

Association Between Generation Gap in Interest, Familiarity and Application of Information and Communication Technology

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Abstract: Given the introduction of information and communication technology and its rapid progress in every society, its use and application is different between various social institutions in that it demonstrates the difference between previous and present generation. Hence, the research was conducted in the school year 2012-2013 with the aim of applying information technology among female high school students and their mothers in Gorgan Province. The research method is a descriptive-analytical method; using a cluster sampling, of 34 female schools 8 schools were randomly chosen and 260 students were included in the study out of 1625 students. Using collected questionnaires and information obtained from independent t-test, the results indicated that there was a significant difference between the mean of familiarity, interest and mothers' and their children's use of information technology.

Key words: Generation gap, information and communication technology, interest, familiarity, application

INTRODUCTION

Since, the beginning of human civilization, its information and use have considered an important human issue. Existence and production of a great deal of information on different fields have changed the present era into information age; the reason why we call the present epoch information age is the spread of information and speed of its communication through various information carriers (Yusefi and Rezaeeraad, 2010). The present age is a blend of communication and information. Today, by benefitting from various advanced information and communication technology, the possibility to establish fast information communication has been accomplished more than ever as the increase of communication device production and eventually the ease of access have led many people with different ages to enter the virtual world (Hassanzadeh and Rezaee, 2010). As a matter of fact, information and communication technology is conceived of as an important weapon in the battle against the world challenges. If the technology is effectively used, one can to a great extent reduce the

existing issues of less affordable and developing countries and even developed countries in that the promotion and facilitation of information stream were conducive to the realization of real information community (Esfandiarimoqadam, 2007).

Today with the staggering expansion of various technologies in all aspects of social life, family believed to be the first and smallest unit of a society is itself influenced by these technologies as according to a report by the United States Department of Commerce in 2000, people over 50 years of age had the lowest rate of the internet use compared to other age groups (Hariri and Nastaran, 2012).

According to Jackson (2010), after a decade there has been an attempt to break up the youth's monopoly of new media use, in that middle-aged adults from 50-65 years of age showed unprecedented growth in using internet; however, the youth take advantage of new information and communication technology at upper level in a different fashion compared to previous generation (Jackson, 2010). Probably the most important difference between the two generations, children and parents is due

to needs and demands. A subtle point made in the field of needs and demands with respect to technology is that most parents just seek technologies that they actually need as new generation require what technology looks according to their desires (Horgan, 2006). From psychological and sociological point of view, there is a difference between insights, manners and demands of two generations; naturally no generation is a full length mirror of previous generation's aspiration, nor is reflecting their attributes and conducts. Every generation has its own type of psychological conditions and characteristics, which definitely encompasses both positive and negative aspects. Development requires that new generation does not function as a reflecting surface of previous generation, particularly when pace of development gain momentum in all aspects of human life. Accordingly, difference between generations is felt more than ever (Hariri and Nastaran, 2012).

The most commonly used concept of generation difference is generation gap. In Oxford Dictionary, generation gap is referred to as differences of outlook or opinion between younger people and older people which results in lack of mutual understanding. In Webster Dictionary it is defined as a wide difference in attitudes and opinions of generations (Haghighian and Ghafari, 2010).

The momentum of human science development and new technology advances has brought new scientific achievements to human being but introduction of new scientific and technological fields have often faced ethical issues and limitations. Services and achievements of new technologies assume an important role in the promotion of human's level of life quality and seeks to fulfil his needs, problems and demands. On the contrary, technical services and strategies raise issues such as scientific morality and ethical and application culture; one of the common concerns of parents in every society is how children should utilize the world networks. With multiple features and alternatives that new media provide for members of a society, users are frequently acquainted with new stimuli and a variety of social and ethical behaviors, the greatest effect of which is exerted on the generation faced with multiple stimuli compared to previous generation (Pournaghdi, 2009).

The pace of vast changes and developments which is quickened in the modern society has had increased the gap between generations, making present generation's desires and interest distinctly different from those of previous generation morally, socially and culturally. Generation gap is a notion that concerns obvious psychological, social and cultural differences as well as significant differences in insight, knowledge, beliefs, opinions, expectations, value orientations and

behavioral patterns between two generations living simultaneously in a society (Tavakol and Ghazinejad, 2011).

The interest of younger generation in the manifestations of information and communication technology and their vast use of the technologies are more or less conceivable in every society.

