

# **A Survey on Existing Digital Divide between Teachers and Students of Girl Schools in Astara County**

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## **Abstract**

This research project aims to study the digital divide between teachers and female students of state-run high schools of Astara. 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 state-run high schools of Astara formed the statistical population of this research project which included 94 teachers and 432 students. The statistical population was selected according to Krejcie 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 divide 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 structure, organization and the methods of our country's educational system.

**Keywords:** digital divide, information and communication technology, Teachers, Students, Schools, Astara

### **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. ( Tatabayi Ariani, 1381). 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. ( Battro, 1384: 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 s 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 Orangy, 1383)

Today, science and technology can teach far better than teachers and students, with the help of technology, the students can learn more than the past when they had only a teacher. This can be the reason that high technology has been in the center of attention every hour every day and is before students' eyes in every place. With this being said, meaning of the breaking of the walls of schools is understood with more clarity (Arghireson, 1383). By going through statistics and information concerning scale of spread of information technology in different countries, we learn that many of them, both developed and developing, have comprehensive schemes for equipping schools with computer facilities, internet access and information technology. Considering the growing spread of information technology and its effects on humans and societies, acquaintance of students and teachers with this technology and also ability to use it is essential ( Tavvakol, 1390: 105 )

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 Alliabadi, Naghipoor Zahir, 1388). 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.

### **Exposition of the issue**

Teachers and students, considered the main components of any educational system, should adjust themselves to these technologies.

A teacher, as the most important source of education organization can't do their huge duty well, without knowing complexity of mutations (Bakhtiari, Ahmadi, 1997). They should create vast spectrum of technical and didactic skills in up to date usage of didactic contents and new models creation in themselves. Communication and information technology is aim of enhancing the teacher's skills and also a tool for gaining to it. Students can use technology as a tool for telecommunicating and interacting with their peers. This usage of technology in using the computer and other communicating tools, improves their digital and information knowledge. Information knowledge is needed for surviving in this competing world and expanding of this part of technology among the students is a good base for their entering to the society and equips them to the information knowledge tools. (Seif, Biranvand, Zoodayand).

Therefore according to the matters mentioned above, we can notice the importance and role of communication and information technology in different levels of society specifically for education organization, but any gaps between generations and different groups of society is clear, that should be mark and peruse and do essential and necessary actions in order to decline it. In education system, teachers and students are two groups that are from two different generations, but they have close communication and effect on each other. This effect often is from teachers on students. A teacher does an instructor role in teaching process, teacher always should have more knowledge than learner in order to do the learning process properly. This rule is for communication and information technology. Meanwhile, teachers should have essential ability to change the traditional system and using it efficaciously and peruse it with interest and motivation. In fact, teachers need to research and study for improving the learning and teaching process in classroom. So, using the information technologies is necessary for the teachers. (Simoneez, 2003, page 95-96)

Since modern technology has such an importance that the inequality in accessing and using them can bring about extensive consequences for a person. On the other hand, not paying attention to solve these digital inequalities causes them to be deeper. This issue is ruling in education system, so that if education officials do not deal with declining the digital divides, they can't perform their future plans perusing the presence or absence of the digital divide between teachers and students as a basic element and the base of education system is more important.

Because achieving ideals such as knowledge-based society, sustainable development etc. have significant dependent on fair and square providing of information technologies in community specifically education organization. Consequently, the digital gap is filled or diminished. Since there hasn't been any research yet on the digital gap between teachers and students, in most of the researches each of these groups was studied separately.

This research is trying to study whether there is any difference between the teachers and students of high schools in knowledge acquaintance, interest and using of communication and information technology; In other words, to find out if there is any gap among them.

### ***Review of literature:***

#### ***Review literature in outside of Iran:***

In outside of Iran, many researches have been done about using technology among different ages and about digital scrutiny. But with scrutiny hasn't been found such research like this

research. below has been referred to some researches that almost have relevance to this research.

