

Gender Patterns in Middle School Students' Media Use

Phyllis W. Bernt
Professor
School of Communications Systems Management
Ohio University
bernt@ohio.edu

Joseph P. Bernt
Professor
School of Journalism
Ohio University
berntj@ohio.edu

Sandra V. Turner
Professor
Department of Educational Studies
Ohio University
turners@ohio.edu

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Many studies have documented the under-representation of women in the information technology (IT) workforce. For example, a recent AAUW-sponsored report noted that women hold only 20% of IT jobs (AAUW, 2000). This AAUW (2000) report, *Tech Savvy*, recommended that, to identify reasons for the absence of women in IT, the socialization process that leads girls and women to IT careers be examined, and that this examination include such environmental factors as family, teachers, counselors, peers, and media. The inclusion of media in this list is hardly surprising, given the significant amount of time girls spend with various forms of media, especially girls of middle school age.

A national survey of media use by children found that the age group of children that includes the middle school years lived in homes with high rates of media penetration: 99% had a television, 97% had a VCR, 96% had an audio system, 82% had a video game player, 74% had a cable/satellite TV connection, and 69% had a computer. This same survey found that the middle school years fell in the period of highest total media exposure, a total of eight hours and eight minutes a day (Kaiser Family Foundation, 1999).

Media play a unique socializing role. With other socializing agents, adolescents must interact with adults, but with media they can themselves exercise control of the socialization process through their individual media choices, isolated from authority figures and peers (Arnett, 1995). Moreover, media researchers have found that those people who depend most heavily on media, especially television, are most influenced in their views of the world. According to the cultivation theory of media use, heavy users of television adopt a view of reality that comports

with the description of reality presented in the media. Research based on cultivation theory suggests that children (Swan, Meskill & DeMario, 1998) and adolescents (Signorielli, 1990, 1993; Huston & Alvarez, 1990; Wroblewski & Huston, 1987) learn about the workplace from the unrealistic and stereotyped images they view on television, especially if they are heavy viewers. While these studies have focused on television, it can be argued that other media, such as film, popular magazines, books, and online resources, also contribute to the formation of views about reality and workplace.

That a middle school student spends, on average, half of his or her waking hours with a variety of media is especially important because the middle school years are such a crucial time in a child's development. Clewell and Braddock (2000) note that the "middle school years have been identified as the most crucial in influencing membership in the math/science talent pool." A period of significant developmental change, the middle school years also are when students decide whether to embark on an academic track that can lead to an IT career; it is during this period that students make key decisions about course selections that affect future educational and career choices. The middle school years also have been identified as the time when the interest of minority and female students in technical areas like science and math declines (Clewell & Braddock, 2000).

Before the effects of media on the socialization of middle school girls can be examined, the media environment of these girls must first be identified. Recent studies have attempted to quantify children's media usage. A Kaiser Family Foundation (1999) study looked at the media environment of eight-to-eighteen year olds; an Annenberg study (Woodard & Gridina, 2000) measured the media use of children between the ages of two and seventeen and the attitudes of their parents; a Roper Starch study (November 1999) examined the use of the Internet by nine to

seventeen year olds; a Gallup poll (CNN/USA Today/National Science Foundation/Gallup, 1997) surveyed children in grades seven through twelve regarding their familiarity with computers and the Internet; a PEW study (Levin & Arafeh, August 2002) used focus groups with middle school and high school students to gauge their educational use of online resources; and a telephone survey of Silicon Valley youth between the ages of ten and seventeen, conducted jointly by the San Jose *Mercury News* and the Kaiser Family Foundation (May 2003), assessed attitudes toward, and uses of, the Internet. While informative, these studies have looked at a wide range of age groups, and have focused on a variety of variables, with gender only one element of study. This study focused on the especially important middle school years by surveying sixth, seventh and eighth grade students, and concentrated on gender as the primary element of study. Unlike the other studies cited, in which adults surveyed or interviewed students and parents, in this study, students surveyed other students. Questions asked in this survey were developed with student input, reflecting the curiosities of the students themselves regarding media use.

