Observation of Young Age Individual's Approach to a New Computer Fact

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Abstract: Besides being imported to all of the areas in our lives, computers have a very important effect on all age groups. With the effect of the high-speed learning, in addition to using every kind of technological improvement easily, it can be observed that their speed of integrating those improvements into their lives is at a surprising level. In this study, behavior patterns of children, between the age of 12-15, in the first phase of a technological fact has been observed and worked on. "Cloud Computing" has been chosen as a fact that they will first face with. Firstly, a test has been given to the children in order to find out if they have any idea about the fact. After that, a presentation has been made about the fact chosen and then by applying a last test, it has been tried to find out how they comprehend the new fact. The data has been observed by "definitional statistic method" and "Depended Groups T-Test" using SPSS 21.0 software, and the results have been interpreted. The results show how fast children are in integrating new technology into their lives. In addition, the results include the details about the children's viewpoint and sense.

Keywords: Human computer interaction, technological improvement, computer usage, cloud computing.

Introduction

We live in the era of digital natives. Rising generation meets with smart machines when they first open their eyes to life. The viewpoint of rising generation on events, their discovering innovations and perceptions show difference in comparison with the previous generations. Like Elikind (1999) said, children "grow mature" earlier compared to past. The reason is that they can learn not only their environment and houses but also people, places, and events that they don't know. The minds of children are partly being occupied through computer, television, computer games, and cinema or they perceive the information in their schools by changing from

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time to time. Smart machines are becoming an individual of their families. The most prominent of these are computers and mobile devices without doubt. Devices that can respond to every request in a very short time are becoming more attractive for children whose perceptions are strong and who are just discovering world. Therefore, everything that is seen as only tool to non-digital natives can be a part of life and a reality of the world for digital natives.

Internet technology and computer which were considered as a tool for information gathering and computing have become an essential part of our lives with its use increasing every passing day. In every house in developed or developing countries, there are many mass communication tools. In addition, computers and internet have an important place in many children's lives. For example, in a study carried out in USA it was found out that there was a computer in the house of 70% of the children and internet in the house of 52% of children who were at the age of 2-17. Moreover, it is seen that between 1999 and 2000 the rate of computers found in the house of families living in USA increased 2% (from 68% to 70%) and the rate of internet usage increased 11% (from 41% to 52%) (Woordard & Gridina, 2000). According to the data (August, 2011) obtained from Turkish Statistical Institute, the rate of house having internet access increased to 42,9 % throughout Turkey. According to these statistics recorded on a regular basis, it can be said that the rate of house having internet access and the usage of internet and computer, on age groups basis, have significantly increased. The age group having the highest computer and internet usage rate was 16-24 (65,8%) and it was also revealed that 90% of the individuals using internet was using internet on a regular basis. It is now easier to use computers compared to previous periods, and this produces many different results. One of these results is the usage of computer and information technologies in the field of education. Alakoç (2003) argues that new advances in technology, computer, and communication result in changes in education understanding, and this brings along the usage of new techniques and methods in today's education.

Another important fact of modern day is that young individuals and children can easily adapt to every technological development they face

