Self-Esteem and Use of the Internet among Young School-Age Children

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Received: August 17, 2011 Accepted: October 9, 2011 Published: December 1, 2011
doi:10.5539/ijps.v3n2p48 URL: http://dx.doi.org/10.5539/ijps.v3n2p48

Abstract

The literature suggests a relationship between technology use and self-esteem. Such research has failed to consider young school-aged children and their use of the internet, particularly across contexts. Thirty-eight children aged 6 to 8 years rated the level and nature of their internet use (email, instant message, play games, visit websites) at home, school and in the community (i.e., at someone else's house). They also rated items that measured home, school and peer self-esteem. Instant messaging at school explained 21% of the differences in school self-esteem. As children tended to report instant messaging at school, they also tended to report the highest school-based self-esteem. Instant messaging at someone else's house explained 11% of the differences in home self-esteem. As children tended to report instant messaging at someone else's house, they also tended to report the lowest home self-esteem. Visiting websites at someone else's house explained 10% of the differences in peer self-esteem. As children tended to report visiting websites at someone else's house, they also tended to report the highest peer self-esteem. Internet use during the early school years is related to children's sense of self and mediated by context.

Keywords: Early childhood, Primary school, Self-esteem, Internet

1. Introduction

In an increasingly digitalized society, young school-age children commonly use the internet (Hofferth, 2010; Lieberman, Bates, & So, 2009; Wartella & Rob, 2008). In 2009, 78% of 5 to 7 year-olds in Britain had home access to the internet (Ofcom, 2010). More than 80% of 7 to 8 year old Australian children participate in daily computer or internet use (Australian Communications and Media Authority, 2009). In a sample of Canadian 6 to 8 year olds, 48.6% reported using the internet to play games sometimes while 32.5% reported using the internet to play games often (Johnson, 2010a). All trends indicate continued increase in the number of children accessing the internet, the amount of time they spend online and the complexity of their online behaviour (Livingstone & Helpsper, 2007).

Theoretically and as presented in Figure 1, children use the internet at home, school and in the community (Johnson, 2010b). In those contexts, the internet provides children with opportunities to communicate (i.e., email and instant messaging), access information (i.e., visit websites), and engage in play activities (i.e., video games). Such uses of the internet stimulate cognitive and social development (Young, 2007). Fiorini (2010) concluded positive and enduring cognitive benefits of computer use during early childhood with some evidence of associations with proactive social behaviour. In a comprehensive review of the literature, McCarrik and Li (2007) concluded that young children who used computers, compared to those who did not, demonstrated significant and global developmental superiority.

Insert Figure 1 here

To date, research on the developmental consequences of internet use during the early school years has not distinguished between contexts of use and has not specified the nature of use. Home use is most commonly considered and parents typically report on the amount of time children spend online (Valcke, Bonte, De Wever, & Rots, 2010). Further, aspects of social and emotional development are rarely evaluated in relation to patterns of internet use among young children except with respect to potential risks of exploration and exposure to

inappropriate content (Cho & Cheon, 2005; Flander, Cosic, & Profaca, 2009). For older children, however, some uses of digital technologies such as mobile phones have been linked to popularity and self-esteem (Bond, 2010).

1.1 Self-Esteem during Childhood

Self-esteem, interpretation of personal value or worth, has been found to negatively correlate with anxiety, illness and school failure during childhood (Huitt, 2009; Kim & Cicchetti, 2009). Studies of the normative trajectory of self-esteem during childhood suggest that young children (early to middle childhood) have relatively high self-esteem because they tend to make unrealistically favourable self-attributes and overestimate their abilities. With advances in cognitive abilities, children increasingly base their self-evaluations upon external feedback and social comparisons and form more accurate appraisal of their competence and abilities (Robins & Trzesniewski, 2005). Self-esteem is formed through experiences with the environment and is especially influenced by environmental reinforcements and significant others. Children who receive affection, acceptance, security and support from their parents show higher levels of self-esteem compared to those who do not (DeHart, Pelham, & Tennen, 2006). As children start school, peer acceptance is a particularly powerful influence on their sense of self (Nesdale & Lambert, 2007).

