization research.

In an inter organization research, Rouzbehi and Ahmadi (2006) studied the necessity assessment of high schools principals and education staff in Esfahan about information technology in 2004-2005 in 4 bases, computer information networks, E government and computer tools,.. Statistical society is all the school principals and education staff in the 5 zones of Esfahan. Research results show that education staff had more information about information network, E government and computer tools than principals. Results show that most of the knowledge of principals and education staff is about computer and their least knowledge is about computer tools' effects on education, also the requirement rate of principals and education staff in Esfahan with less than 10 years of job background is less than the principals and education staff who have ten to fifteen and over sixteen years of job background in "Teaching the media networks" and "Teaching of the electronic state".

In a most recent researches published, Hariri and Zamani Rad (2012) have analyzed the digital gap between generation regarding the familiarity, interest, and the use of information and communication technologies. In order to know the level of digital gap between the generations (children and parents) in terms of familiarity, interest, and the use of Information and Communication technologies, a targeted and non-random sample of children and parents, including 102 students at the third level of guidance school and the first year of high school at the 10th district of Tehran and their parents were selected and their familiarity with and interest in and use of technologies like internet, E-mail, online chat, cell phones, computer games, and so on was studied. The results show that the average familiarity with and interest in and use of technologies in parents was 2.04 and in children was 3.16. The digital gap between parents and children regarding the familiarity with IT, interest in it, and the use of it were respectively: -1. 22, -1. 24, -0/88. In the familiarity with IT, interest in it, and the use of it between children and parents were a meaningful difference. (Hariri and Zamani Rad, 2012)

Research methodology

The population, sample and sampling

This research is based on surveys and about the aims, this research is of practical type. Statistical population of this research consists of two groups. The first group consisted of all the teachers of all-girls high schools in Neishabour ,which equal 120 teachers, and the second group was all of the students of those schools which equal 800 students. Sampling was conducted at random and size of the sample was set based on Morgan and Kersey Table. As a result, 92 teachers and 260 students were chosen.

Research tools

In order to collect information from the samples who are being studied, two type of questionnaires were used, one for the teachers, and one for the students. In order to validate the completed questionnaires, content validity method was used. Also, reliability level of the questionnaires was calculated by conducting an inter-sample pretest similar to the population which is being studied. In the “amount of having equipment” section, Cronbach's alpha coefficient was set 0.796 and 0.773 for the teachers and the students respectively; and for “amount of using Information and Communications Technologies” section, Cronbach's alpha coefficient was set 0.897 and 0.902 for the teachers and the students respectively. Analysis of the data was done by IBM SPSS Statistics software package.

Analysis of Data

We have used Descriptive statistics and inferential statistics such as Kolmogorov–Smirnov Test, non-parametric Mann–Whitney Test, T-Test with two independent samples and One-way Analysis of Variance Test were used.

Questions of the Research

This research wants to answer these questions by using collected data:

- 1- Is amount of having hardware equipment same for the teachers and the students?
- 2- Is amount of using Information and Communications Technologies same for the teachers and the students?
- 3- Does teachers' education level affect their possession of information and communications equipment?
- 4- Does teachers' education level affect their use of ICTs?

Research Findings

Question 1: Do teachers and students have the same hardware and software equipment?

There were 19 questions in teachers' questionnaire and 18 questions in students' questionnaire. Results of this table show that in majority of the items that are about having equipment, teachers' average is a little higher than the students'. In order to study the significance of these differences, inferential statistics was used. Kolmogorov–Smirnov Test was used for normal being of the variables for teachers' group and students' group separately. Significance level of this test was 0.168 for the teachers and 0.000 for the students. As this test's level of significance was lower than 0.05 for the students, the variable of amount of having equipment is not normal. In order to measure the significance of the seen differences between the teachers and the students in this variable, non-parametric Mann–Whitney Test was used.

Results of the test show that the level of significance is equal to 0.168 and is higher than 0.05, therefore with 95 percent certainty we can say that the amount of having necessary hardware equipment is the same among the teachers and the students.