and integrate it into their lives. Technology offers learning and additional opportunities to children in order to present what they have learned. It also offers different learning environments and pays attention to their personal differences and learning styles. It allows them to progress and improve in line with their needs and interests (Clements, 1999). For this reason, they can easily solve the usage of a new social network, a web system, or electronic device and integrate them into their lives. Young minds are continuously exposed to the effects of digital technology and they are the most sensitive minds against these effects (Small & Vorgan, 2008). There are many studies carried out to figure out whether these effects are positive or negative. According to a research carried out on 94 families in certain cities in Turkey (Eskişehir, Bursa, and Kütahya) families think that internet is a necessity in modern life and it does not have negative effect on their family relations (Odabaşı, 2005). In another research conducted to determine the effects of children on internet usage in terms of families, data was obtained with qualitative and quantitative research methods with 38 families and 31 children. In line with the findings obtained in the research, it was concluded that children are very effective in internet usage at home. In addition, it was concluded that interfamilial conflicts and discussions began to result from internet usage (Rompaey, Roe & Struys, 2002). It is known that when direct methods are followed, information technologies play a very important role in children's lives. On this subject Healy (1998) stated in a study that new technologies create an environment for children in which they learn by doing and experiencing and simply complicated or intangible concepts by visualizing them; Papert (1998) stated that computers offer tangible experience to children, children can control computers and computers have positive effects on them as long as children are in interaction with their friends. Furthermore, it is suggested that computers offer effective and rich learning environment for children (Dodge & Colker, 1995). In addition, the importance of families is great in terms of creating technological awareness in children. Factors such as computer usage by families at home, offering children such environments, and spending time with their children on computer are efficient in terms of creating technological awareness in children (Blatchford & Siraj 2001).

The aim of this study is to analyze the behaviors of children about perceiving a subject about which they don't have information previously, integrating them into their lives, and adding what they learn to their individual application areas.

Method

The study was administered in Turkey Journalists Association Elementary School. The sample was determined as 60 students (29 male, 31 female), at the age of 12-15. Application steps followed in the study are as follows:

- A questionnaire was conducted among children in order to collect demographic information, measure knowledge levels regarding information technologies, and determine the role of computers in their daily lives.
- Pre-test application, to be used as pre and post-test and regarding the subject (cloud computing), which they haven't information about, was performed.
- A presentation, which lasted 15 minutes and gave general information about cloud computing and its fundamentals, was made.
- The questionnaire conducted as pre-test was then applied as post-test.
- Demographic data obtained was analyzed with descriptive method.
- In addition, questions asked for identifying the changes in children's information regarding cloud computing were analyzed by applying Dependent Groups T-Test.
- Data obtained was evaluated.

After identifying the population and sample of the study, the study was conducted in accordance with the application steps. Data obtained was analyzed and interpreted with the appropriate analysis methods. It was assumed that the most effective results can be obtained if the study was carried out in children's own classes and during course hours. Furthermore, students were encouraged to give intimate answers by emphasizing that the questionnaire wasn't an exam.

The change which the presentation created on children was evaluated in two ways. First one is a mini exam hidden in the questionnaire consisting of general and simple questions about cloud computing. The aim of the exam is to identify whether the presentation gives general information about cloud computing. In addition, in the first phase of this exam it was aimed to identify how much information students have about cloud computing and confirm the assumption of choosing cloud computing as a technological fact that students do not know. In the second analysis, the change of students' choices in using cloud computing as a solution was interpreted. The rates of preferring cloud computing by the students at the end of the first test and what kind of changes happened in their preferences after the general information they received were the subjects examined by the study.

After the questionnaire was competed, reactions received in dialogues carried out with children attending the study were taken into consideration and this information was also involved in findings.

Findings

The study was carried out with 60 children, 31 female and 29 male, in their own classes during course hours. Demographic data was obtained for detecting children's computer knowledge, interest and access status and the data was analyzed with descriptive method. General information regarding participants was given in Table 1.

The number of participants	60			
Average age	14			
Daily Computer Usage Time	4,43 hour/day			
Daily Internet Usage Time	4,67 hour/day			
Gender	**Female**		**Male**	
	N: 31	% 51,7	N: 29	% 48,3
Having computer	**Yes**		**No**	
	N: 55	% 91,7	N: 5	% 8,3
Having mobile phone	**Yes**		**No**	
	N: 50	% 83,3	N: 10	% 16,7
Having an interest in working with computer	**Yes**		**No**	
	N: 33	% 55	N: 27	% 45

