A Study Of Gender Differences With Respect To Internet Socialization Of Adolescents

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ABSTRACT

This study investigates the differences between adolescent males and females in the perceived amount of knowledge regarding internet usage provided by various socialization agents (i.e. parents, school, media, and peers). Further, it examines whether there is a significant difference in the amount of knowledge regarding internet usage provided by various socialization agents within gender. The study takes a social learning perspective to examine the gender differences.

Keywords: technological socialization, social learning theory, socialization agents, gender differences

INTRODUCTION

The Internet has permeated every part of our everyday lives - work, school, commerce, news, advice, communication, entertainment, and personal relationships (*2005 Digital Future Report*, 2005). This is specifically true for the Y generation which has grown up with the Internet and where acquiring the skills to effectively and efficiently use the Internet are believed to be critical to future academic and career success (Hargittai & Shafer, 2006; H. Ono & Zavodny, 2005). While recent findings have found evidence to suggest that the gender divide with respect to Internet access and usage is disappearing (Hargittai & Shafer, 2006; Hiroshi Ono & Zavodny, 2003; Wasserman & Richmond-Abbott, 2005), other research warns that gender differences with respect to the Internet are still present, specifically in Internet-related activities, attitudes, and self-efficacy (Hargittai & Shafer, 2006; Joiner, Brosnan, Duffield, Gavin, & Maras, 2007; Morahan-Martin & Schumacher, 2007). Morahan-Martine and Schumacher (2007) suggest that these gender differences still exist because "early socialization with computers and the Internet appears to favor boys" (p.2237). Almost a decade before, based on a review of 82 studies of gender differences with respect to computers, Whitley (1997) also suggested that socialization processes of boys and girls are the likely cause of gender differences with respect to technology.

Therefore, taking a social learning perspective, this research examines if there are differences in the way boys and girls are socialized to the Internet. Specifically, this study will investigate if 1) there is a significant difference between adolescent males and females in the perceived amount of knowledge regarding internet usage provided by various socialization agents (i.e. parents, school, media, and peers) and 2) within gender, there is a significant difference in the amount of knowledge regarding internet usage provided by various socialization agents.

The remainder of the paper is organized as follows: literature review of socialization in general, followed by the influence of various socializations agents, procedures and methodology, analysis and results, discussion and conclusions, and limitations and future research.

LITERATURE REVIEW

Socialization

   Socialization has been defined as " the process by which we learn the ways of a given society or social group so that we can function within it" (Elkin & Handel, 1989, p. 2). The concept of socialization has roots in social learning theory, where the individual being socialized is portrayed as passively learning from direct interaction with other individuals (McLeod & O'Keefe, 1972). The purveyors of social knowledge are referred to as socialization agents. Socialization agents may be any person, institution, or organization directly involved with the individual. However, over the past 30 years the main agents for socialization have been clearly delineated as parents, media, peers and educational institutions (Churchill & Moschis, 1979; Moschis & Churchill, 1978; Moschis, Moore, & Smith, 1983; Olshavsky & Granbois, 1979).

   While the process of socialization happens throughout one's entire life (Rosenberg & Turner, 1990, p. 159), most socialization research has focused on the pre-adult stages. In addition to life stage, socialization has been also studied in a variety of arenas. These include but are not limited to social class socialization (Petersen, Lee, & Ellis, 1982) and cultural socialization (see for example Clugston, Howell, & Dorfman, 2000; Ellis, Lee, & Petersen, 1978). Of particular interest has been the study of gender socialization (see for example Dedovic, Wadiwalla, Engert, & Pruessner, 2009; Dill & Thill, 2007; Ventoura, Neokosmidi, Theofilou, & Ioannidis, 2007). Socialization studies have been conducted in the context of leisure activities (Arnon, Shamai, & Ilatov, 2008), children's health (Tinsley, 1992), product and service consumption (see for example Bao, Fern, & Sheng, 2007; Lueg & Finney, 2007) and consumer credit (see for example Lea, Webley, & Walker, 1995; Palmer, Pinto, & Parente, 2001; Pinto, Parente, & Mansfield, 2005). This research extends the current socialization literature by examining gender difference in the socialization of pre-adults to the Internet.

Influence Of Socialization Agents

Role of Parents

   The majority of research on socialization has identified primary agents, specifically parents, as the most influential (Bao, et al., 2007; Lueg & Finney, 2007; Moschis & Churchill, 1978; Moschis, et al., 1983; Pinto, et al., 2005). Although the popular press depicts today's parents as less technology savvy compared to their children, parents may still play a significant role in socializing their children to the Internet. In a study of male and female high school students, Shashaani (1994) found that parents' encouragement influenced both boys and girls attitudes toward computers; however, the study also revealed that females attitudes towards information technology were significantly lower if they perceived their parent thought computers were more appropriate for males. In a study of 202 college students, Shashaani (1997) also found that a pro-male bias by parents with respect to computers reduces their daughters' interest in computers. Through in-depth interviews, Kekelis, et al. (2005) observed that adolescent girls perceived that their parents provided them with less computer-related support. Shashaani (1997) speculated that bias at home with respect to computer usage may also cross over to Internet usage. Thus, the influence of parents with respect to socializing pre-adults to the Internet will be higher in males than in females.

