DIGITAL DIVIDE IN TURKISH PRIMARY SCHOOLS: SAKARYA SAMPLE

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ABSTRACT
Accessing to information technology and the ability to use it is increasingly becoming part of the toolkit necessary to participate and prosper in an information-based society. Inequalities in ICT access and use not only mirror existing patterns of social stratification, but can also maintain and even widen current disparities between these groups in important indicators of well-being such as academic success and earnings. Use of Information and Communication Technologies (ICT) in education has been an important concern in many countries. In this sense, the purpose of this research is to assess the digital divide conditions and the affects of digital divide on their level assessment exam (STS) success rank and school grades. This research was carried out in 7 counties including Sakarya city center and 6 counties involving 375 elementary schools in Sakarya city center and 12 counties it has and 7 of them are private elementary schools. Data of the research have been collected via questionnaire prepared by the researcher. It is seen that while most of the students, who ranked in top ten in the Level Assessment Exam (STS), have computer and internet in their homes, those who ranked "last ten" do not have computer and internet in their homes. It may be interpreted as there is a parallel relation between the increase of average grade of students and the increase of having computer and internet connection in their home. When it is examined thoroughly, there is a digital divide between primary school students. It is believed that, this situation goes in parallel with the socio-economic status of the families.
Key words: Digital divide, equal opportunity in education, information and communication technologies.

INTRODUCTION

The digital divide has become an important topic of research because it involves more than simply documenting the characteristics of people who own computers. The increasing popularity and economic utility of computers and the Internet have brought changes in the way societies and their individuals interact, the way we shop, attain college degrees, pay taxes, use the library and even find a job (Wilson, Wallin, & Reiser, 2003). Computers, which are replaced with typewriters by taking their functions in the beginning, are now being commonly used in a scope ranging from interpersonal communication to e-school and e-state applications. So, they have become an inseparable part of the social life.

This new technology is being incorporated into the public school curriculum and is transforming the way information is being created and distributed. Communities that wish to keep or recruit new high-paying jobs need to provide businesses with high-speed access. Individuals must learn to use this new technology to have any chance of being successful in the emerging knowledge economy (Wilson, et al, 2003).

The use of information and communication technologies (ICT) are seen by many commentators as underpinning the social and economic progression of nation-states throughout the first stages of the 21st century (Livingstone & Helsper, 2007; Selwyn, 2004). The revolution in information and communication technologies (ICTs) has transformed both the economy and society (Castells 2000; Kotkin 2000). The ICT revolution has created new tools, such as personal computers (PCs) and the Internet, which have reinvented and, in many instances, improved the ways all societies communicate, learn, and earn a living today (Chakraborty and Bosman, 2005). Most of the analysts have presented convincing arguments over the past two decades as to how new computer and telecommunications technologies will transform countries into 'knowledge economies' and 'network societies'. The ability to use ICT has been heralded by politicians to be 'the indispensable grammar of modern life' and a fundamental aspect of citizenship in the prevailing information age. Indeed, many governments in industrialized countries have been spurred on by the apparent inevitability of the information society and have initiated ICT based programmes which aim to ensure that their citizens do not get 'left behind' and are able to 'win' in the new global era (Selwyn, 2002, 2004).

In the usually less hyperbolic confines of academe, the transformative nature of ICT has been welcomed also as offering an unprecedented opportunity to overcome existing social divisions and inequalities. It is assumed by many academic commentators that ICT can 'empower' individuals, increase levels of social interaction and civic involvement as well as facilitate easy and widespread access to education and other public and government services (Selwyn, 2002; 2004). As Servon and Nelson (2001) put it, ''access to information technology and the ability to use it [have] increasingly become part of the toolkit necessary to participate and prosper in an information-based society".

However such as 'techno-enthusiasm' has been tempered of late by concerns over potentially divisive aspects of the information age. In particular, issues of inequalities of access to both technology and information have begun to prompt concern about emerging 'digital divides' between social groups. If individuals or groups of individuals are excluded from using ICT, it is argued, and then they will be excluded from many of the benefits that ICT can bring (Selwyn, 2002; 2004).