This study examined the gender patterns in media use exhibited by middle school students in a small Midwestern city. The study was one element in a three-year NSF-funded research project focused on the middle school media environment, including television, popular magazines, films and videos, Internet sites, and books. The three-year research project is analyzing whether the messages conveyed by these media reinforce or impede the development of gender and racial diversity in the IT workforce. An essential component of the larger study is a student-conducted survey of media use patterns, a survey designed with significant input from students and administered to students by their peers. This paper reports the gender patterns of media use this survey found.

Methodology

The authors collaborated with three teachers who were part of a team that was teaching seventh grade at a middle school in a small midwestern city. The city's population of 21,796 is mostly Caucasian (89.21%), with African Americans constituting the largest minority group (7.51%). The largest single employer in the community is a large paper company; other major employers include a truck manufacturing company, health services providers (including a Veteran's Hospital), and a prison. The middle school in the study enrolled students from the surrounding rural areas, as well as from all segments of the city, as a result, the students came from a wide range of socio-economic groups. The school enrolled 357 sixth, seventh, and eighth grade students, and was evenly divided by gender, with 178 female students and 179 males. Most of the students (90.4%) were Caucasian, with the largest minority group comprised of African American students (6.4%). More than half (50.6%) of the students were eligible for the reduced or free-lunch program.

A thirty-question survey regarding media use was developed with significant student input and with the assistance of the collaborating teachers, whose disciplines are math, language arts, and science. The authors formulated 24 questions that, in addition to demographic information, asked about students' television, movie, and video viewing; reading habits of popular magazines and books; computer access; and library use. The students in selected seventh grade science, language arts, and math classes were asked to evaluate these questions and to formulate questions reflecting their own media interests. The students generated six questions that asked about online versus print research preferences; newspaper reading habits; music preferences; and interest in televised sports. A group of seventh grade students at the school piloted the surveys, which were administered by the seventh grade students who had

helped formulate the questions. These students, working in groups of two or three, distributed the surveys to sixth, eighth, and other seventh grade classes, after being trained by the teachers in how to explain and administer the surveys. The students administered 246 surveys, which were completed by 129 females and 117 males.

Findings

This survey found differences between the girls’ and boys’ media usage in both frequency and content. The girls were more heavily involved with media, especially print media, and used the media differently than did the boys. While the boys’ media use revolved around sports and hobbies, the girls’ media use involved people and human relationships. Both girls and boys reported being active online; however, the location from which they accessed online resources and their reasons for going online differed substantially.

Girls Were More Involved with Media, Especially Print Media

A greater percentage of the girls who responded to the survey reported having some experience with television, movie, or video viewing than did their male counterparts, as can be seen in table 1. When asked how often they viewed television programming, 97.6% of the girls responded that they watched television at least once a week, versus 94.9% of the boys. Only 2.3% of the girls responded that they never watched television or watched less than once a week, as opposed to 5.2% of the boys. When asked about their viewing of movies and videos, more of the boys than girls reported watching movies; however, almost twice as many boys (22.2%) reported never seeing movies than did girls (11.6%). The same pattern was evident regarding viewing of videos, with 7.7% of the boys reporting never watching videos and only 2.3% of the girls.

Table 1: Frequency of Media Use by Gender

	At least once a week	Less than once a	Never
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			week			
	Female	Male	Female	Male	Female	Male
Watch Television	97.6%	94.9%	2.3%	4.3%	0.0%	0.9%
See Movies	10.9%	15.4%	77.5%	62.4%	11.6%	22.2%
Watch Videos	65.9%	68.4%	31.8%	23.9%	2.3%	7.7%
Read Magazine	55.0%	41.0%	32.6%	36.8%	12.4%	22.2%
Check Out Book from School	41.4%	30.0%	49.2%	44.4%	9.4%	25.6%
Check Out Book from Library	19.6%	14.5%	49.2%	36.8%	31.3%	48.7%
Access Web at Home	70.4%	62.7%	9.6%	6.2%	20.0%	31.0%
Access Web at School	24.0%	34.2%	45.0%	37.6%	31.0%	28.2%
Access Web at Library	12.4%	13.6%	31.0%	18.8%	56.6%	67.5%

As shown in table 1, an even greater disparity is evident between the percentage of girls who reported reading magazines and checking books out of the library and the percentage of boys reporting the same activities. While 55% of the girls reported reading a magazine at least once a week, only 41% of the boys reported that level of frequency. Almost twice as many boys (22.2%) never read a magazine as compared to girls (12.4%). At least once a week, 41% of the girls checked books out of the school library, and 19.6% of the girls checked books out of the public library. The corresponding figures for the boys were 30% and 14.5%. A much larger percentage of boys reported never checking books out of the school library (25.6%) or the public library (48.7%) than did girls (9.4% and 31.3% respectively).