Role Of Schools

   Studies have shown that interest in computer-related studies, especially in female students, is highly influenced by the type of encouragement they receive in school (Beyer, 2008; Beyer & Haller, 2006; Zarrett, Malanchuk, Davis-Kean, & Eccles, 2006). Cole, et al. (1994) and Huber and Schofield (1998) found that teachers are more encouraging of males with respect to computer technology than females. Further, Culley (1988) observed that middle-school teachers assessed female computing competency lower than their male counterparts even when female students performed the same quality and quantity of work as the male students. Thus, the influence of schools with respect to socializing pre-adults to the Internet will be higher in males than in females.

Role Of Media

Various media sources (including magazines, books and television) are also seen as playing a role in how males and females are socialized to the Internet. Early research by Ware and Stuck (1985) investigating the gender stereotyping with respect to computers and software in magazines found that females were not only underrepresented but also portrayed less favorably. Women were often depicted as being less experienced and more passive users of technology. Extending the research to include computer and software related advertisements on the Internet, television and movies, Knupfer (1998) found similar gender stereotyping. Although more recent research (Johnson, Rowan, & Lynch, 2006) has noted a decline in the negative representation of women with respect to technology in the media, their research did find evidence that male computer stereotyping still exists. Thus, the influence of the media with respect to socializing pre-adults to the Internet will be higher in males than in females.

Role Of Peers

Peers tend to have greater social influence during the later stages of childhood and adolescent development. A study by Ching, Kafait & Marshall (2002), investigating the computer task preference of male and female students, revealed male students to be more individualistic when doing computer related tasks while female students prefer to work collaboratively. Using an experimental design involving pairs of task performers and task observers, Corston and Colman (1996) found that females, unlike males, performed much better on computer tasks in the presence of female observers than alone or with a male observer. Thus, the influence of peers with respect to socializing pre-adults to the Internet will be higher in females than in males.

Role Of Personal Experience

The traditional socialization agents (parents, school, media, and peers) have been studied extensively. While traditional agents are important in this study, there is a need to extend the agents to include personal experiences as an influencing factor (see for example Arnon, et al., 2008; Leaper & Brown, 2008). The concept of active learning or learning by doing has become common in both formal and informal educational settings (Gujarathi & McQuade, 2002; Heriot, Cook, Jones, & Simpson, 2008; Krell, 2007). Personal experiences can be considered learning by doing.

Since males are socialized more to technology in schools and at home, we postulate that males would be more confident in taking advantage of personal experience, particularly the trial-and-error aspect, and obtain a greater amount of information from personal experience than females.

PROCEDURES

Method

Surveys were administered by the researchers to a convenience sample of high school students attending a summer program (n=154). The students were selected from a northeastern state with the criteria of both high interest and ability across the entire state. Human subjects' institutional research board approval was obtained including parental consent as appropriate.

There were 154 surveys distributed with 143 valid responses. Of these, 80% of the students were Caucasian with the remainder of various other ethnicities. The sample was 62.2% male and an age range of 15 to 18, although over 90% of the total sample was either 16 or 17 years old.

Constructs

Socialization agents are the sources of information about the specific area of group membership and have been used in many prior studies. The conventional agents as defined in prior literature (see for example Arnon, et al., 2008; Moschis & Churchill, 1978) are parents, peers, school, and media. However, given the Internet's influence on modern society, Roedder-John's (1999) suggestion that the Internet should be considered another socialization

agent leads us to consider personal experience on the Internet as an additional agent. Thus, respondents were asked in this study to assess the amount of information regarding the Internet provided from each of the four traditional agents as well as personal experience.

ANALYSIS AND RESULTS

The first research question was "Is there a significant difference between males and females in the perceived amount of information provided by various socialization agents?"   An independent sample t-test by gender was performed to answer this question.

The results shown in Table 1 illustrate a significant difference between males and females in the perceived information provided by each of the socialization agents. Males receive significantly more information than females from school and media socialization agents, while females receive significantly more information than males from peers, personal experience, and parents.

Table 1: Gender Differences in Information Provided by Socialization Agents

Agents	Females	Males	t-value	p-value
Parents	3.91	3.17	2.14	.034
School	4.63	5.44	-2.49	.014
Media	4.43	5.09	-2.01	.047
Peers	5.02	4.04	3.08	.003
Personal Experience	5.43	3.64	5.45	.000

Based on the propositions stated above, females perceive that they obtain significantly more information than males from parents. Thus, our proposition is not supported.

Males perceive that they receive significantly more information than females from school and also from media. This is consistent with our propositions.

Females perceive that they receive significantly more information from peers than males. This is also consistent with our prior proposition.

Finally, females perceive that they receive significantly more information than males from personal experience. This is not consistent with our prior proposition.

