Electronic Media and Leisure-Time Reading: Responses of School Librarians

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This study investigated how electronic media impact youth's leisure-time reading at different academic levels. One hundred two school librarians participated in an online survey. These respondents reported that playing computer games, watching TV, and surfing the Internet compete with reading. Primary school librarians mainly agreed with the impact of TV and computer games, but not with that of the Internet; at the middle school level, the perceived influence of the Internet increases, but it is still less important than computer games and TV; high school librarians agreed with the perceived effects of TV, the Internet, and computer games on leisure-time reading.

Keywords: Leisure Reading; Electronic Media; School Librarianship

Introduction

The studies on the influence of electronic versus print media to reading yielded different results at different times and places. Wright et al. (2001) defined electronic media as "TV and computer/video games." A recent study by the National Endowment for the Arts (2004) suggested a decline in literary reading in the United States and brought much attention to revitalizing the role of reading in America (Institute of Museum and Library Services, 2006). Literary reading was defined in the National Endowment for the Arts (NEA) report as reading "any novels, short stories, poetry or plays." The NEA also queried if people "read any book" in the past year in any format, "including e-formats," and discovered a drop from 60.9% in 1992 to 56.6% in 2002 (Bauerlein, 2004). The NEA report recommended further studies on how digital media, especially TV, the Internet, and computer games, compete with leisure reading – an activity of the readers' own choice as opposed to what is required by work or study (Hughes-Hassell & Lutz, 2006). Recently, the NEA summarized some statistical reports and concluded that reading among youth also fell, due to the possible influence of digital entertainment media (National Endowment for the Arts, 2007). In this paper, electronic media is defined as "TV, Internet, and computer games," as the Internet has become one of the dominant media nowadays.

What can school librarians do to enhance leisure-time reading? Previous studies found reading behaviors change when reading materials change. Rosenblatt's transactional theory (1986) suggested a "reciprocal, mutually defining relationship" between the reader and the text. The relationship between reader and text is much like that between the river and its banks, each producing its effects upon the other.

More recently, library studies indicated that books published in the digital age also change the way people read. For example, the Internet might already have changed readers' attitudes towards different formats of books that were recently published. Dresang and McClelland (1999) found that "authors, illustrators, editors, designers, and publishers have been producing books with digital age characteristics of interactivity, connectivity, and access." Reading is also influenced by multiple factors such as gender differences (Moffitt & Wartella, 1992) and parental involvement (Warren, Prater, & Griswold, 1990).

Literature review shows digital media (TV, the Internet, and computer games) seem to be the most important factors that affect reading today, especially among younger populations (Salomon, 1979). Surfing the Internet, watching TV, and playing computer games create learning environments where children can passively receive what is programmed in digital media. Printed and digital texts are not merely different formats of the same educational media, but they have different purposes, procedures, and cognitive effects (Reinking, 2001). The NEA implied that digital media influenced the declining reading rate and encouraged further investigation. Because the NEA study focused on adult readers, it may miss the connection between reading and young readers. Since school librarians serve young readers in elementary, middle, and high schools, it is possible for them to observe what impacts leisure reading. For this reason, as a first step, the effects of digital media should be investigated by studying the beliefs and opinions of school librarians. Findings from such studies will provide an important basis for further studies on policy changes on library youth services. Such research reports may also help youth librarians design more relevant reading programs.

Methods

School librarians traditionally are interested in reading and literacy. They go to great lengths to share with each other how to get young adults into libraries, how to create enticing programs for them, and how to turn "non-readers" into "readers." (Jones, Gorman, & Suellentrop, 2004). They interact with children at different age levels – primary, middle, and high – and they may observe how various age groups use digital media differently. After the elementary years, they reported many young people stop coming to libraries for "leisure reading." Data-gathering methods commonly used with adults, such as interviews and questionnaires, are often not suitable for use with children whose oral and written language skills may not be well developed. Thus, it is relevant to create a survey instrument to evaluate school librarians' opinions on what may impact youth's leisure reading. To fulfil this purpose, this study investigated the following research questions:

(1) How reliably can we measure librarians' attitudes on the impact of digital media on leisure-time reading?

(2) According to school librarians, how do digital media, particularly TV, the Internet, and computer games, compete with youth's leisure-time reading?

(3) Do librarians in different academic environments – primary, middle, and high schools – react differently to the influence of digital media (TV, the Internet, computer games) on youth's leisure-time reading?

Before choosing survey questions, the author reviewed existing literature on the effects of digital media on leisure-time reading. Notable studies included Smith's work on the correlation between reading print materials (books, periodicals, and personal documents) and literacy abilities (Smith, 1996), and his qualitative study using the diary method (Smith, 2000). Studies by Holt and Smith (2005) on cultural differences between African-American adults and European-Americans, as well as a short reading-attitude survey by Tunnell (1988), were also considered. Based on the literature review, a new instrument surveying librarians' attitudes toward digital media and their impact on leisure reading was created. A university statistician and two professors from ALA-accredited library schools evaluated the questionnaire. The survey questions are attached as the Appendix.

The questionnaire was pilot-tested by graduate students. In December 2004, it was published online in LM_NET, the listserv for school librarians. A second call for participation was posted after the deadline to recruit more participants. In total, one hundred two librarians participated in the online survey. Forty-six percent of the participants work at elementary schools, 15% at middle schools, and 39% at high schools. Twenty-five percent of the schools were urban, 45% were suburban, and 30% were rural. On average, each school has 762 students (SD = 745) and 14,794 volumes of books (SD = 10,446). Seventy-one percent of the students were Caucasian and 29% were minorities.