The vast access to information technology is believed to be the fundamental difference of younger generation to the twenty-year-ago generation (Hariri and Nastaran, 2012).

According to Li, the application of information and communication technology in the modern world extremely affect social relations and goes with damages and disorders needed to be pathologically identified. The result of the work showed that the use of information and communication technology and the use of mobile phones have led to a decrease in social relations (Li, 2009).

With regard to the significance of the subject matter, some studies and research have been undertaken and can be reviewed as follows:

Literature review: Hariri and Nastaran (2012) examined a digital gap between generations in terms of familiarity, interest and use of technologies among 120 male third-grade secondary and first-grade high school students in District 10 in Education Department of Tehran and their parents (mother or father). The results of the research indicate that there is a significant difference between the mean of familiarity, interest and use of information technology among children and parents (Hariri and Nastaran, 2012).

Fakhraee and coauthors conducted a research entitled "Pattern of the Use of the Internet, Computer and Computer Games among Students of Two High Schools in Shiraz" on 184 students. The results indicated that 55% of individuals work with the internet >3 h a day. The 84% of them referred to a sense of happiness, excitement and liberation from sadness and sorrow and 16% of them to a sense of emptiness, depression and irritability during the times when they are away from the internet.

Effatnejad (2002) conducted a research entitled "Study of the Level of Graduate Students" information technology use at Shiraz University; the results indicated a very high rate (94.6%) of respondents' use of computer and internet technology.

Haghighian and Ghafari (2010) conducted a research entitled "Study of the Cause of Generation Gap among High School Students in Malard City" in survey fashion on 1603 students; the results suggested that the variables lack of mutual understanding of parents and children, parent's value supervision of children, level of children's access to mass media, special conditions of society, children's modernization, globalization and modernity,

deconstruction and increase of children's education level were significantly related to the level of generation gap between the young people and their parents.

Pooornaghdi and coauthors conducted a research entitled "Ethics in Information and Communication Technology and Pathology of Communication Ethics" on 80 general users of information technology. The results indicate that more than 85% of users are subject to moral damages and IT anomalies, among which the share of children and adolescents was greater than that of other in this sampling.

Moemeni and coauthors (2011) conducted a research entitled "Effect of Information and Communication Technology (TCT) on the Identity of Students" in a survey fashion on 381 students of Islamic Azad University, Tonekabon Branch, Chalos, Amol, Babol and Sari, through a researcher-made questionnaire; the results of univariate t-test and variance analysis indicated that ICT has a positive impact on identity.

Azkiya and Hosseiniroudbaraki (2001) conducted a research entitled "Generation Change in Lifestyle of Rural Communities in Ahangar Mahalle Village" in that a generation study on the changes of lifestyle was carried out using quantitative and qualitative methods and applying interview, observation and researcher-made techniques. The results indicated that the components of lifestyle among the third generation are different from the first and second generations residing in the village. However, the difference does not suggest a generation gap in the village as opposed to urban population, the first and second generations were somehow linked to the third generation in applying modern lifestyle and in some case they were impressed by them. Nevertheless, according to transient leisure pattern, collectivist pattern changed into individualist pattern and media-based leisure pattern was predominant leisure pattern in rural third generation.

Blash (2009) conducted a study entitled "Study of the Effect of Information Technology Application on Intergeneration Ethical Attitude Gap" on 180 single-child male students in male secondary schools in districts 3, 4 and 15 in Tehran Department of Education and their fathers. The results indicated that the indicators of information and communication technology made a difference to fathers' and sons' intergeneration ethical attitude gap.

Punamaki *et al.* (2009) conducted a research entitled "Association Between the Type and Degree of Information and Communication Technology (ICT) use and peer and parental relation in early adolescence" on 478 Finnish 13 year old boys and girls. The results showed that the intensive use of information and communication technology as an entertainment (digital

games and surfing the internet) was associated with weak relations with peers and parents, while the use of the technologies in an attempt to establish social communication (email and chat) was associated with good relations with friends and weak relations with parents in the sense that high frequency of computer games among girls was linked with weak relations with mothers and weak relations with fathers in case of boys.

Clark (2009) conducted a research "parents' strategies for the young people's use of information and communication technology" in a qualitative research method by doing interviews 55% and 125 teenagers. The findings of the research indicated that digital gap between generations is deeper in the households with weaker economic situations, while parents and children in these households can confront the challenges of digital gap effectively and desirably by applying appropriate strategies.