There are heated debates occurring in the United States and in Europe concerning questions of whether there is a so-called "digital divide" and if there is, how important it might be. In turn, the question is whether it will close or widen in future years. Much of this discussion is politically charged. Old views reappear about markets and people who are supposed to solve all problems by themselves, or not, and about the need or rejection of government intervention (Van Dijk & Hacker, 2003).

In this research, it is attempted to postpone this ideological discussion in order to develop scientific conceptual distinctions and to present reliable and valid empirical data on this subject matter. In this sense, the purpose of the research is to assess the digital divide conditions and the effects of digital divide on their level assessment exam (STS) success rank and school grades. In line with this purpose, answers were looked for the questions given below:

1) What is the digital divide level of students according to their socio-economic levels?
2) What is the
   a) time of use
   b) purpose of use of digital technologies by students according to their socio-economic level.
3) What is the
   a) rank of the students in level assessment exam,
   b) average points of students who have digital technologies and who do not?
4) Does having digital technologies create a meaningful difference in regards with the academic success of students?

Digital Divide

For much of the past decade, policy leaders and social scientists have grown increasingly concerned about a societal split between those with and those without access to computers and the Internet. The U.S. National Telecommunications and Information Administration popularized a term for this situation in the mid-1990s: the "digital divide". The phrase soon became used in an international context as well, to describe the status of information technology from country to country (Warschauer, 2003).

There has been much discussion and debate about the definition of the digital divide and of the empirical analyses of its components (Bozionelos, 2004; Compaine, 2001; Cooper, 2002; Dewan & Riggins, 2005; DiMaggio et al., 2004; Hargittai, 2003; Norris, 2001; Van Dijk, 1999; Warschauer, 2003). In the 1990s the traditional focus was mainly on infrastructural access. Today the discourse about the digital divide has expanded to other concerns and factors that generate digital inequality, differential modes of use and economic development and so on, (Benkler, 2006; Lebo, 2003; Wilson, 2006). While the traditional access-oriented thinking focused on questions related to measures such as ownership, availability, and affordability of infrastructure, now the focus is moving beyond technology to the users.

The American Library Association has advocated a further refinement of the concept to include differences in access to information through the internet and other information technologies and the knowledge, skills, and abilities to use online information (American Library Association, 2002). Moreover, attention is also now being directed toward more sophisticated analyses of the uses of ICTs (Howard, Rainie and Jones, 2001). For instance, a growing number of researchers are beginning to focus on a ''second level digital divide'' (DiMaggio and Hargittai, 2001; Lynette, Payton, Mbarika, Amadi and Meso, 2008;), exploring differences in ICT users' online skills, knowledge, activities, and attitudes toward using technologies. They identified five dimensions of Internet use that they posited would influence the benefits that users derive from the medium (DiMaggio and Hargittai, 2001):

1. The quality of equipment used for access;
2. The user's autonomy in ability to access it;
3. The navigational skills needed to understand how to use the complex Web of Information stored on the Internet;
4. The social support networks that inform some users to become more familiar with its potentials, and finally;
5. The types of sites the user visits while online.

These give the dimensions that affect the use of internet and utilization of internet by individuals. They also give information about the utilization quality of individuals who have come over the access to internet and computer problem. However, access to communication and information technologies problem still continues in Turkey. Thus, the definition of digital divide must include material access problem as well. Classification related with digital divide made by Van Dijk (1999) is more applicable for this research.

He distinguishes four kinds of barriers to access and the type of access they restrict (Van Dijk, 1999):

1. *Lack of elementary digital experience* caused by lack of interest, computer anxiety, and unattractiveness of the new technology ("mental access").
2. *No possession of computers and network connections* ("material access").
3. Lack of *digital skills* caused by insufficient user friendliness and inadequate education or social support ("skills access").
4. Lack of significant *usage opportunities* ("usage access").

Clearly, public opinion and public policy are strongly preoccupied with the second kind of access. Many people think that the problem of information inequality in the use of digital technology or computer-mediated communication (CMC) is solved at the moment that everyone has the ability to obtain a personal computer and a connection to the Internet. The first kind of access problem, the mental barrier, is neglected or viewed as a temporary phenomenon touching only elderly people, some categories of housewives, illiterates, and the unemployed. The problem of inadequate digital skills is reduced to the skills of operation, managing hardware and software. Sometimes this is also viewed as a temporary phenomenon to be solved shortly after the purchase of a computer and a network connection (Van Dijk & Hacker, 2003).