Table 1: General information regarding participants

As a result of the questionnaire, it is seen that while computer usage of participants was 4,43 hour/day, internet usage duration was 4,67 hour/day. From this result, it can be understood that internet usage is more than computer usage because they use the internet with other devices such as tablets and mobile phones. 51,7% of the participants are female and 48,3% of them are male students. As a result of the questionnaire, it is seen that 91,7% of the participants have a computer in their houses and only 8,3% do not have computers. In addition, 83,3% of the participants have mobile phones and 16,7% of them do not possess mobile phones. Participants were asked whether they want to work in a job related to computers and 55% of them said they want to work with computers and 45% of them said they do not want to work in a field related to computers even if they use computers actively.
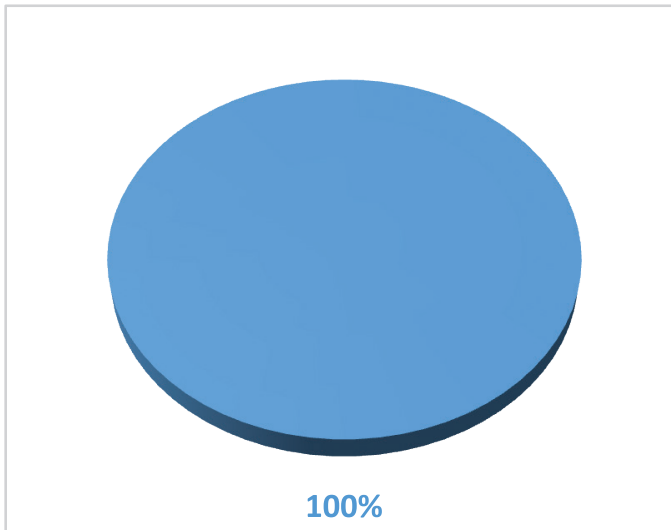
Figure 1: Methods used for internet connection

100%

Figure 1 shows the channels that participants use for internet connection. Those using computers for internet connection have the highest rate. While the rate of participants connecting to the internet by using mobile phone is 38%, the rate of tablet usage is 15%. In addition, the rate of preferring other choice is 1%.

**Figure 2:** Allowance situations of families for internet usage
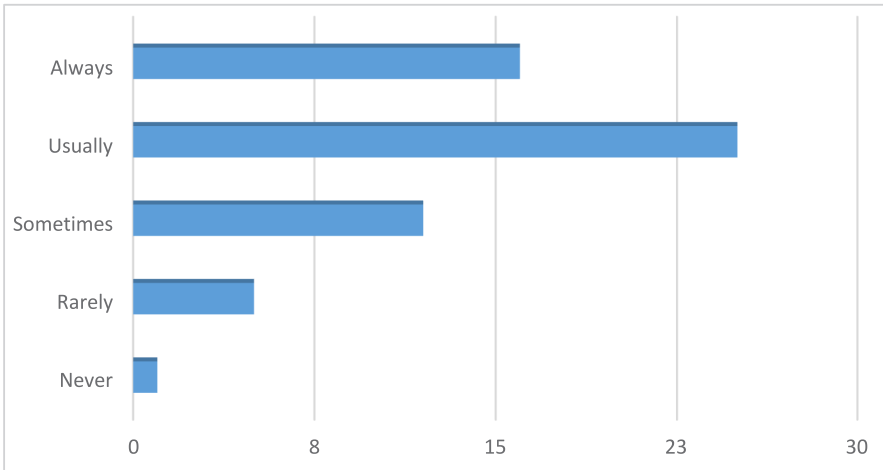
Participants were asked whether their parents allow them to use internet. According to the data obtained, it can be said that the parents of the participants generally allow their children to use internet. There are also some parents who do not allow their children to use internet, but the rate of them is too low. Answers show that parents are comfortable about internet usage. Data collected showed that "generally" and "always" were the options chosen most (Figure 2).

