Article Critique #2

Diana Wilkes

Middle school students' technology practices and preferences: Re-examining gender differences
Written by: L.M. Miller, H. Schweingruber & C.L. Bradenburg

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Student Number: 18562090 Dr. Clifford Falk July 4, 2010

L.M. Miller, H. Schweingruber and C.L. Bradenburg rekindle the discussion of gender and technology in their article “Middle school students' technology practices and preferences: Re-examining gender differences”. Their study attempts to demonstrate that the previously assumed gender gap witnessed with computer use is diminishing due to more equitable access to ICT equipment and internet connectivity. They also speculate that the speed of technology acculturation will culminate in decreased gender-biased IT outcomes at home, schools and even the workplace.

This research used quantitative data collection in the form of a questionnaire. A diverse socio-economic population of 512 middle school students aged 11-15 (57%-female, 43% male) completed the survey. The study took place between October 1998 and April 1999 and used a survey of 68 questions for students to answer within 30 minutes. The focus of their data gathering included:

1. Self-perception of computer skills and their acquisition;
2. Exposure to technology at home; and
3. Media style and content preferences.

Through the questions they ascertained: that all students have a positive attitude towards their ICT ability and disposition for technology acquisition; most students have access to computers at home/school; and that females like different media styles and have different content preferences than males. Ultimately, their research demonstrates the decreasing digital divide between the sexes.

Much of the article contradicts previous studies, yet serious holes in their methodology exist. Firstly, although they used focus groups to create suitable open and closed questions, this is an extensive pencil and paper questionnaire with a target population of children. Thus, the reliability of their data is questionable since the desire for young

people to please adults can be present {similar to the Hawthorne Effect as described by Gay et al (2009, p.249)}. Secondly, the scope is too broad. They should focus on how the students use ICT in their *unguided* time: a log indicating what students do daily over an extended period of time would generate more detailed/accurate data. In terms of their sample population, the article explains how the schools were selected but neglects to indicate how the children were individually selected. I have additional issues regarding the scope of their analysis including a superfluous comparison of: ICT to TV; advantaged students to disadvantaged students; and the use of technology independently or with support. What do these comparisons have to do with the research? Thirdly, they make many comparisons to outdated research (up to 26 years old), especially when referring to gender differences of internet use. Since the internet only started reaching homes around 1994 onwards, this is an invalid comparison. Lastly, the authors use the term 'technology' loosely: they mean 'computers'; however, this is not evident until the article is read entirely. I also believe that clarity on the personal incentive of the authors, along with an appendix of the actual survey is necessary.

On the other hand, this article has some obvious strong points. The central reason for the research that girls were assumed to have less access than boys to computers therefore stunting their acculturation - was disproven. They also use a variety of previous research to compare and contrast with their own findings; their research proves their hypothesis that the technological gender gap is narrowing; and they identify potential challenges which suggest ideas for future research.

Conversely, their conclusions lack a clear correlation to the research undertaken and the three focus questions. I speculate why they refer to transforming how technology is used to promote learning in the best way when this is not part of their current research. The researchers speak of how there is a need for technological materials that are "free of gender

bias" (Miller et al, 2001, p.138) in order to attract young people to the internet. This contradicts their actual findings about how the gender gap is closing in terms of technology accessibility. However, the *way* that the technology is used is different by gender. For example girls seem to prefer cards/arcade games while boys gravitate to action/simulation games.

Furthermore, although there was no significant difference in 11/18 of the options for using computers (Miller et al, 2001, p133) this indicates that for seven out of 18 choices of computer use, males and females do have different preferences. Does this mean the gender digital divide is not closing? Absolutely not. It highlights the results of the research: increased accessibility has lead to more equitable computer use by gender but the manner in which boys and girls use the computers is different. Therefore, future research on how to use technology effectively by gender is warranted.

References:

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