

An Investigation of Knowledge, Attitudes and Students' Performance in Relation to IT and Barriers to Use it in their Free-Time.

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Abstract:

Introduction: Today, knowledge and information technology assists people to pass their free-time. this study aimed to investigate knowledge, attitude, performance and the barriers of using IT in high school female students' free time in Tehran, 1383.

Methodology:

The research method is descriptive-survey where a self-made questionnaire was used. In this research cluster and stratified sampling method was applied using Morgan table that 300 sample students were selected out of 124000, through the table.

Results:

The results showed that the majority of students "84.2%" were less familiar with IT. Most of them had a positive attitude to the technology. The relation between their knowledge level and the way of IT usage was negative ($R=-/169$) and as well as the relation between knowledge level and the level of their IT usage was positive ($R=/23$). Most of them considered lack of motivation, technology limitation and high costs of IT as a barrier of using IT.

Conclusion:

It seems that the majority of samples had a low knowledge to use IT and considered its high costs and technology limitations and lack of motivation effective, in low using of this technology.

Keywords:

Students, Information Technology (IT), Free time.

Introduction:

Although the man rose against nature to supply his needful since the early presence of himself on the earth and a kind of occupation appeared in his routine life, but the nature of this occupation as well as the level of paying to this occupation, has been such a form that can be concluded, not only causes his fatigue, depression and pointlessness, but also some kind of recreation. Labor and occupation in agriculture in the era of human social life even has not been what appeared in the industrial age. During this period in terms of the characteristics of labor and employment it

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cannot be spoken about free time ,as a concept that it means today, yet; because the agriculture is employer and the owner of his work and therefore works willingly, and get started and stop the work by his authorization. Self-employed was limited to certain seasons. Since many old days, the era that the primitive man succeed to discover the fire and sharp-pointed tools for hunting and creating various pots, ..., more opportunity arose to rest at the same time. Because successive inventions decreased work hours of man's life and different art and hobby activities such as painting and sculpture appeared. (1)

Generally, it can be said that before the industrial revolution, free-time had not been separated from labor. During this time people were always working and when the nature did not allow them to work, they stopped by force, but after industrial revolution, the work time was determined, work duration estimated as one of the foundations of production and as a result free time separated from work time. In the early of industrial revolution, work time was so high that no free time remained in practice, finally, after frequent conflicts and struggles the work hour limited more and the concept of leisure with new dimensions and implications formed in society. Rapid industrial and technology change and alterations specially computer and internet, beside of increasing free-time, has created a dramatic change in the way and the quality of passing society free-time. (2)

Therefore, leisure in its modern meaning is a new phenomenon as a result of industrialization and urbanization and it cannot be compared with past centuries unemployment. In this meaning, free-time is a time that a person acts as he wishes and there is not any commitment, as a result it passes by a kind of accord and satisfaction, hence free-time can be taken into consideration as the most important and pleasant times of human. These times may contain contemplation, thinking, creating and innovation for some people and for other people contains the reproduction of physical and mental power and for some other simply includes hobby and recreation.

Leisure in contemporary world includes properties different from past era such as following.

- In modern societies not only leisure belongs to elite and pamper classes anymore, but also is generalized to other classes.
- Change and convert free-time from informal to formal and business: previously leisure time was passed in the form of intimacy and companionship and conversation with friends and acquaintances but along the societies' development, passing the time changed into formal and many systems appeared to make people's free-time joyful.
- The use of electronic devices: spreading of electronic devices such as computer and TV and ... plays a great role in passing the free-time.
- Separating free-time from work: the advent of technology has affected individual and social life until results a discussion which named free-time sociology. (3)

A study has done by Manoochehr Ashraf-ol-Ketabi about the investigation of changes of how to pass free-time in three generations in Tehran families. The results of the research are:

21/3% of first generation males, do the religious practice in their free-time that this group are the second populous group in the issue of passing free-time in this generation.

In the second generation some people passed their free-time in this way, they are the fifth populous group in this generation and the 10th in the third generation base on frequency of population.

Among the females of first generation people who passed their free-time with religion practices are the second populous group.

The other considerable result is that participants in training courses such as sewing classes, computer, body building and ...are seen only among the third generation members not in first and second generation.

The author concludes base on research findings that has traveled from different simple types and low variety of free-time in the first generation toward a set of several types of activities in different aspects in second and third generation, (4).

Generation's leisure and generational gaps have been investigated in most of the studies (5,6). Base on these studies, tastes, political attitudes and belongings change with age and youth culture is very focused on mass culture that is based on visual and electronic media. Also, young people are more influenced by peer groups and the mass media than families and collective and local values and their free-time is dominated by individualism process and the development of gender identity.