This research has been done in 2004, it's been reported that in USA as the users age go up, their use of internet go down, 76% of people at age 18 to 49 always use internet and online connecting, whereas users of the internet and its facilities in age 50 to 65 are 58% and just 22% of people older than 65 are using internet facilities.(Hagemaier, 2004)

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, 1388) 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 divide: 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 divide. The results of this research propose that teachers can have different ways to achieve their aims for accessing digital divide, 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 divide challenges effectively by using a suitable guideline.

### **Research history in Iran:**

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, 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, that 3 zones were chosen by the method of simple cluster sampling and 150 principals and 30 men of staff were chosen by the simple random sampling as the statistical samples. 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”.

### **Research Methodology**

This research is based on surveys; because it is used for studying characteristics of a statistical population. In this method, attitudes and behavior of a society is understood by choosing a random sample representing the people of that society. Main advantage of this type of research is that if conducted correctly, it gives the researcher the opportunity to generalize the results from a small group to a large group (Sekaran, 2006). About the aims, this research is of practical type. These researches use knowledge and information base provided by fundamental researches and are intended to satisfy human needs and optimize tools, methods, and models with the purpose of developing welfare and comfort and improving life level of the humans (Hafezniya, Mohammadreza, 2006).

Statistical population of this research consists of two groups. The first group consisted of all the teachers of all-girls state high schools in the Astara County, 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, 94 teachers and 432 students were chosen. 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.

### **Goals and Usage of the Research**

The main goal of conducting this research is studying whether there is digital divide between the teachers and the high school female students of the Astara County or not. Other goals of this research are as follows:

- Getting familiar with amount of hardware equipment the teachers and students have.
- Becoming aware of usage status of Information and Communications Technologies used by the teachers and students.
- Becoming aware of impact of education level of the teachers on their possession of hardware equipment and their use of ICTs.
- Collecting and providing information which Ministry of Education officials can use in their future planning for the teachers and students.

## 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- How many Information and Communications Technologies the teachers and the students use?
- 3- Does teachers' education level affect their possession of information and communications equipment?
- 4- Does teachers' education level affect their use of ICTs?

## Results of the Study

### 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 answers of both groups are provided in the table below.

**Table 1: Statistical Indicators of Respondents to the Question of Quantity of Possession of Hardware and Software Equipment**

Questions	Answered Yes				Answered No			
	Teachers		Students		Teachers		Students	
	Quantity	Percentage	Quantity	Percentage	Quantity	Percentage	Quantity	Percentage
1-Do you have a computer at home?	86	91.5	336	78.5	8	7.5	92	21.5
2- Do you have a printer at home?	47	50.0	106	24.6	47	50.0	325	75.4
3- Do you have a scanner at home?	25	26.6	62	14.4	69	73.4	370	85.6
4- Can your computer burn optical discs?	74	78.7	300	69.4	20	21.3	132	30.6
5- Can your								

computer connect to the Internet?	79	84.0	273	63.8	15	16.0	155	36.2
6- Does your computer have a webcam?	29	30.9	112	25.9	65	69.1	320	74.1
7- Does your school have any computers?	70	74.5	262	60.6	24	25.5	170	39.4
8- Does your school have any printers?	76	80.9	347	80.3	18	19.1	85	19.7
9- Does your school have any scanners?	44	46.8	228	52.8	50	53.2	204	47.2
10- Can school's computers burn optical discs?	81	86.2	321	74.5	13	13.8	110	25.5
11- Can school's computers connect to the Internet?	82	88.2	299	69.7	11	11.8	130	30.3
12- Do school's computers have webcams?	18	19.1	101	23.4	76	80.9	331	76.6
13- Do you have a mobile phone?	89	94.7	384	88.9	5	5.3	48	11.1
14- Can your mobile phone connect to the Internet?	54	57.4	306	70.8	40	42.6	126	29.2
15- Do you have an email?	50	53.2	210	48.7	44	46.8	221	51.3
16- Do you have a digital television								

at home?	56	59.6	268	62.0	38	40.4	164	38.0
17- Do you have a fax machine at home? <sup>1</sup>	14	14.9	Not asked	Not asked	80	85.1	Not asked	Not asked
18- Do you have your own blog or website?	11	11.7	80	18.5	83	88.3	352	81.5
19- Do you have a MP3 player?	44	46.8	253	58.6	50	53.2	179	41.4

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. In the table below, the results of this test are provided.