It has been assumed that children's evaluation of self is not sensitive to specific context. Consequently, measures of self-esteem in children typically make little distinction between contexts of individual evaluative experience (Davis-Kean & Sandler, 2001). Hare (1980) developed a rating scale to measure three contexts of self-esteem in children, -- school, home and peer. School self-esteem is assessed by items such as my teacher likes my work. Home self-esteem is assessed by items such asMy parents are proud of me. Peer self-esteem is assessed by items such as Kids like to play with me. Shoemaker (1980) concluded that there was "empirical evidence not only for considering the Hare Self-Esteem Scale as a valid measure, but also for interpreting area-specific self-esteem in general as a valid construct" (p. 495).

During childhood, there is a relationship between various uses of technology and self-esteem (Ohannessian, 2009). For example, "as early as school entry, girls appear to already live in a culture in which peers and the media transmit the thin ideal in a way that negatively influences the development of body image and self-esteem" (Dohnt & Tiggemann, 2006, p. 929). Kistler, Rodgers, Power, Hill and Griner (2010) interpreted their results as suggesting that music videos were a venue for social comparison against which adolescents evaluate their own physical attractiveness and self-worth. In a longitudinal study of youth aged 11 to 16 years, Witt, Massman and Jackson (2011) reported that self-esteem was negatively associated with playing videogames and positively associated with general computer use.

1.2 Research Question

In keeping with the ecological techno-microsystem (Johnson, 2010b), this study seeks to explore the relationships between specific types of internet use across context sand self-esteem in young school age children (i.e., emotional development). Does internet use at home, school and in the community for purposes of communication (i.e., email and instant message), recreation (i.e., play video games) and information (i.e., visit websites) predict level of home, school and peer self-esteem during the early school years?

2. Methods

Parents of students in Year 1 and Year 2 attending a school in western Canada were asked for permission to administer a survey to their children. Forty of 46 children returned signed research participation consent forms which included a request for demographic information. Two children were absent during rating scale administration resulting in a final sample of 38 children. Of these children, 18 were in Year 1 and 20 were in Year 2; 19 were male and 19 were female. Children ranged in age from 77 months to 101 months (mean 89 months, SD 6.68 months). Approximately 82% of mothers and 97% of fathers reported being employed (part-time or full-time). With respect to the sample of mothers, 3.4% reported not completing high school, 34.5% reported high school graduation or apprenticeship training, and 62.1% reported some college or university education. With respect to the sample of fathers, 9.7% reported not completing high school, 58.1% reported high school graduation or apprenticeship training, and 32.3% reported some college or university education. Approximately half of participating parents described their family as tradition, 5% blended and almost half did not respond to the item querying family type.

Toward the end of the school year and having received parental permission, children completed a rating scale developed specifically for the study (i.e., limited reading vocabulary and large font size). In their classrooms with their teachers present, the researcher explained the rating scale and read it aloud while children circled their responses (never, sometimes or often). The rating scale included 15 items concerning children's use of the

internet at home, school and in the community, in general, and for purposes of communication (i.e., email and instant message), recreation (i.e., play video games) and information (i.e., visit websites). Terms were discussed and explained to children (e.g., instant messaging). Community internet use items included the phrase "at someone else's house" which was explained to children as using the internet at the house of a friend, child care provider, cousin and so on. Children asked questions (grandma's place) and the researcher assured the children that that was someone else's house. The rating scale also included 12 items adapted from the Hare Self-Esteem Scale (Hare, 1980). Four items measured each of home, school and peer self-esteem. Table 1 presents the valid percentages of children selecting each response to the internet use items. Table 2 presents the descriptive statistics for the self-esteem items. Some self-esteem items were reverse scored to allow for meaningful addition of ratings which resulted in a combined score for each child for each of home, school and peer self-esteem. Stepwise regression analysis was performed with all 15 internet use items as independent variables and each of home, school and peer self-esteem as the independent variable.