In the present era the basic role of internet is as much essential that planning, development and productivity in cultural, social, economic and scientific fields are impossible without it in future world. However, adverse and destructive consequences should not be ignored, especially in social and cultural fields that the following are some of the undesirable effects of the internet:

- Addictive: to addict people to the Internet and surfing in the internet for hours.
- The loss of human intellectual independence and one-sided dependence on network and available information in it (7).
- There are multiple damages in psychology perspective such as: Unknown Identity, anxiety or depression, isolation, strengthen the sense of violence, loss of emotional characteristics.
- Sexual abuse, that mostly was found in children and adolescents. According to the studies carried out in this field in west, most of the teens who are sexually exploited and betrayed are under 18.

The physical effects of using computer and internet are: wrist strain, shin, nape, the risk of arthritis, scratch the iris and lens of the eye, rising the eye degree, hunch out, scoliosis, the risk of

lumber disk, spinal cords' bone bending, skin and infectious diseases, and cancer, hair loss, Sterilization disruption and damage inflicted on the fetus of pregnant women.

IT causes information pollution or influx of too much information for human beings that the pollution of information result a variety of side effects such as insomnia, loss of concentration, destruction of the immune system, indigestion, heart disease, anger, irritability and performance malfunctions.

In this case doctor Rosen says “the human brain in front of computers, cannot perform multiple tasks at the same time, we already have a lot of pressure on our human abilities” (10).

On the other hand internet provides many opportunities that the most important of them are: internet creates job and causes unemployment.

Because attracts many of youth, deals with a new emerging phenomenon “cast out” which turns annoying presence of youth in the streets and crossroads into presence of them in front of the computers connected to internet.

It makes the offices and publications paperless and this results less destruction of forests by human hand.

Ensures intellectual development of users. Integrates standards of life.

In individual and group migration eras, it comes the isolated parts of the families together (11).

Causes on time information and knowledge.

Make exclusive opportunities for females in developing countries that go beyond their traditional determined roles of and find their real position in society with active association in all the economic areas. Working with Internet makes cultural transformation. Makes faster and easier communication.

So this technology acts as a double-edged sword that can have positive and negative effects. And officials are required to know the effects of this technology on leisure time and do the required plans to extend the optimal use of these technologies, so that people and society are protected from its undesirable effects.

The effective factors of using IT in the world:

The following factors can be effective on the rate of using IT in the world:

Literacy: the limitations of literacy and language, are taken into consideration as important factors and common barriers for public to use internet.

Rate of local telephone calls: the rate of telephone calls is an important factor for users. Obviously, where the rater of telephone calls is high, using the internet will not be economic for public. Base in the

studies of IT² and democracy center in Europe, the telephone calls rate, is a big barrier for most of the people who use internet. Across the world, the most popular way to access internet is dialup³ and therefore call explanation method, is a limiting factor. Also it can be said that paying two expenses base on time is necessary for internet connection:

A: paying telephone bill to telephone centers

B: paying internet access cost to ISP⁴.

Of course, in many parts of the world these two costs, are different base on the connection time during day and night or week days. Undoubtedly, the rate of end of conversation will be effective on ICT.

Competition in the ISP market: internet service providers are called ISP. Therefore it can be said there are three different ISP: the first category or highway, the second ISP or downstream and web host, the third ISP or online service provider⁵.the competition in the area of these three types of ISP is important in a country to extend ICT. Healthy competition in ISP market can result in cheap prices, quality improvement, communication speed promotion and finally, development of ICT.

According to mentioned explanation, the present paper investigates, knowledge, attitudes, and performance of female high school students toward IT, Tehran, 83-84school year.

Zanjanizadeh.H and Javadi. A.M (12) research has shown that:

44/7% of respondents used internet and 55/3% did not. The rate of using internet is 46/7% among girls and 53/3% among boys.

62/2% of users have been using internet at home, and 21/1% in cybercafé and 16/7% in both. 1/1% of users do not spend their free-time on the net. The rate of spending free-time of 43/3% of respondents in internet has been low, 49/4% has been some extent, 12/2% of users has been high and 2/8% of users has been very high. The research results shows that internet users have tended to chat and e-mail more, because the lack of information about the ways of proper utilization of this technology, as the average of Internet usage was 498 minutes per week and the rate of chat has the most average among the internet users with 127 minutes per week. The average use of the internet environments among girls per week, is about 74 minutes e-mail, 75 minutes educational-scientific information, 32 minutes news environments, 32 minutes watching movies through internet, using jack 47 minutes, erotic images 16 minutes, listening to music 138 minutes, postal card 31 minutes, downloading softwar18 minutes and 122 minutes weblog.