1- This question was only in the teachers' questionnaire.

**Table 2: 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	94	282.86	-1.366	0.172
Students	432	259.29		

Results of the test show that the level of significance is equal to 0.172 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.



**Question 2: How many Information and Communications Technologies the teachers and students use?**

Before studying this question in a statistical test format, descriptive results of the amount of usage of the samples has been provided in the table below.

**Table 3: Statistical Indicators of Teachers and Students for Variables of Amount of Use of Information and Communications Technologies**

Item	Group	Statistical Indicator	Answer					Average
			Very Low	Low	Medium	High	Very High	
Using Computers (In General)	Teachers	Quantity	16	21	31	17	9	2.81
		Percentage	17.0	22.3	33.0	18.1	9.6	
	Students	Quantity	62	85	141	79	65	3.02
		Percentage	14.4	19.7	32.6	18.3	15.0	
Typing Class Materials and Researches	Teachers	Quantity	15	26	23	22	7	2.76
		Percentage	16.1	28.0	24.7	23.7	7.5	
	Students	Quantity	106	141	99	59	27	2.45
		Percentage	24.5	32.6	22.9	13.7	6.3	
Microsoft Word Software	Teachers	Quantity	20	20	21	26	7	2.79
		Percentage	21.3	21.3	22.3	27.7	7.4	
	Students	Quantity	127	116	94	67	28	2.43
		Percentage	29.4	26.9	21.8	15.5	6.5	
		Quantity	38	27	15	13	1	

Other Software in Microsoft Office Suite	Teachers	Percentage	40.4	28.7	16.0	13.8	1.1	2.07
	Students	Quantity	184	121	74	38	15	2.03
		Percentage	42.6	28.0	17.1	8.8	3.5	
Graphics Software Like Adobe Photoshop	Teachers	Quantity	49	25	13	4	3	1.80
		Percentage	52.1	26.6	13.8	4.3	3.2	
	Students	Quantity	184	105	82	39	22	2.10
		Percentage	42.6	24.3	19.0	9.0	5.1	
Educational Software	Teachers	Quantity	23	23	23	17	8	2.62
		Percentage	24.5	24.5	24.5	18.1	8.5	
	Students	Quantity	110	114	126	55	27	2.48
		Percentage	25.5	26.4	29.2	12.7	6.3	
Using the Internet for Research or Educational Materials	Teachers	Quantity	21	24	24	19	6	2.63
		Percentage	22.3	25.5	25.5	20.2	6.4	
	Students	Quantity	92	102	130	69	39	2.68
		Percentage	21.3	23.6	30.1	16.0	9.0	
Chatting Online with Friends	Teachers	Quantity	65	14	9	3	3	1.57
		Percentage	69.1	14.9	9.6	3.2	3.2	
	Students	Quantity	184	85	76	48	39	2.25
		Percentage	42.6	19.7	17.6	11.1	9.0	
		Quantity	76	14	3	1	0	

Blogging	Teachers	Percentage	80.9	14.9	3.2	1.1	0	1.25
	Students	Quantity	287	75	37	17	16	1.62
		Percentage	66.4	17.4	8.6	3.9	3.7	
National Network of Schools	Teachers	Quantity	37	31	22	4	0	1.93
		Percentage	39.4	33.0	23.4	4.3	0	
	Students	This question was only asked in teachers' questionnaire.						
Web Designing	Teachers	Quantity	81	9	1	2	1	1.23
		Percentage	86.2	9.6	1.1	2.1	1.1	
	Students	Quantity	295	62	42	20	13	1.60
		Percentage	68.3	14.4	9.7	4.6	3.0	
Sending Files by Email	Teachers	Quantity	57	20	10	6	1	1.66
		Percentage	60.6	21.3	10.6	6.4	1.1	
	Students	Quantity	169	102	93	40	28	2.21
		Percentage	39.1	23.6	21.5	9.3	6.5	
Sending SMSs	Teachers	Quantity	28	22	16	18	10	2.58
		Percentage	29.8	23.4	17.0	19.1	10.6	
	Students	Quantity	71	64	81	82	134	3.34
		Percentage	16.4	14.8	18.8	19.0	31.0	