Insert Table 1 here

Insert Table 2 here

Consistent with previous research and thereby establishing the validity of the data collected, children reported high levels of internet use (Hofferth, 2010; Lieberman, Bates, & So, 2009) and high levels of self-esteem (Robins & Trzesniewski, 2005). Only one-third of the 6 to 8 year old children surveyed reported never using the internet at home and less than 3% reported never using the internet at school. Most children selected the option *often* to rate parental interpretation of their value and very few children wanted a different family. Home self-esteem was particularly high with a mean combined rating score of 10.16 out of a total of 12 possible. Nonetheless, considerable variability also existed between children's ratings. In the case of community use of the internet, for example, almost half of the children selected the rating option *never* while almost 8% selected *often*. With respect to the measure of self-esteem, items rated on a 3-point scale had standard deviations as high as 0.77 for the item. *I wish I had more friends.*

Table 3 provides results of three regression analyses, one for each of home, school and peer self-esteem. In every case, only one internet use variable was needed to explain differences in children's rating of their self-esteem. That is, additional internet use variables did not increase the amount of variance explained by the single internet use item. Instant messaging at school explained 21% of the differences in school self-esteem. As children tended to report instant messaging at school, they also tended to report the highest school-based self-esteem. Instant messaging at someone else's house explained 11% of the differences in home self-esteem. As children tended to report instant messaging at someone else's house, they also tended to report the lowest level of home self-esteem. Visiting websites at someone else's house explained 10% of the differences in peer self-esteem. As children tended to report visiting websites at someone else's house, they also tended to report the highest peer self-esteem.

Insert Table 3 here

3. Discussion and Implications for Theory and Practice

Different uses of the internet appear to have different relationships to children's sense of self. Instant messaging among 6 to 8 year old children is not normative. Indeed, only three of the 38 children to complete the rating scale indicated that they *sometimes* communicated in real-time online and those children were all in first grade. Given that computer use is tightly controlled and monitored in school, particularly for young students, it may be the case that high-achieving children were given opportunities to instant message by their teacher. Equally, the skills required to instant message (i.e., manual dexterity and language processing speed) are associated with early school achievement. Engaging is a behaviour that is typical of older children may contribute to young children's high school-based self-esteem. In some contexts, perhaps with structure and monitoring, communicating with text in real-time may promote aspects of child learning and emotional development (i.e., school self-esteem).

Six children reported instant messaging at someone else's house (four *sometimes* and two *often*). None of these six children reported instant messaging at school, although some reported instant messaging at home. Home-based instant messaging, however, did not increase the capacity of the internet use items to predict self-esteem. Given the wide range of situations in which children use the internet in the community, level of supervision likely varied. It may be that, in some cases, an adult was facilitating the children's real-time digital text-based communication. In other cases, another child may have provided support for instant messaging. It is also possible that the children were entirely unmonitored and unsupported. For the sample of 6 to 8 year old children, instant messaging at someone else's house was associated with the lowest levels of family self-esteem.

The correlates of instant messaging vary as a function of context as suggested by the ecological microsystem model (Johnson, 2010b).

Twelve children reported visiting websites at someone else's house (11*sometimes* and one *often*). Those 12 children, relative to children who did not report visiting websites at someone else's house, had the highest level of peer self-esteem. Again, given the range of situations represented by the phrase *at someone else's house,* the nature of sites accessed and the details of child co-use with an adult or another child are likely varied. Developmentally appropriate websites are increasingly available and accessing websites is an increasingly common behaviour among young school-age children (Hofferth, 2010). Visiting websites at someone else's house may reflect a peer play activity. Some of the differences in children's rating of the peer self-esteem items we are explained by differences in their report of community website access. Internet use during the early school years is a complex behaviour that includes use of various applications across a range of contexts. Various uses of the internet under various conditions are related to self-esteem in a variety of ways, some, but not all, predictive of positive developmental trajectories.