According to Van Dijk (1999), access problems of digital technology gradually shift from the first two kinds of access to the last two kinds. When the problems of mental and material access have been solved, wholly or partly, the problems of structurally different skills and uses become more operative. Van Dijk (1999) does not limit the definition of digital skills to the abilities of operating computers and network connections only. Instead, he includes the abilities to search, select, process, and apply information from a super abundance of sources. In this way, he anticipates the appearance of a *usage gap* between parts of the population systematically using and benefiting from advanced digital technology and the more difficult applications for work and education, and other parts only using basic digital technologies for simple applications with a relatively large part being entertainment (Van Dijk & Hacker, 2003).

Digital Divide in Education

Information and communication technology (ICT) in the past decade has added an important new element to the issue of education inequality. New technologies are widely viewed as having the potential to either alleviate or exacerbate existing inequalities (Warschauer, 2000, 2003). On one hand, if computers and the Internet are distributed equally and used well, they are viewed as powerful tools to increase learning among marginalized students and provide greater access to a broader information society (Cummins & Sayers, 1995). On the other hand, many fear that unequal access to new technologies, both at school and at home, will serve to heighten educational and social stratification, thereby creating a new digital divide (Bolt & Crawford, 2000).

Many educators and researchers as well as parents and youths themselves, have expressed several reasons why the nation should be concerned about the gap between the ICT "haves" and "have-nots" (Hick & McNutt, 2000; Turow & Nir, 2000). These concerns fall into four main themes: educational advantages, future employment and earnings, opportunities for social and civic involvement, and equity and civil rights issues. In this research, only the educational advantages and disadvantages are dealt with.

Many educators and researchers maintain that computers, educational software, and the internet offer a number of educational advantages (Lepper& Gurtner, 1989; Ross, Smith, & Morrison, 1991; Tezci, & Dikici, 2006; Yalçınalp & Aşkar, 2003). ICT can provide students and teachers with a large body of easily accessible information; create opportunities to reinforce learning basic, new, and higher-order cognitive skills; and increase student interest and motivation, parent-school communication, and parent involvement. These advantages, in turn, are expected to produce positive educational outcomes such as increased student success and school retention (U.S. Department of Education, 1999; Wenglinsky, 1998). Research tends to support these expectations, generally finding positive relations between school, home, and community uses of ICT and a variety of academic outcomes both for socio-economically disadvantaged and other children and youth (Ross et al., 1991; Sutton, 1991). Recent studies also indicate that parents share the belief that ICT provides students with educational advantages. For example, almost 90% of parents agreed that access to ICT assists children with their

school work, and 74% of parents believed that children without access to ICT are at an educational disadvantage (Turow & Nir, 2000).

Children's and adolescent's access to and use of ICT also are expected to increase future employment and earning opportunities. ICT skills assist youth in researching and locating employment. ICT skills prepare youth to successfully compete in job markets in which an increasing number of occupations require such skills (U.S. Department of Education, 1999), and employers compensate workers who possess them with higher wages (Krueger, 1993).

Information technologies are not only the instruments used in learning and teaching, but they are also the tools used to find and transfer information (Akkoyunlu & Kurbanoğlu, 2003). In this context, two essential skills come forward. One of them is computer technologies, as the inevitable result of using technology in education process; and the other is information literacy. Information literacy skills are among the essentials of learning for a lifetime which arises as a requirement of the 21st century. Using computer technologies is not only an element that supports education, but also a precondition for information literacy skills (Akkoyunlu & Kurbanoğlu, 2002). Depriving or/and not utilizing these technologies create unfavorable situations both in social and individual aspects. This unfavorable situation, which is also called digital divide, is inequity of opportunity originating from technology. It is the limitation of activating potentials of individuals due to the reasons that are out of their control (Gündüz and Hamedoğlu, 2003).