Table 1: Mann–Whitney Test for Studying Significance of Difference between Teachers and Students in Possession of Equipment

Possession of Equipment	Quantity	Average of Ranks	Statistic Z	Level of Significance
Teachers	92	282.86	-1.366	0.168
Students	260	259.29		

Question 1: Do teachers and students use Information and Communications Technologies same?

Results of the above table show that the average amount of usage of the items (except Typing Class Materials and Researches, Microsoft Word Software, and Other Software in Microsoft Office Suite) is more in the students than the teachers. If we look at the results of the Kolmogorov–Smirnov Test which was for normal being of the variable of the amount of usage of Information and

Communications Technologies, which was normal for the teachers and the students, T-Test with two independent samples is used for inferential test of the question of the research.

Table 2: Results of T-Test for Studying Significance of Difference between Teachers and Students in Amount of Using Information and Communications Technologies

Variable	Group	Frequency	Average	Test of Comparing Averages				Levine Test	
				Upper Limit	Lower Limit	Sig	T	F	Sig

Amount of Using ICT	Student	260	47.94	4.176	10.12	0.00	4.74	5.25	0.02
	Teacher	92	40.79						

Based on the table above, levels of significance for equality of variances is equal to 0.02 and is lower than 0.05. Therefore by supposing the inequality of variances, we compare the averages. Amount of level of significance for the equality of averages is equal to 0.000 and is lower than 0.05. Therefore, we can say with 95 percent certainty that amount of usage of Information and Communications Technologies is not the same among the teachers and the students. On the other hand, as average of the students is higher than the teachers, the students' amount of usage is higher than the teachers'.

Question 3: Does the teachers' level of education affect their possession of information and communications equipment?

Results of the below table show that of three groups of the teachers with three different degrees, average of having equipment is higher among the teachers who have an associate degree. Also, because the variable indicating the rate of possessing the hardware tools between the teachers was normal, the ANOVA test should be used for assessing the level of meaningfulness between the averages of these 3 groups. The results of conducting this statistical test are shown in the table below

Table 3: One-way Analysis of Variance Test for Studying Significance of Difference between Teachers with Different Education Levels in Criteria of Possession of Equipment

Source of Changes	Sum of Squares	Degree of Freedom	Average of Squares	Statistic F	Level of Significance
Inter-Group	214.984	2	107.492	0.267	0.767
Intra-Group	36682.523	91	403.105		

Based on the results of the above table, as significance level of the test is equal to 0.767 and is higher than 0.05, we can say that education level of the teachers does not affect the amount of hardware equipment they have.

Question 4: Does teachers' education level affect their use of ICTs?

Results show teachers with master's degrees and higher use ICTs more than other teachers. Also because of normal being of the variable of the amount of ICTs usage of the teachers, One-way Analysis of Variance Test was used for testing significance level of existing differences among averages of this variable among the teachers. The results of this test are provided in the table below.

Table 4: One-way Analysis of Variance Test for Studying Significance of Difference between

Teachers with Different Education Levels in Criteria of Using Information and Communications Technologies

Source of Changes	Sum of Squares	Degree of Freedom	Average of Squares	Statistic F	Level of Significance
Inter-Group	46.663	2	23.332	0.141	0.869
Intra-Group	15039.622	91	165.271		

As we see in Table 4 Level of Significance is 0.869 and is therefore more than 0.05. Based on this, we can say with 95 percent confidence that educational level of teachers does not affect their use of the technology.

Conclusion:

Amount of possessing necessary hardware equipment between the teachers and the students was asked in a form of 19 questions from the teachers and the students separately.

Results show that based on amount of having the Information and Communications Technologies, a twofold classification can be given:

- 1- Amount of having some of the Information and Communications Technologies by the teachers was more than the students; including: Personal computer, printer, scanner, burner, capability to connect to the Internet, webcam, mobile phone, and email.

- 2- In some of equipment and technologies, it was the students who were ahead of the teachers; like mobile phone capability of connecting to the Internet, blog or website, MP3 player, and digital television.