² Information technology

³ Dialup

⁴ Internet service providers

⁵ online

The average use of different types of internet environments among the boys per week is about, 54 minutes e-mail, 122 minutes chat, 67 minutes game, scientific- education information 60 minutes, news environments 31 minutes, using jack, 36 minutes, erotic images 50 minutes, listening to music 50 minutes, postal card 19 minutes, downloading software 39 minutes and 49 minutes weblog.

Base on Azarnia research (13) 44/1% of youth in 15-29 group age use internet. 57/5% males and 42/5% females have formed all the members of this group. 76/2% have been single and 23/8% married. 31/2% of non-users tended much and far much and 31/6% tended less and too less to use internet.

70/5% of respondents are using e-mail and 74/1% are chatting. The rate of interest to chatting with friends is about 52/9% and chat with opposite gender people is 3/55 % that was too high.

The rate of chat interest in professional and scientific topics was about 30-40%, art and literature topics 23%, finding friends 45.9%, hobby and recreation 66.9%, topics about sex and love 39.4% which was too high.

47% of users have internet friends. Out of entire people with internet friends, 40.7% have more than three opposite gender friends. 35.7% of people with internet friends, have met each other after friendship on the internet. 38.3% of respondents refer to weblogs or blogging. 19.9% of users have personal weblog. 92.1% of users surf on interne. The average of online search has been 16.6 hours a month. The average of search hours by topic has been : professional and scientific issues 4/8 hours, social and political issues 8.5 hours, hobby and humorous 2.5 hours, artistic and literary 7.3% hours, movie 7.4 hours, music 4 hours, image 5.4 hours, types of fashion 4.4 hours, catalog 5 hours a month. 5.18% of respondents use online games. The average time of using games has been 4.8 hours a month.

Most of the users about 56.1 ignore seeing filtered sites. 25.1% use anti filter and 18.7% refer to other sites with similar content. The rate of internet interest between male and female is not different.

According to the studies about 36% of respondents have some spare time at home for hobby and entertainment. The chat statistics is really high in Iran and it is said that 80% of users are involved in it. The percent of online research in Iran is less than 5%, while in advanced Europe countries this figure reaches over 80%. Also, computer games allocated a very high statistics to youth" (14).

The investigations of social sciences and social communications researchers show that the majority function of chat for Iranian users is to pass free-time and hobby which in positive and negative forms, facilitates and compensates their communication needs in the real word.

Base on the results of tendency survey of youth, it was found that 24 percent of youth and teenagers are turning to the chat room for entertainment. Also, social sciences researchers studied the tendency of youth to chat and concluded that 88% consider chat as a game (15).

Method:

This study used a descriptive and correlational survey. The research sample is 300 high school female students in Tehran 1383-84 school year who were selected by cluster sampling method. After sampling a self-made questionnaire was used for collecting the data, which is formed in four parts: knowledge, students attitude to IT and their perspective to barriers of using IT and the type of using IT; and after collecting inventory, the research hypothesis and questions are answered by using SPSS software and descriptive tests such as frequency and correlation coefficient.

The reliability and validity of the test

In order to make the above test and its validating, scoring and reliability, a sample of 30 female high school students of Tehran were selected and the initial questionnaire was administered to them.

After transferring data to a computer, evaluation was conducted as follows:

To check every single question and to determine the accuracy of them, three methods were used: A: Reliability Calculations B: Validity Evidence C: Item Analysis.

To analysis the item number 2, calculation is as follow:

A: Discrimination Coefficient

B: loop Method

After reviewing the data analysis using the above methods, Some of the questions were eliminated and the final educational performance test was ready. Cronbach's alpha was used to estimate the reliability of the test. After computing the reliability, the writing part was 0.8186 and barriers part .79 and the reliability of the use of information technology was 0.69.

In order to obtain the validity of the test, two methods have been used: content validity and face validity. To review the validity of the content the specifications table and to review the face validity the specialists were used.

Results:

- The findings of the research show that 84.2% of students of the sample had low familiarity, 9.7% of students average familiarity and 6.1 of them had high familiarity to IT. The average familiarity and standard deviation of students are 17.17 and 21.04, respectively.
- The obtained results from analysis of the students' use of information technology show that most of the students spend (81.9%), a low percent, 9.7% an average percent and the others 8.4% a high percent of their free-time for using IT.
- The correlation coefficient between the students' knowledge and their use of the technology (table 1) shows there is a significant relationship between them.

Table (1): the correlation coefficient of two variable, the knowledge rate and rate of their use of IT.