The digital divide has also been defined by Bozionelos (2004) as "the unequal distribution of opportunities across societal groups to reap the benefits of computerization. Socio-economic level is one of the major factors implicated in the digital divide". Disparities in technology access and the ability to skillfully use technology is an important consideration, if students are to be prepared for economic opportunity and political participation (Mosseberger, Tolbert, & Stansbury, 2003).

Inequalities in ICT access and use not only mirror existing patterns of social stratification, but can also maintain and even widen current disparities between these groups in important indicators of well-being such as academic success and earnings (Johnson, 2000; Krueger, 1993). Disparities in academic success might widen because students from lower socio-economic backgrounds are unable to take full advantage of the educational benefits of ICT. Inequalities in earnings might increase as a result of students from lower socio-economic backgrounds being less prepared to compete for higher paying jobs that require ICT skills, or result from the link between academic success and subsequent educational attainment and future earnings (Jencks & Phillips, 1999).

In many countries, especially in Europe, similarly in Turkey as well, school systems are tracked; students are assigned to different school types officially on the basis of prior performance. These tracks range from purely academic tracks to vocational tracks and prepare students for different educational and labor market destinations (Marks, Cresswell, and Ainley, 2006; Shavit, 1990). Like many tracked educational systems, the sharpest break in students' differentiation takes place in secondary school system in Turkish educational system. Thereby, the process of allocation from elementary school to secondary school is of the essence in terms of equal opportunity. In Turkish educational system, allocation of students from elementary to secondary education is carried out by an examination that is held by a single center of Turkish National Education. Until 2008, students had been placed into secondary schools by a single exam they took at the end of 8th grade. As of 2007/2008 academic year, the number of examinations has been increased to three. Thus, students' "class score" is determined by adding students' end-of-year success and behavioral points to the points they get from the central exam which they shall take at the end of 6th, 7th and 8th grades that are the last three years of elementary education. (Tebliğler Dergisi, 2007). Students try to be placed into the limited quotas of the secondary schools, with the scores calculated in the aforementioned manner. For this purpose, STS (Level Determination Examination) which is very similar to this exam is taken as a base in the research. STS is a tentative competitive examination held at provincial level in Turkey. Taking Level Determination Examination is not compulsory but optional.

Students take Level Determination Examination in accordance with their class level and the questions asked in this examination are suitable for their class level. Thanks to this examination, students are able to compare themselves with other students with the same class level who take the exam as well. According to the scores, students are able to see and get their ranks on provincial basis. Thus, they are able to shape their future educational programs. From this aspect, STS may be used as a tool for unofficially labeling students and schools and ranking them based upon these labels.

The school community considers these exams very important. The performance of students in these exams is regarded as the indicator of quality of the school in public. The scores taken in these exams are also an

instrument for the assessment and feedback for students before the official exam and, besides, they serve as a reference to gain scholarship for further education.

Digital divide is one the factors that affect equity of opportunity in education along with other factors such as structure of education systems, socio-economic level of families, sex and location and others. In fact, none of these factors are independent from others. For example, while socio-economic level affects the education of individuals, the education level of individuals will inevitably affects their social status in the future. The fact that Turkish education system poses a tracked system in secondary level is one of the greatest obstacles that inhibit the equity of opportunity (Gündüz and Beşoluk, 2008). Education in primary schools and the period of access to secondary schools are very important for the future of Turkish students. In this sense, assessing the effect of ICT on academic success and its factors starting from primary schools to secondary schools will contribute in the related literature. And, moreover, it is important for enlightening policies that will be developed in order to remove inequities and to give an idea related with the digital divide between primary schools in Turkey.

METHODOLOGY

Sampling

This research was carried out in 7 counties including Sakarya city center and 6 counties involving 375 elementary schools in Sakarya city center and 12 counties it has and 7 of them are private elementary schools. 117730 students study in these schools. 56110 of these students (%47.6) receive education in the schools located at the city center while 61620 of them (%52.4) in the schools located in counties. 91 732 primary school students have joined in STS. Students ranking in the first 10 and in the last 10 in these city centers were covered in the research.