Aarsand *et al.* (2007) conducted a research entitled "Computer and Video Games in Family Life: Digital Divide as a Resource in Intergenerational Interactions" in the course of an ethnographic study in that intergenerational activities such as computer and video games were recorded and analyzed in several Swedish families. Intergenerational divide was then observed with respect to dominance of digital technology of children and parents group. That is children had control over game activities with respect to the existing digital divide and parents or grandmothers and grandfathers who found themselves unacquainted in this regard attempted to reach out to the children with respect to digital games in the intergeneration confrontation, digital divide was seen as intergeneration interaction rather than a problem.

Today, one of the common concerns of parents in every society is how children use the worldwide network. With miscellaneous features and alternatives that new media provide for people of society in the age of information, users are continually acquainted with new derives and a variety of social and moral behaviors. The space is conducive to an unknown and continuously changing identity which mostly affects a generation facing multiple derives in comparison with previous generation.

Part of the differences ensues from recognition and employment of new technologies as they were hardly seen with such a magnitude and prevalence among everyone. Since, young people make use of new information and communication technology at higher level in a more different way than previous generation it is considered as the basic difference between young generation and previous generation in the sense that phenomena such as globalization, virtual world, new structures of communication technology, global changes

all have made it necessary to examine the application of information technology among students as young stratum of society as well as their parents.

In the modern world, given the introduction of information technology and its rapid progress in all societies as well as in Iran, the use and application of it demonstrate the difference between past and present generation across different social institutions. It is evident that family as the first and foremost social institution is no exception. Knowledge about the intergeneration application of information and communication technology can help us understand the effects of technology in relationships between parents and children. Thus, given the importance of the subject matter, the research was conducted with the aim of determining the application of information technology among female high school students in Gorgan City and their mothers in the education year 2012-2013.

MATERIALS AND METHODS

The study was conducted in a descriptive-analytical fashion which is a cross-sectional-type study. The study population consisted of female high school students in Gorgan City and their mothers in that a total of 34 female high schools were chosen using a cluster sampling, of which 8 schools were chosen randomly. Of a total of 3625 students, 260 students were included in the study in the sense that the schools were divided into four school types public, non-profit, Shahed school, gifted student (Tizhoshan). Given the decline of samples, 132 samples from public schools, 126 non-profit and 26 Shahed and 16 gifted students (Tizhoshan) were chosen randomly. For data collection, we used Hariri's questionnaire which was used to examine digital divide between generations in terms of acquaintance, interest, use of information and communication technology and its validity and reliability (0.8) were already confirmed. The questionnaire is comprised of 4 dimensions; the first is related to demographic population, 16 items are about acquaintance with the examples of information and communication technology, 9 items about interest in the examples of information technology and 21 items on the level of information and communication technology use. The items of the questionnaire were set based on a 5-point Likert scale, ranging from very low to very high (on a scale from 1-5 points). Having obtained the permission letter from Department of Research and Technology of university and arrangement with authorities and principals of the schools and the consent of samples and complying with moral notes, the questionnaires were distributed among samples. After completion, collection and

codification were performed and then data were entered into the software program in that data analysis was conducted by means of SPSS version 16 according to the calculation of statistical indexes-mean, standard deviation, t-test-in order to test the hypotheses.

RESULTS AND DISCUSSION

The results of Table 1 indicate that the maximum percent of students (32.9%) were 16 years of age and the education discipline of most of them (37.2%) was Empirical Science and also the highest percent (34.9%) of them were studying in the second year of high school.

- H_1 : the level of mothers' and female high school students' acquaintance with information technology is different in Gorgan City

The results of Table 2 indicated that the mean of acquaintance with information technology was 32.81 for mothers and 42.85 for their offspring which means the difference of both groups is statistically significant ($p = 0.0001$).

- H_2 : level of mothers' and female high school students' interest in information technology is different in Gorgan City

The results of Table 3 indicated that the mean of interest in information technology was 19.32 for mothers and 27.58 for their offspring which means the difference of both groups is statistically significant ($p = 0.0001$).