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Table 1. Percentage of children selecting each response-Option for internet use rating scale items

		Response-Option		
Internet Use	Item	Never	Sometimes	Often
School Internet Use				
I use the internet at home.	38	2.7%	83.8%	13.5%
I use email at school.	38	78.9%	18.4%	2.6%
I instant message at school.	38	91.7%	8.3%	0.0%
I use the Internet to play games at school.	38	13.2%	68.4%	18.4%
I visit websites at school.	38	37.8%	59.5%	2.7%
Home Internet Use				
I use the internet at home.	38	34.2%	47.4%	18.4%
I use email at home.	38	64.1%	28.2%	7.7%
I instant message at home.	38	86.1%	11.1%	2.8%
I use the internet to play games at home.	38	27.8%	38.9%	33.3%
I visit websites at home.	38	37.8%	46.6%	13.5%
Community Internet Use				
I use the internet at someone else's house.	38	47.4%	44.7%	7.9%
I use email when I am at someone else's house.	38	73.7%	23.7%	2.6%
I instant message when I am at someone else's house.	38	83.3%	11.1%	5.6%
I use the Internet to play games at someone else's house.	38	60.5%	36.8%	2.6%
I visit websites when I am at someone else's house.	38	64.9%	32.4%	2.7%

Table 2. Description of child ratings of self-esteem for 6- to 8-year-olds

Rating Scale Item (combined score)	N	mean	Minimum	Maximum	SD
School Self-Esteem (combined score)		**8.19**	**3**	**11**	**1.73**
My teacher likes my work.	37	2.62	1	3	0.55
My teacher is mean to me.	38	1.21	1	3	0.53
School work is difficult for me.	38	1.66	1	3	0.68
Kids at school like to work with me.	38	2.39	1	3	0.60
Home Self-Esteem (combined score)		**10.16**	**7**	**12**	**1.46**
I wish I had a different family.	38	1.18	1	3	0.46
I am an important person in my family.	36	2.44	1	3	0.65
My parents are proud of me.	36	2.42	1	3	0.68
My parents are happy with my report card.	38	2.69	1	3	0.58
Peer Self-Esteem (combined score)		**8.87**	**3**	**11**	**1.60**
Kids like to play with me.	38	2.64	1	3	0.54
Kids pick on me.	37	1.24	1	3	0.49
I wish I had more friends.	38	2.08	1	3	0.77
Other kids wish they were like me.	35	1.77	1	3	0.67

Note.
1 = never
2 = sometimes
3 = often

Table 3. Stepwise regression analysis: internet use predicting child self-esteem

Self-Esteem	Predictor	Beta	*t* value	r^2(adj)	*F*value
Home	IM at someone else's house.	-.372	-2.09*	.11	(1, 27) 4.35
School	IM at school.	.493	2.93**	.21	(1, 27) 8.60
Peer	Websites at someone else's house.	.369	2.06*	.10	(1, 27) 4.26

*p< .05, **p< .01

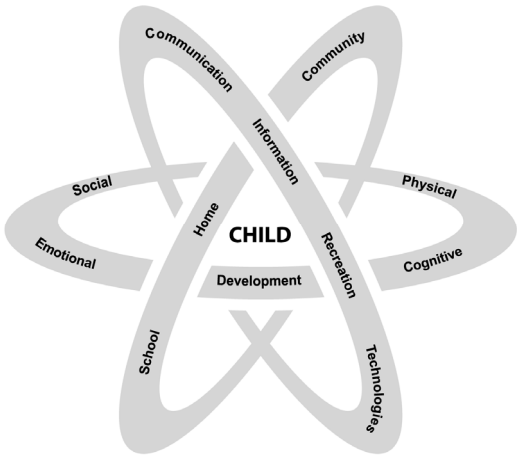

Figure 1. The ecological techno-micro-system (Johnson, 2010b)