Deliberate sampling method was used in the research. While determining the dwelling units which would take place in the sampling, characteristics such as their socio-economic, cultural and geographical characteristics and their distance to the province were taken into consideration as independent variables. By making use of learned opinions, 6 of 12 counties in total were included in the research. Thus, centrally in 2008, the study group of the research comprised of students who received education in Hendek, Sapanca, Akyazı, Kocaali, Taraklı and Kaynarca counties and took the first and the last ten places in the ranking in the dwelling units where they lived in the Level Determination Examination (STS) held throughout the province. Since students took these examinations at the class level, who were the 6^{th}, 7^{th} and 8^{th} grade students of each dwelling unit and took the first and the last ten places in the ranking at their own class levels and in their own dwelling units were taken into account while determining the study group of the research. Thereby, totally 420 students from seven dwelling units composed the study group of the research.

Collecting the Data

Data of the research was collected via a questionnaire prepared by the researcher. The questionnaire consisted of 16 questions intended for assessing the success average of students, their adoption of digital technology, and socio-economic status. The application of the inquiry was carried out by the researcher.

Data Analysis

Frequency and per cent were applied for the first three sub-problems of the research and a t-test was applied for the fourth sub-problem. Before this, the socio-economic status of the students was assessed. The place where students live, education status of mother & father, professions of mother & father, their income levels, having their own home property, and social security were the arbiters of the socio-economic level. These variables were applied factor analysis and it was seen that they accumulated within the same factor. Index arithmetical average and standard deviation were evaluated as socio-economic level and they were divided in three groups. Groups were constituted as lower, middle and higher socio-economic levels by taking 0.5 standard deviation lower than average, 0.5 standard deviation lower and higher than average, and 0.5 standard deviation higher than average.

FINDINGS

Table 1. Computer and Internet Adoption according to the Socio-economic Levels of Students

Socio-economic level	Computer				Internet		
	N/%	Yes	No	Total	Yes	No	Total
Low	N	123	15	138	132	6	138
	%	89	11	100	95,70	4	100
Middle	N	71	114	185	116	69	185

	%	38	62	100	62,70	37	100
High	N	10	87	97	20	77	97
	%	10	90	100	20,60	80	100
Total	N	204	216	420	268	152	420
	%	49	51	100	63,80	36	100

When the computer adoption rate in relation with their socio-economic levels is examined according to Table 1; very few of the students (%11) that come from lower socio-economic level (SEL), most of the students (%62) that come from middle socio-economic level (SEL), and almost all of the students (%90) that come from higher socio-economic level (SEL) stated that they have a computer at home.

When the internet adoption rate according to their socio-economic levels is examined; very few of the students (%4) that come from lower SEL families, more than one third of the students (%37) that come from middle SEL families, and most of the students (%80) that come from higher SEL families stated that they have internet connection at home.

In this sense, it is seen that the higher socio-economic level of the students, the higher computer and internet adoption rate. However, it can also be determined that internet connection changes relatively in line with all SELs, and also lower, when compared with computer rate. There can be two reasons for this situation. Firstly, some families may regard computer more important than internet connection. And secondly, they may want to protect their children from the harmful effects of internet.

Table 2. Computer Use Hours according to the Socio-economic Levels of Students

Socio-economic level	Weekly Computer Use Hour					
	N/%	Never Uses	1-2 hour	3-4 hour	5-6 hour	Total
Low	N	105	30	1	2	138
	%	76	22	1	1	100
Middle	N	74	91	15	5	185
	%	40	49	8	3	100
High	N	24	60	13	0	97
	%	25	62	13	0	100
Total	N	203	181	29	7	420
	%	48,3	43,1	6,9	1,7	100

When the weekly computer use hours rate in relation with their socio-economic levels is examined according to Table 2; while a great majority of lower SEL students (% 76) stated that they never use computer, this rate is %25 among higher SEL students. It is seen that weekly computer use hour of students is centered between 1 – 2 hours. When computer use hours is examined according to SEL, one fifth (%22) of the lower SEL students, approximately half (%49) of the middle SEL students, and majority (%62) of the higher SEL students stated that they used computer for 1 and 2 hours. In this sense, it may be derived that families restrict computer use hours between 1 – 2 hours in order to support students with their children; even they have their own computers at home.