Table 1: the correlation coefficient of two variables of knowledge rate and the rate of the use of IT.

variable	R	N
time	253	235
knowledge	239	235

- The correlation coefficient between students' knowledge from IT and their optimal use of the technology (table 2) shows that there is a negative relationship between them.

Table 2: the correlation coefficient of two variables knowledge rate and the rate of positive use of IT.

variable	R	N
knowledge	285	169
Positive use	171	169

The results of investigation of the students' attitudes towards information technology shows that most of the students (88.3% and 57%) agreed with usefulness role of IT and its flexibility role in spending free-time, respectively. Therefore most of them showed a demonstrated a positive attitudes toward using technology in their free-time.

- The results of investigation of the barriers of using IT shows from students' point of view that they have majority of votes (98%, 100%, 95%, respectively) in average and very high technological, lack of motivation, and consider the high costs of IT as an effective barrier in using of IT.

Discussion:

This study aimed to investigate knowledge, attitude, performance and the barriers of using IT in female high school students' free-time in Tehran. The results has shown that most of them (84.2%) had a low knowledge of computer and internet. The low knowledge of students are mentioned for the following reasons:

- 1- Lack of policies at the macro level.
- 2- Families ignorance about the place of the technology in children development in educational and personal growth field.
- 3- The IT educational expenses like training courses, training books and ... are not match with families income.
- 4- The students do not feel any need to learn internet and computer because the environment and educational and society is in such a way that they do not feel this need.

Another finding of this research indicates low use of samples from computer and internet . this result shows that IT has a low importance and position in spending students' free-time because of the following reasons:

- 1- Low knowledge of students' about this technology.
- 2- Children's education and culture is usually affected by their surroundings such as family, school, ... and because the importance of this technology for different groups in society is not yet clear, the affected students by these factors do not care for this.
- 3- The next reason is a result of economic factors.

The next finding of the research has found a positive relationship between two variables of knowledge rate and rate of using IT which this result is in the line with results of the researchers like Jaafari and Dayani (16). This shows by increasing students' knowledge the students' duration of this technology usage increases . Therefore the index of using IT, which is one of the indicators of progress of the countries in communication era, can be raised by increasing students' knowledge of using this technology.

- The negative relationship between two variables shows the rate of knowledge and optimal sue of this technology that young Iranian users really do not know what possibilities of the internet are there. They usually don't have a clear goal. They use entertainment sector, immoral issues and useless conversations in chat rooms for this reason. The chat rooms are the busiest places of internet in Iran.(17). Islami (18) shows in a research among students that the most students' use of internet is to chat and make a communication. Babai's study suggests that Iranian are interested in chat and except a few specialist, others do not enter the specialized environments (19).

If most of the youth use the internet in this way, the reason shouldn't be researched in their mind structure. They have not educated at home and school, effectively. No organization undertake their training to show them the Extensive facilities of entrepreneurship, generate revenue, continuing education, and even useful and informative entertainment on internet. (20) On the other hand,

we faced internet unconsidered as same as video and satellite. Instead of driving learning on this highway and learning how to answer to needs match with its services, just speak about risks and rendering crashes on the internet.

The rate of change and cultural industry improvement is faster than the culture of using cultural industries and people can provide computer and internet in a short time, but learning true culture of using computer and internet takes a long time.

Some media experts, consider censorship as the solution of this problem, but recently experts in communication field, consider computer literacy education, especially Internet, awareness use of online products and detection of fraudulent practices for the reconstruction of reality, as the only way to resist and protection of users against internet risks. (20)

The results of investigation of use of IT barriers are in the line with the results of Motamed Zadeh, Hakimi, (22), Jaafari and Dayani (16).

Conclusion:

The research findings indicated that the sample status is not in an unfavorable condition in terms of the familiarity and usage rate and the type of using of IT. It is worth noting the research is descriptive, therefore the results and interpretation applies only to sample and at the same time.

Recommendations:

- The government should develop strategic plans to provide telecommunication and internet infrastructure in order to enable users benefit computer and internet facilities without software problems.
- The government create programs like free education for low-income families and establish institutes till the less fortunate people use computer and internet facilities for free.
- Parents and officials familiarity with the issue of the Internet, proper training to use of IT, increasing and updating information according the rapid development of information technology and the Internet.
- Provide training on how to use, advantages and disadvantages of internet and IT issue for students through text books and handouts and courses.
- To equip IT training centers to up to date technology and provide the providing necessary infrastructure for the availability of a reasonable and balanced Internet for students by considering time, access level, appropriate location and place to encourage students for the beneficial use of IT, search the articles, online education, information exchange and stuff like that.

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