By looking at the technologies that are more available to the teachers; it can be concluded that as these technologies are among the first Information and Communications Technologies, most teachers have them at home. Also distribution of educational levels in families of the teachers is a lot lesser than families of the students because parents of the students have different and heterogeneous levels of education. On the other hand, incomes of the teachers are not different that much from each other, while parents of the students have diverse levels of income that this diversity has caused them to not be able to afford some of the Information and Communications Technologies. In accordance with the results of this research, results of Eslamy Research (2004) also show that students in north Tehran have more facilities and technological equipment. In Karamyzade Research (2008), it was found that a high percentage of the students had limited access to computers and the Internet. Of these students, more than half of them had access to computers and the Internet at home and a few had access at school. This result is also similar to this research but the only difference is that now most students have access to computers at home. The cause of this is widespread use of computers and decrease in prices of them.

Another point is the existing cultural level between teachers which is again very close to each other, while parents of the students have different cultural levels. As a result, three factors of income level, educational level, and cultural level can be considered as the causes of seen differences in amount of having some of the Information and Communications Technologies; meaning technologies that are more related to hardware than to software. This result of the research is similar to Rau's view (2005) because he viewed economic level as an influencing factor on the digital divide too. On the other hand, the students have passed the teachers in terms of software and hardware equipment, which is peculiar to the young generation. For example, the MP3 player which is used more by teenagers and the youth; or capability to connect to the Internet which is one of the factors considered by teenagers and the youth when buying mobile phones, while adults pay attention more to the functions of the mobile phones.

Existence or non-existence of difference between the teachers and the students in amount of using Information and Communications Technologies was another question and its results are given in Tables 3 and 4. These results show that average of the students' use of Information and Communications Technologies is more than the teachers' average. Research conducted by Hariry and Zamaniyrad (2012) has similar results to this research's. The Hariry and Zamaniyrad Research say that the ICT usage gap between parents and children is -0.88 and children use ICT more. Hagen Mayer Research (2004) states that the use of the Internet and its facilities are more in lower ages. It seems that the most important cause of this result is the difference in age. Another point is that the newer the technologies are, the lesser the teachers' use of them is. For instance, social networking services which have been founded recently have the least use among the teachers and many of them have not used this technology yet.

Results of this research also show that education level of the teachers does not affect their possession of the ICTs (Tables 1 and 2). Perhaps the similar living conditions of most of the teachers have caused this. The similar living conditions of the teachers have also equalized the access to equipment among them. The results also show that education level of the teachers does not affect the amount they use ICTs (Tables 3 and 4). It seems that a large portion of these results are caused by workplaces in which there is no requirement for using ICTs and teachers only use these technologies for some of their works. Another cause of these results is closeness of the teachers with diverse education levels to each other in cultural levels. The researcher in his review of the article did not find anything related to these issues in the article.

Overall, this research shows that although the teachers have necessary equipment for using ICTs, they are not successful in other fields. The amount of their use is lower when compared to the students who have less equipment. In order to bridge this gap, work needs to be done on macro and micro levels. Macro-level programs are those programs that should be done countrywide. In micro level, work needs to be done by the teachers and the students themselves to bridge the gap which exists between them. based on new technologies.

Practical suggestions:

The results have shown that In macro-level management of the country's educational system, some of the most important obstacles the educational structure faces in the Third Millennium are as follows: Centralization, bureaucracy, instability in management, lack of attention to quality and training of human resources. Fundamental changes in the educational system are needed, if we want to solve these problems. These changes need criteria and solutions like: Spreading participatory and school-oriented management, decentralizing management, spreading quality management, paying attention to stability in management when appointing managers, decreasing the educational-system bureaucracy, and paying necessary attention to the training of human resources (Talebiyan, Tasdighy, 2006). Paying attention to these solutions helps us to synchronize our educational system with development processes of knowledge, globalization, and information technology more easily and quickly. Not paying attention to changes in the global scene in the field of educational technology means losing our connections with the international system which will result in our isolation and will have irreparable losses to our society and educational system. In order to develop knowledge and educational technologies, we recommend that structure and manners of our educational system be changed and the teachers' and students' innovations and initiatives be valued. Also we think that the students, teachers, and staff should be provided continually with special training based on new technologies.

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