In this sense, almost three fourth of the lower SEL students, and almost half of the middle SEL students, and one fourth of the higher SEL students do not ever use computer; on the other hand one fifth of the lower SELs, and most of the middle and higher SEL students use computer weekly and almost all of their weekly computer use ranges between 1 and 2 hours.

Table 3. Purpose of Computer Use According to the Socio-economic Levels of Students

Socio-economic level	Purpose of Computer Use					
	N/%	Never	Game	Movie	Education	Total
Low	N	70	21	1	46	138
	%	50,7	15,2	,7	33,3	100

Middle	N	41	24	4	116	185
	%	22,2	13,0	2,2	62,7	100
High	N	5	24	1	67	97
	%	5,2	24,7	1,0	69,1	100
Total	N	116	69	6	229	420
	%	27,6	16,4	1,4	54,5	100

When purpose of computer use of students according to their socio-economic levels is examined; it is seen that the majority of the students, other than those that never use computer, use it for games and education. It can be seen that the rate of use varies in parallel with their socio-economic levels when the rate of those who state that they use computer for educational purposes. Even the rates of use reduce, same situation may be monitored for those who state that they use computer for game. High rates of middle and higher SEL family children in using computer for educational purposes may be regarded as the financial power of these families to buy computer as well as the reflection of middle and higher SEL families' orienting their children for conscious computer use.
In this sense, it may be derived that as the socio-economic level of students' families becomes higher, using computer for educational purposes becomes higher.

Table 4. Computer and Internet Adoption of Students according to Their Success Rank in Level Assessment Exam (STS)

Level Assessment Exam (STS) Rank	N / %	Computer		Internet		Total
		Yes	No	No	Yes	
Top Ten	N	65	145	102	108	210
	%	31	69	49	51	100
Last Ten	N	139	71	166	44	210
	%	66	34	79	21	100
Total	N	204	216	268	152	420
	%	49	51	64	36	100

When computer and internet adoption of students in regards with their success rank is examined, it can be seen that most of the students (69%), who have been successful in their city center and who ranked in top ten, almost one third of those who ranked "last ten" (34%) have computer at home. Similarly, most of the students, who have been successful in their city center and who ranked in top ten, have internet connection at home and one fifth of those who ranked "last ten" (21%) have internet connection at home. It may be derived that the computer and internet adoption at home make contribution to success of students in Level Assessment Exam (STS).

In this sense, it may be said that while most of the students, who have been successful in their city center and who ranked in top ten, have computer and internet at home, those who ranked "last ten" do not have computer and internet at home.

Table 5. Computer and Internet Adoption of Students according to Their Grade Averages

Average Grade		Computer		Internet		Total
		Yes	No	No	Yes	
1-2	N	21	4	22	3	25
	%	84	16	88	12	100
2-3	N	99	45	114	30	144
	%	69	31	79	21	100
3-4	N	19	21	29	11	40
	%	48	53	72	27,50	100
4-5	N	65	146	103	108	211
	%	31	69	49	51	100
Total	N	204	216	268	152	420
	%	49	51	64	36	100

When computer and internet connection of students in relation with their average grades is examined according to Table 5, the higher group who have computer in their home (69%) has an average grade between 4 and 5; they are (53%) followed by those in the second rank who have an average grade between 3 and 4, those who have an average grade between 1 and 2 ranks last. Similarly, while most of those who have an average grade between 4 and 5 have computer at home (51%), this rate decreases as average grades falls. For example, very few of the students (12%), who have an average grade between 1 and 2, have internet connection at home. Thus, it may be derived that computer and internet adoption of students at home contributes to their academic success.
When Table 5 is evaluated in total, it may be told there is a parallel relation between the increase of average grade of students and the increase of computer and internet adoption at home.

Table 6. Results of Independent Group t Test Made Related with the Difference between the Academic Success of Students according to Digital Technologies Adoption Variable

		N	Academic X	s.s.	Average S.H.	F	t	sd	P
Computer	Yes	204	2,62	1,04	,07	17,33	-8,55	418	,00
	No	216	3,43	,88	,05				
Internet	No	268	2,79	1,04	,06	27,98	6,75	418	,00
	Yes	152	3,47	,87	,07				

p<.05

At the end of the t test which was made depending on the relation between the academic success of students and their computer adoption at home, a meaningful difference arises. It can be told that the difference is in favor of the students who have computer at home. In this sense, it may be told that average grade (X=3,43) of students who have computer at home is higher than those (X= 2,62) who do not computer at home.