Table 1: Frequency distribution of students' demographic characteristics

| Characteristics | Frequency | % |
|-----------------------------|-----------|--------|
| Age | | |
| 15 years of age | 40 | 15.60 |
| 16 years of age | 84 | 32.90 |
| 17 years of age | 83 | 32.50 |
| 18 years of age | 46 | 18.00 |
| 119 years of age | 2 | 7.00 |
| Education discipline | | |
| Human science | 74 | 29.00 |
| Empirical science | 95 | 37.32 |
| Mathematics | 56 | 22.00 |
| General | 30 | 11.80 |
| Education | | |
| 1st year | 31 | 12.20 |
| 2nd year | 89 | 34.90 |
| 3rd year | 77 | 30.20 |
| Pre-university | 58 | 22.70 |
| Total | 25 | 100.00 |

Table 2: Results of t-test: analogy of the mean of acquaintance with information technology between offspring and mothers

| Groups | Mean | SD | t-value | p-value |
|-----------|-------|-------|---------|---------|
| Mothers | 32.81 | 14.56 | -7.386 | 0.0001 |
| Offspring | 42.85 | 13.85 | | |

Table 3: Results of t-test: analogy of the mean of interest in information technology between mothers and offspring

| Groups | Mean | SD | t-value | p-value |
|-----------|-------|------|---------|---------|
| Mothers | 19.32 | 8.97 | -10.329 | 0.0001 |
| Offspring | 27.58 | 8.26 | | |

Table 4: Results of t-test: analogy of the mean of use of information technology between offspring and mothers

| Groups | Mean | SD | t-value | p-value |
|-----------|-------|-------|---------|---------|
| Mothers | 41.18 | 18.21 | -4.917 | 0.0001 |
| Offspring | 49.44 | 15.76 | | |

- Hypothesis 3: level of mothers' and female high school students' use of information technology is different in Gorgan City

The results of Table 4 indicated that the mean of use of information technology was 41.18 for mothers and 49.44 for their offspring, which means the difference of both groups is statistically significant ($p = 0.0001$).

Today, a wide range of interpersonal communications is facilitated via the web in the cyberspace as in many activities such as internet buy and sale, online banking, scientific tests, workshops and online tutorials, all of which have been widely embraced by users. The use of the tools and techniques of information and communication technologies has been increasingly ubiquitous as the presence of facilities in a house has today paved the way for employing information technology among young generation and offspring, in that if parents fail to reach out to their children in this regard it will lead new generation to outdo the previous generation. This may give rise to a variety of problems between parents and offspring; thus, familiarity, interest and application of information and communication technology among female high school students and their mothers were incorporated into the subject of the present study.

According to the results of the mean of acquaintance with information technology among mothers (32.81) and offspring (42.85) and the results of t-test, a significant difference was exhibited between level of mothers' and their children's acquaintance with new information technologies which is in line with the result by Hariri and Nastaran (2012), Turner *et al.* (2007) and Turner (2007). The findings of Hariri indicated that there is a significant difference between level of parents' and their children's acquaintance with new information and communication technologies and those of Turner also indicated that parents often think that they are too old to learn new technologies which in turn causes a divide in the level of new generation's and old generation's acquaintance with information and communication technologies.

According to the results of the present research, the level of interest in information and communication technology was 19.32 for mothers and 27.58 for offspring and the results of t test also indicated offspring's interest is significantly greater than mothers' which is consistent with the result by Hariri and Nastaran (2012) as their work indicated that the level of offspring's interest in the examples of information and communication technology is significantly more than their parents'.

According to the results of the present research, the level of offspring's use of information and communication technology was 41.18 for mothers and 49.44 for offspring and the results of t-test also indicated that offspring's use of information and communication technology is significantly greater than their mothers' which is in line with the results by Hariri and Nastaran (2012), Javadi (2004) and NajafiHezarjaribi (2007). The findings of Hariri indicated that there is a significant difference between the level of offspring's and their mothers' use of technologies and the result of Javadi also pointed to the high frequency of use of internet features among young people. Moreover, the results of Hezarjaribi indicated that there is a significant association between age and level of information and communication technology use across students. As for the limitations of the study, we can refer to the time-consuming nature necessary arrangement in order to implement the work with school authorities, especially in public schools. Moreover, due to the limitation of the research population, the results cannot be generalized to the whole female students and their mothers, so future studies are recommended to be carried out qualitatively in this regard. Additionally, research in the field of the application of information technology and its role in the gap between generations in various population on female and male students studying in different education levels based on parental gender segregation should be conducted so as to achieve more thorough results and findings.