Popular Search Engines	Teachers	Quantity	37	15	22	17	3	2.30
		Percentage	39.4	16.0	23.4	18.1	3.2	
	Students	Quantity	141	103	80	46	62	2.51
		Percentage	32.6	23.8	18.5	10.6	14.4	
Online or Electronic Shopping	Teachers	Quantity	52	24	10	7	1	1.74
		Percentage	55.3	25.5	10.6	7.4	1.1	
	Students	Quantity	201	110	68	33	20	1.99
		Percentage	46.5	25.5	15.7	7.6	4.6	
Business Software	Teachers	Quantity	38	25	18	10	3	2.10
		Percentage	40.4	26.6	19.1	10.6	3.2	
	Students	This question was only asked in teachers' questionnaire.						
Bluetoothing Files	Teachers	Quantity	40	29	11	10	4	2.04
		Percentage	42.6	30.9	11.7	10.6	4.3	
	Students	Quantity	109	78	105	73	67	2.80
		Percentage	25.2	18.1	24.3	16.9	15.5	
Uploading Pictures and Films	Teachers	Quantity	67	16	7	2	2	1.47
		Percentage	71.3	17.0	7.4	2.1	2.1	
	Students	Quantity	162	109	83	41	36	2.26
		Percentage	37.6	25.3	19.3	9.5	8.4	

Using Social Networking Services	Teachers	Quantity	66	15	11	2	0	1.46
		Percentage	70.2	16.0	11.7	2.1	0	
	Students	Quantity	180	104	65	34	49	2.24
		Percentage	41.7	24.1	15.0	7.9	11.3	
Computer Games	Teachers	This question was only asked in students' questionnaire.						
	Students	Quantity	70	58	87	106	111	3.30
		Percentage	16.2	13.4	20.1	24.5	25.7	
Continuous Lists of Libraries	Teachers	This question was only asked in students' questionnaire.						
	Students	Quantity	213	105	72	24	18	1.91
		Percentage	49.3	24.3	16.7	5.6	4.2	

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. Its results are provided in the table below.

**Table 4: 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 Information and Communications Technologies	Student	432	47.94						
	Teacher	94	40.79	4.176	10.12	0.00	4.74	5.25	0.02

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.

**Table 5: Comparison of Averages of Possession of Equipment Separated by Education Level of Teachers**

Groups	Quantity	Average	Standard Deviation	Lowest	Highest
Associate Degree	5	64.21	12.565	47.37	78.95
Bachelor's Degree	68	57.66	19.660	5.26	94.74
Master's Degree and Higher	21	57.14	22.532	10.53	94.74
Total	94	57.89	19.918	5.56	94.74

As it was said earlier, since the variable of amount of having hardware equipment was normal for the teachers, One-way Analysis of Variance Test<sup>1</sup> was used for measuring significance level

1- ANOVA

of the averages of these three groups. The results of this test are provided in the table below.

**Table 6: 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.

**Table 7: Average of Amount of Teachers' Use of Information and Communications Technologies Separated by Education Level**

Groups	Quantity	Average	Standard Deviation	Lowest	Highest
Associate Degree	5	40.63	13.451	20	55.79
Bachelor's Degree	68	40.40	12.4767	21.05	77.89
Master's Degree and Higher	21	42.10	13.940	20	67.37
Total	94	40.79	12.736	20	77.89

As we see in the above table, 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 8: 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 8 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 (Table 1). 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 Zamaniyerad (2012) has similar results to this research's. The Hariry and Zamaniyerad 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 5 and 6). 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 7 and 8). 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.

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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