In addition to being more likely to read magazines and books, girls were also more likely to read newspapers. A greater percentage of girls (74.4%) reported regularly reading a newspaper than did boys (70.1%). (See table 2.) The total picture of media use that emerges from the questions regarding viewing and reading habits suggests that girls are more involved in media. More girls read magazines, newspapers, and books; and a smaller percentage of girls than boys report a lack of involvement with television, movies, or videos.

Table 2: Print and Online Resources by Gender

	Female		Male	
	Yes	No	Yes	No
Regularly read newspaper?	74.4%	25.6%	70.1%	29.9%
Currently reading book, not for class?	46.9%	53.1%	30.8%	69.2%
Favorite biography?	39.8%	60.2%	29.3%	70.7%
Computer at Home?	83.3%	16.7%	77.7%	22.3%
Web Connection at Home?	83.2%	16.8%	71.8%	28.2%
Computer in Your Room?	15.5%	84.5%	15.4%	84.6%

The responses to this survey suggest that girls are more heavily print oriented than are boys. As already noted, a larger percentage of girls reported regularly reading magazines and newspapers; and girls reported checking books out with greater frequency than did boys. In addition, when asked if they were reading a book for other than a school assignment, 46.9% girls responded in the affirmative, as opposed to 30.8% of the boys (See table 2). The girls' greater print orientation was also shown in responses to the survey question asking whether students prefer using print or online sources when doing class assignments. Only 68.8% of the girls reported a preference for using online rather than print resources when doing research for school assignments, while 77.1% of the boys preferred online sources.

Girls Are Active Online, but Venues and Uses Differ

A majority of both girls and boys reported having access to a computer and to the Internet at home, with a larger percentage of girls reporting this access (See table 2). While 83.3% of the girls reported having a computer at home, and 83.2% reported that the computers were connected to the Internet, only 77.7% of the boys reported having a computer at home, and 71.8% reported that the computers had web connections. An equal percentage of girls (15.5%) and boys (15.4%) reported having a computer in their room, suggesting a change from practices earlier researchers have found in which parents tended to put computers in their sons' rooms rather than in their daughters' rooms (Margolis & Fisher, 2002). From these responses it would seem that there is

little or no gender gap with regard to access to computers and to the Internet. However, there is a gender difference in where this access occurs.

The survey included a series of questions regarding how often students accessed the Internet from home, from school, and from the public library (See table 1). Girls were more likely than boys to access the Internet from home, with 70.4% of the girls reporting that they accessed the web from home at least once a week, as opposed to 62.7% of the boys. Girls were less likely never to access the Internet from home (20%), than the boys, 31% of whom reported never accessing the web from home. While girls were more likely than boys to access the Internet from home, the situation was reversed when the issue was accessing the Internet from school. Fewer than one fourth of the girls (24%) reported accessing the Internet from school at least once a week, while 34.2% of the boys reported such weekly access. More girls than boys (31% versus 28.2%) reported never accessing the Internet from school. These responses suggest that boys are more likely to use computers and the Internet in school settings, a prevalent pattern in computer use (Margolis & Fisher, 2002).

Students' responses regarding Internet access from a public library suggest that the public library is hardly the primary source of Internet access for both girls and boys. A majority of girls (56.6%) and an even larger percentage of boys (67.5%) reported never accessing the web at the public library. In general, students' responses regarding Internet access suggest that, for both genders, the home is the most frequent location for web use, but especially so for girls, who are less likely to access the Internet from school than are their male counterparts.

Table 3: Favorite Uses of Computers by Gender

Favorite Aspect of Computers	Female	Male
Chat-Email-ICQ	22.5%	3.4%
Internet Websites	17.8%	29.1%
Games	11.6%	23.9%

Not only is there a gender difference in where computers and the Internet are accessed, there is also a gender difference in computer use. The survey included an open-ended question that asked students to explain what they liked most about computers. The largest percentage of girls (22.5%) listed the ability to send email or to chat as what they like most (See table 3). A very small percentage of boys (3.4%) listed email or chat; instead, the features most often listed by boys were the ability to access websites (29.1%) and computer games (23.9%). A smaller percentage of girls listed these two features (17.8% and 11.6% respectively). Girls were more likely to appreciate the ability to communicate with other people through email or chat, while boys were more likely to value computers because of the ability to surf the net or to play games.