CONCLUSION

Generally speaking, according to the results of the study and other similar studies it can be concluded that level of acquaintance with interest in and use of information and communication technology across young and offspring strata are greater than that across the households with respect to the rapid spread of technology and use of information and communication technology in the sense that households should take advantage of every opportunity to learn various instances of information technology that they experience every day and keep their information and skills keep up-to-date in

this regard in order to reduce the gap between generations, create mutual understanding and enter their children's, teenagers' and young people's world so that they can avoid a variety of damages that inappropriate use of information and communication technologies causes to adolescents and young people by raising their knowledge and skills in this respect. Therefore, we can lower the gap to a large extent by providing spaces of using information and communication technology for the public free of charge, holding training courses in the field of internet and computer use in an attempt to raise parent's computer knowledge, provide necessary measures for students' optimal use of internet and computer, ext.

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REFERENCES

- Aarsand, P.A., 2007. Computer and Video Games in Family Life The digital divide as a resource in intergenerational interactions. *Childhood*, 14: 235-256.
- Azkiya, M. and S. Hosseiniroodbaraki, 2001. Generational changes in lifestyle of rural society. *Res. Sci. J. Social Welfare*, 10: 241-226.
- Blash, F., 2009. Study of the effect of information and communication use on intergenerational ethical attitude gap. Master's Thesis, Department of Education Science, Shahid Beheshti University, Tehran, Iran.
- Clark, L.S., 2009. Digital media and the generation gap: Qualitative research on US teens and their parents. *Inf. Commun. Society*, 12: 388-407.
- Effatnejad, A., 2002. A study of the level of Shiraz higher education students' use of information technologies. Master's Thesis, Faculty of Educational Science and Psychology, Shiraz University, Iran.
- Esfandiarmoqadam, A., 2007. Bridge the digital gap: Reflection on the role of librarians and information providers in the third millennium. *J. Ketabdariva Etelearessani*, 10: 129-144.
- Haghighian, M. and A. Ghafari, 2010. A study of the causes of generation gaps among high school students in the city of Lamerd. *Tech. J. Social Sci. Islamic Azad Univ.*, 4: 173-190.
- Hariri, N.Z. and R. Nastaran, 2012. A study of digital divide between generations in terms of familiarity, interest and use of information and communication technologies. *Sci. Res. J. Iran Inst. Inf. Sci. Technol.*, 28: 3-20.
- Hassanzadeh, R. and A. Rezaee, 2010. Pathology of information and communication technology application among students. *J. Inf. Commun. Technol. Edu. Sci.*, 1: 91-97.
- Horgan, S., 2006. Interactive kids, passive parents. *Young Consum.*, 7: 8-14.
- Jackson, S.E., 2010. New media: Debunking the myths. *J. Bus. Strategy*, 31: 56-58.
- Javadi, A.M., 2004. A study of the level and type of internet use and its effect on the family values among high school students in district 3 in Mashhad during the education year 2003-2004. Master's Thesis, Ferdowsi University of Mashhad, Mashhad, Iran.
- Li, Y.B., 2009. How the cell phone became the most important interactive communication medium in today's China. *Technol. Society*, 31: 53-55.
- NajafiHezarjaribi, H. and M. Bagherpour, 2007. Study of the level of information and communication technology use among payam-e Nour students and presentation of a model for optimal use. *J. New Ideas Beh. Sci.*, 2: 111-123.
- Pournaghdi, B., 2009. Ethics in information technology and communication moral pathology. *J. Ethics Beh. Sci.*, 3: 21-28.
- Punamaki, R.L., M. Wallenius, H. Holtto C.H. Nygard and A. Rimpela, 2009. The associations between Information and Communication Technology (ICT) and peer and parent relations in early adolescence. *Intl. J. Behav. Develop.*, 33: 556-564.
- Tavakol, M. and M. Ghazinejad, 2011. Generation gap in macro-sociological approaches: a review of historical generation approaches and contrast with emphasis on the views of Mannheim and Bourdieu. *J. Social Sci.*, 27: 95-124.
- Turner, P., S. Turner and G.V. Walle, 2007. How older people account for their experiences with interactive technology. *Behav. Inf. Technol.*, 26: 287-296.
- Yusefi, R. and M. Rezaeeraad, 2010. A comparison between level of Mazandaran Islamic Azad University professors' and students' ICDL skills. *J. Inf. Commun. Technol. Edu. Sci.*, 1: 67-78.