Similarly, at the end of the t test made depending on the relation between the academic success of students and their internet adoption at home, a statistically significant difference is found out. It can be told that the difference is in favor of the students who have internet connection at home. In this sense, it may be told that average grade (X=3,47) of students who have internet connection at home is higher than those (X= 2,79) who do not computer at home.

CONCLUSION AND DISCUSSION

Very few of the students that come from low socio-economic level (SEL) families, most of the students that come from the middle socio-economic level (SEL) families and almost all of the students that come from higher socio-economic (SEL) families have computer in their homes. As the proportion changes relatively, internet adoption at homes acts in parallel with adoption of computers at home. Very few of the students that come from lower SEL families, approximately one third of the students that come from middle SEL families, and a great majority of students that come from higher SEL families have internet connection in their at homes.

In this sense, as the socio-economic level of the students increase, computer and internet adoption at homes also increases. These results seem to be in compliance with the related literature (Brown, 2000; Eamon, 2004; Gündüz & Hamedoğlu).

Approximately one fourth of the students with lower SEL, almost half of the students with middle SEL and one fourth of the students with higher SEL did never use computer, and on the other hand, one fifth of the students with lower SEL, and most of the students with middle and higher SEL used computers at least once a week and it is also seen that weekly computer use of all students changed between 1 and 2 hours.

Purpose of computer use of the students is mainly centered on education and entertainment. It is seen that computer and internet use of the students for educational purposes outweighs. When purpose of use according to socio-economic levels is examined: it may be derived that as the socio-economic level of the students increases, using computer for educational purposes increases. Eamon (2004) also found in this study he made in the USA that wealthy students used digital technologies for academic purposes more than poor students. This situation, found out in both researches, is considered to be under the influence of social and cultural capital in the family.

It is seen that while most of the students, who ranked in top ten at their own class levels and in their own dwelling units in Level Assessment Exam (STS), have computer and internet in their homes, and those who ranked in “last ten” do not have computer and internet at home. This situation is primarily connected to the

financial power of the families to buy computer and internet. The fact that families with high economic levels and which did not have computer and internet connection lacked the awareness of contribution into educational success may be considered to stem from mental accesses (Van Dijk, 1999) such as computer anxiety and neglecting technologies, which are called access obstacles.

When computer and internet connection of students in relation with their average grades is examined according to Table 5, the higher group who have computer in their homes (69%) has an average grade between 4 and 5; they are (53%) followed by those in second rank who have an average grade between 3 and 4, those who have an average grade between 1 and 2 ranks last. Similarly, while most of those who have an average grade between 4 and 5 have computer in their homes (51%), this rate decreases as average grades falls. For example, very few of students (12%), who have an average grade between 1 and 2, have internet connection in their home.

It may be told there is a parallel relation between the increase of average grade of the students and the increase of having computer and internet connection in their homes. It is widely believed that computer and internet connection students' home contributes to their academic success. These findings are also supported by the related literature (Eamon, 2004; Ross et al., 1991; Sutton, 1991).

A meaningful difference is found out in academic success of students according to their internet connection in their homes. It is also seen that the average grade of students that have computer and internet connection in their homes is higher than the average grade of those who do not.

When examined totally, there is a digital divide between primary school students. It is believed that this situation is in parallel with the socio-economic level of the families. As explained by Gündüz and Hamedoğlu (2003), it wouldn't be expected that new technologies reach all people at the same time. However, groups or individuals that have digital technologies belong to higher and middle classes. In this context digital technologies realize the continuation of the available structure and widening the gap ever getting bigger (McConnaughey, 1997; Shapiro, 2001).

It is believed that economical and social factors are the essential of digital divide witnessed among students. So, in order to prevent the digital divide arising from economical effects, first of all, digital instruments must be financially available for each class of the society. And it is also suggested that these technologies must be made more available for those who have even poorer opportunities.

In order to come over mental access problems, offering guidance service that will increase sensitivity of the families and arranging education intended against obstacles of use may be suggested.

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