The second research question is "Is there a significant difference by gender between the agents in the amount of information provided?" A paired sample t-test was conducted to identify the between-agent differences. The test was performed on the useable sample (total 143) of 54 females and repeated for the sample of 89 males. The results are shown in Table 2 and Table 3 respectively.

Table 2: Paired Sample t-Tests of Socialization Agents for Females

Source	Mean	SD	Personal Experience	Peers	School	Media
	N=54		t-value (sig.)			
Personal Experience (on the internet)	5.43	1.74				
Peers	5.02	1.78	1.33			
School (teachers or courses)	4.63	1.88	2.36*	1.23		
Media (TV, radio, books, print materials)	4.43	1.99	2.87**	1.93	.74	
Parents	3.91	1.95	4.63***	2.97**	2.02*	1.41
*** p<.001	** p<.01	*p<.05				

As shown in Table 2, for females, Personal Experience provides significantly more information than School (t=-2.36; p<.05), more information than Media (t=2.87; p<.01), and more information than Parents (t=4.63; p<.001). Peers (t=2.97; p<.01) and School (t=2.02; p<.05) provide significantly more information than Parents.

In the case of males as shown in Table 3, School provides significantly more information than Peers (t=4.99; p<.001), Personal Experience (t=5.43; p<.001), or Parents (t=7.26; p<.001). Media sources also provide more information than Peers (t=4.49; p<.001), Personal Experience (t=4.20; p<.001), or Parents (t=6.33; p<.001). Peers provide significantly more information than Parents (t=3.10; p<.05).

Table 3: Paired Sample t-Tests of Socialization Agents for Males

Source	Mean	SD	School	Media	Peers	Personal Experience
	N=89			t-value (sig.)		
School (teachers or courses)	5.44	1.88				
Media (TV, radio, books, print materials)	5.09	1.88	1.55			
Peers	4.04	1.87	4.99***	4.49***		
Personal Experience (on the internet)	3.64	2.13	5.43***	4.20***	1.47	
Parents	3.17	2.04	7.26***	6.33***	3.08**	1.57
*** p<.001	** p<.01	*p<.05				

In the next section, we will discuss the results and draw some conclusions.

DISCUSSION AND CONCLUSIONS

Past research has speculated that the potential differences in the way boys and girls are socialized to technology may influence the way males and females use technology in later years and perhaps eventual career choices. Our research does suggest that boys and girls are socialized to the Internet differently. The hypotheses demonstrated differences in the proposed direction with the exception of parents' and personal experience influence. Results show that females, more so than males, identified larger amounts of information coming from more personal sources, such as peers and parents, while males identified larger amounts of information coming from external sources, such as school and media. This is reasonable given that females prefer a more collaborative environment.

What was surprising is that the females, when compared to males, believed that they received the larger amount of information from their personal experience with the internet. This is surprising since past research has stated that males tend to be more playful, explorative, and individualistic. However, additional analysis reveals that knowledge from peers and the internet were highly correlated with one another (no other pair of sources were significantly correlated with each); therefore, females may perceive the internet as being a more personal and cooperative environment than individualistic and competitive. Given the perceived lack of information from traditional school settings for females, it may also be that females have taken it upon themselves to develop their own skills. Girls may feel more comfortable exploring these arenas on their own instead of in a public or less private setting.

Though parents often are the most influential socialization agent in other areas, with respect to learning about the Internet, parents play the least significant role for both males and females. Even with increasing access to computers in the home, parents provide significantly less information than any other source. This may be due to a generational or age gap. Our sample was 16-17 year olds with most parents likely to be in their 40's. These parents were not raised with computers and are not as likely to exude proficiency. This generation of adolescents is the first to grow up with computers and the internet. Unlike their parents, they have been exposed to computers and the Internet at a very early age. However, it is becoming increasingly more common for young children to see parents at home with a computer and for children to receive a computer (with learning programs) at a young age. Thus, children should be more likely to learn about technology, computers, and the internet from their parents in the

future. Therefore, we speculate that the parents' influence will increase over time.

The outcome of this study is that there is a clear delineation in the sources or agents by which students become acclimated to technology. Further, this difference is significant by gender. It is important for our society, in general, to recognize these differences and properly address them so females and males have both equal exposure and opportunity. We also need to work toward removing the stigma that females still face with science, math, and technology. Reducing this stigma may go a long way toward equalizing the gender gap in the socialization of technology.

LIMITATIONS AND FUTURE RESEARCH

There are several limitations in this study. We only looked at socialization agents and gender. We should look at internet usage in more specific terms, including what students are doing with the computer. Are there correlations between what they are doing and who socialized them? Do their prior dispositions – for example, primary areas of interest - change the perceived agents? Does the role of parents change as parents become more computer savvy? Finally, since we investigated high school students, is there a difference between age groups? Do college students follow the same patterns regarding the importance of socialization agents? Perhaps we should repeat this study over time and with different life stages.

AUTHOR INFORMATION

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