**Figure 3:** For what purpose computers are being used
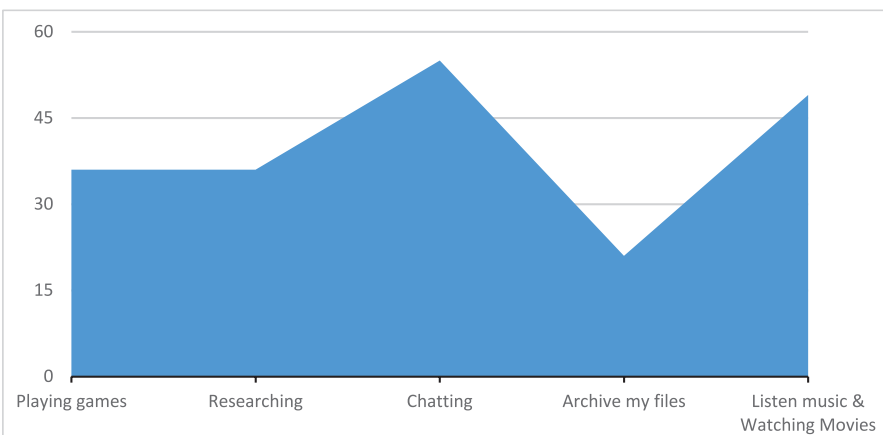
The participants were asked what kind of activities they carry out on computers and answers given are shown in Figure 3. While 54 participants stated that they use computer for communication, 50 of them said they use computer for listening to music. 37 participants said they use computer for playing game or doing research. The number of participants using computer for archiving files is 22. Answers obtained from this question show that children use computers especially for communication and multimedia purposes.

Children were also asked how many individuals their families consist of and how many of them benefit from internet connection. According to the answers, their families consist of 3-4 individuals and 2,95 of them use internet.

Figure 4: Technological developments and following situations of children
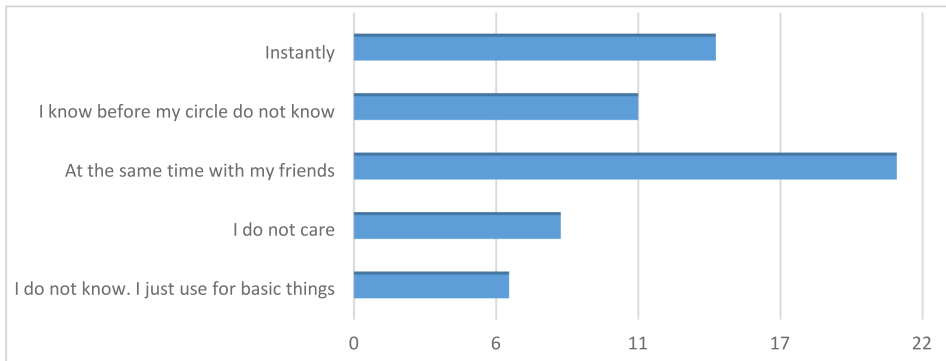
The participants were asked whether they follow developments regarding computer and internet. 21 students stated that they start considering at the moment their friends begin using. 14 students said they start analyzing when a new development emerges. When other answers are examined, it is seen that 11 participants learn before their environment is informed about the new development about internet or computer. In addition, the number of those who do not care is 8 and the number of students who do not know anything new about computer or internet is 7 (Figure 4).