Gender Differences in Media Choices

Girls and boys responding to the survey exhibited gender differences in the frequency with which they used media and also in their attitude toward computers; they also exhibited gender differences in the content of their media choices. While girls tended to choose media content involving people and social interaction, boys chose media having to do with sports and hobbies. This gender difference was apparent in all types of media chosen.

Table 4: Favorite Magazine and Television Program by Gender

Favorite Magazine		Favorite TV Program	
Female	Male	Female	Male
<i>Teen</i>	<i>Sports Illustrated</i>	<i>7th Heaven</i>	<i>MTV</i>
<i>Seventeen</i>	<i>ESPN</i>	<i>Full House</i>	<i>The Simpsons</i>
<i>Teen People</i>	<i>Playstation</i>	<i>Friends</i>	<i>Dragon Ball</i>
<i>J-14</i>	<i>Motocross</i>	<i>Boy Meets World</i>	<i>WWF</i>
<i>YM</i>	<i>ATV</i>		
<i>People</i>	<i>Hot Rod</i>		

When asked to list their favorite magazines, girls and boys identified very different titles (See table 4). The six magazines most often listed by girls included *Teen*, *Seventeen*, *Teen*

People, J-14, YM, and People. Boys, on the other hand, listed as their favorites *Sports Illustrated, ESPN, Playstation, Motocross, ATV, and Hot Rod.* While girls read magazines about celebrities and dating patterns, boys read about sports, games, and racing vehicles. This same pattern emerged in the responses to a question regarding students' favorite television programs. Girls listed as their favorites 7th *Heaven, Full House, Friends, and Boy Meets World.* Boys listed *MTV, The Simpsons, Dragon Ball, and WWF.*

When asked to identify their favorite sections of the newspaper, girls once again reflected a broader interest in people and social activities while boys focused on sports (See table 5). The newspaper section listed most often by boys (31.6%) was sports. Girls, on the other hand, reported having a variety of favorite sections, including comics (14.7%), sports (12.4%), lifestyle (10.1%), the front page (7.8%), and even the obituaries (3.1%). The girls' stronger interest in people was also reflected in their responses to the question, "Do you have a favorite biography?" While 39.8% of the girls reported having a favorite biography, only 29.3% of the boys reported having a favorite (See table 2). The boys' interest in sports was also reflected in their choice of biography; 17.1% of the boys listed a biography of a sports figure as their favorite. Girls most often (17.1%) listed the biography of a historical figure.

Table 5: Favorite Newspaper Sections by Gender

Favorite Newspaper Section	Female	Male
Comics	14.7%	12.0%
Sports	12.4%	31.6%
Lifestyle	10.1%	3.4%
Front Page	7.8%	2.6%
Obituaries	3.1%	0.0%

Educational Significance and Future Research

The girls' greater media involvement and the content of the media they select underline the importance of media in their socialization process. Much more than the boys, the girls who

completed this survey were receiving information about people, human relationships, and social situations from television, magazines, newspapers, and other media. These girls' high level of media involvement and use of media about people and human relationships speak to the importance of including media literacy training in the middle school curriculum. These girls need training in how to "read" the media in order to recognize gender stereotypes in the roles and social cues presented. These survey results also suggest that interventions designed to encourage middle school girls to pursue IT or other technical careers should take into account the importance of media in girls' lives. Such interventions, in order to be effective, should utilize various media channels to get information to girls and also counteract stereotypical media.

This study points to the need for further research. This study reports on the results of a survey conducted in one middle school. While these survey results cannot be extrapolated to the national middle school population, they do present one specific group's responses to student-generated questions and to student-administered surveys. The results portray a picture of the gender patterns of media use for these students and also point to future areas of study. Replicating this study in geographically and economically diverse middle schools across the country would reveal whether these results are unusual or whether they reflect national patterns. Content analysis of the specific media cited by the students in these surveys is needed to identify the media messages that are being conveyed to middle school students as they formulate their career concepts regarding their places in the workplace.

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