Figure 5: The opinions of children about the invention reason of computers
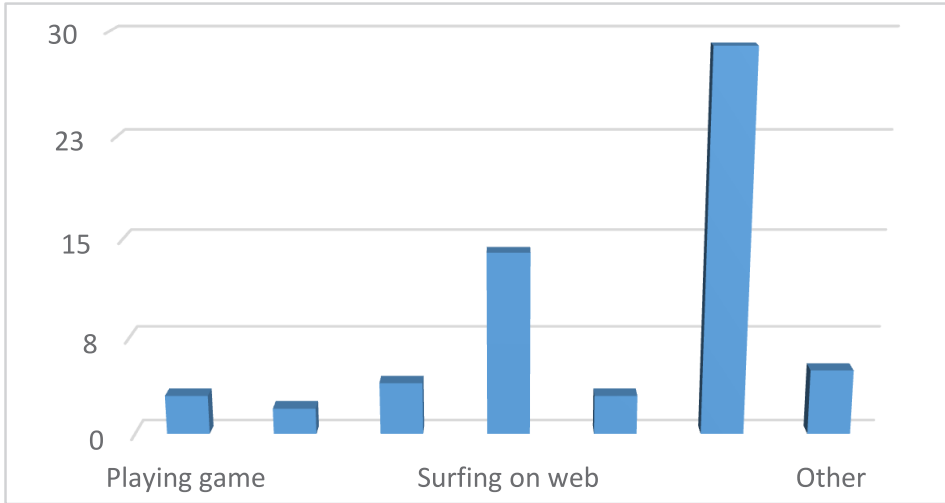
The answers given to the question "Why were computers invented?" are shown in Figure 6. The majority of participants (33 participants) thought that computers were invented for communication purposes and 17 participants said they were invented for surfing on web. When age averages of participants are taken into account, the answer of "playing game" is expected but only 3 participants gave this answer. 5 participants said they were invented for watching movie. While 4 participants stated computers were invented for computing, 6 participants thought archiving files was the reason of invention. The participants (7 students) who chose other option gave answers such as "leaking information from different countries or bad intentioned groups", "getting information about other cities and countries", "killing time", "all of them", and "useful for humans".

During the application, a questionnaire consisting of 7 questions was organized for testing the knowledge of children on cloud computing before and after the presentation. According to the answers given, children got points from 0 to 7. The findings obtained before and after presentation were analyzed with Dependent Groups T-Test.

	Groups	N	$\overline{X}$	SS	t	Sd	P
Information Questions	Before	60	4,28	1,263	-11,698	59	,000
	After	60	6,05	1,443			

Table 2: Dependent Groups T-Test results of the scores that the participants obtained on the test

It was observed that the results of the information measuring questionnaire averagely showed an increase after the presentation when compared to the results obtained before the presentation. The difference emerging after the presentation is statistically meaningful according to the Dependent Groups T-Test ($p < .05$).

Discussion and Conclusion

Within the scope of the study, the approaches of 60 participants on "Cloud Computing", which is a new concept for them were observed. First of all, participants' demographic information and attitudes toward computers were analyzed. The majority of children (91,7%) have computers and it was identified that all of them use computers. Internet usage rate (4,67 hour/day) is more than computer usage rate (4,43 hour/day). This shows that children are also using internet through their mobile phones or tablets.

In table 2 it is specified that the majority of participants did not have information about cloud computing before the presentation and thanks to the presentation, a statistically meaningful difference was occurred in their information regarding cloud computing. General information about cloud visually created a difference on a group that is really familiar with computer and internet environment. The presentation lasting 15 minutes enabled them to get general information regarding cloud computing and create ideas about how to integrate it into their lives. After the study, children exchanged ideas with one another with the mini discussion they started unconsciously. They discussed where cloud can be used and for which problems solutions can be offered. This shows that this rising generation

that is very familiar with the technology can easily adapt new facts thanks to kick-off movement and integrate them into their lives.

According to the findings, it can be concluded that children consider computers as a communication tool. The question "Why were computers invented?" was asked to the children and the majority of them gave the answer "communication". A similar answer was given to the question "For what reason do you use computers?" All of these show that children see computers as a door opening to the outside world. At this point, it can be concluded that computers are mainly used for communicating rather than computing which was its invention reason.

According to the answers of the question regarding to what extent parents limit computer usage, it can be said that most of the parents do not limit internet or computer usage in their houses. However, the answers to which children gave about for what purposes they use computer show that not limiting computer usage does not really have disadvantages.

According to the results of the study, it can be stated that the application performed with the sample group showed that children behaved in a curious and enthusiastic way when they first face to a computer fact and they produced ideas about how to use the fact with the know-how they obtained.

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