To answer Question 1, librarians' opinions on how digital media impact leisure-time reading will be reported using Liket-scale questions, with rankings from 1 to 5. Descriptive statistics will be reported for Question 2. Opinions from school librarians from different school types will be compared using Analysis of Variances (ANOVA) to answer Question 3.

Results

The author estimated Cronbach's coefficient alpha (α) for the internal-consistency reliability using SPSS software. The Cronbach alpha value was 0.748 for the current sample. Cronbach alpha value exceeding .70 is considered acceptable (Helmstadter, 1964). Therefore, a moderately reliable score for this instrument has been achieved.

The Reliability of the Questionnaire

As previously mentioned, the questionnaire was evaluated by library science professors and a statistician to ensure content validity. In addition, the author conducted factor analysis to estimate how well each question item measured the variables, which indicates the validity of the measurement. According to Table 1, three factors can be extracted from eight question items. These three factors were summarized as Entertainment (Q6_game, Q1_TV, Q5_chat), Communication (Q4_email, Q3_InetforBooks), and Social Networking (Q2_Internet, Q7_overload, Q10_family).

Table 1
Factor Loading of Each Question Item

Test Items	Principal Components

	1	2	3
Q6_game	.812		
Q1_TV	.792		
Q5_chat	.723		
Q4_email		.739	
Q3_IntforBooks		.724	
Q2_Internet			.503
Q7_Overload			.795
Q10_family			.756

Note: Three principal components with Eigenvalues higher than one represented 64% of the total variances explained.

Table 2 listed three factors with Eigenvalues more than one. An Eigenvalue indicates the amount of variance that can be accounted for by one average variable. The higher the Eigenvalue, the more effectively a factor can be measured in a questionnaire. According to Table 2, three factors accounted for 64% of variance scores in the current study.

Table 2
Factor Analysis on Survey Data

Components	Extraction Sum of Squared Loadings		
	Eigenvalue	% of Variance	Cumulative %
1	2.52	31.55	31.55
2	1.45	18.08	49.63
3	1.16	14.46	64.09

Note: Three principal components were extracted with Eigenvalues more than one.

Descriptive Statistics

The author calculated descriptive statistics for the responses. Some participants provided their contact information for follow-up studies, and the personal information was deleted during data analysis. Table 3 presents the descriptive statistics for the survey.

Table 3
Descriptive Statistics for the Survey Questions

Questions	Mean	Standard Deviation	Skewness	Kurtosis
Q1 (TV)	3.33	0.59	-0.22	-0.76
Q2 (Internet)	3.12	0.77	-0.14	-1.36
Q3 (I_Books)	1.93	0.74	0.58	0.42
Q4 (email)	2.72	0.70	0.37	-0.47
Q5 (chat)	2.96	0.70	-0.04	-0.42
Q6 (game)	3.39	0.65	-0.80	0.67
Q7 (overload)	1.72	0.56	-0.04	-0.63

Q8 (movies)	3.05	0.63	-0.27	0.59
Q9 (sports)	2.59	0.61	0.39	-0.01
Q10 (family)	3.40	0.55	-0.03	-1.40
Q11 (libwork)	2.99	0.58	0.37	-0.27
Q12 (libprog)	3.37	0.57	-0.17	-0.98

Note: N = 102, 1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree.

Table 3 indicates nearly all variables have a normal distribution with skewness and kurtosis coefficients within the range of -1 to +1. Descriptive statistics revealed librarians agreed or strongly agreed (1 = strongly disagree, and 4 = strongly agree) with six possible items that impact youth's leisure-time reading: family influence (3.4), computer games (3.39), TV (3.33), library reading programs (3.37), surfing the Internet (3.12), and movies (3.05). Scores for other questions did not suggest plausible factors.

ANOVA Results

To answer the second research question, the author conducted three analysis of variance tests (ANOVA). The dependent variables were the impact of TV, the Internet, and computer games on leisure-time reading, respectively; the independent variable was the academic environment of the school library (primary, middle, and high school). Levence's statistics coefficient revealed a non-statistically significant Test of Homogeneity for TV (p = .906), the Internet (p = .227), and computer games (p = .658); thus the data fit the condition for using analysis of variance (ANOVA).

Table 4
The Impact of TV, the Internet, and Computer Games on Leisure Reading

Media Types		SOS	df	MS	F	Sig.	eta^2
TV	Between Groups	7.88	2	3.94	7.69	.001*	.15
	Within Groups	45.60	89	.512			
	Total	53.48	91				
Internet	Between Groups	9.77	2	4.89	3.60	.031**	.07
	Within Groups	120.71	89	1.36			
	Total	130.48	91				
Games	Between Groups	2.90	2	1.45	1.87	.160	.04
	Within Groups	68.09	88	.77			
	Total	70.99	90				

Note: * Statistically significant at p = .001 level. ** Statistically significant at p = .05 level.

Table 4 indicates the opinions of school librarians who work in different settings: primary, secondary, and high schools. According to ANOVA tests, there were statistically significant differences for the impact of TV (p = 0.001) and the Internet (p = 0.03), but not for computer games. The effect sizes (eta squared) are 0.15 for TV, 0.07 for the Internet, and 0.04 for computer games, indicating TV is a more important factor in influencing reading rates.

Figure 1.

The Impact of TV, the Internet and Computer Games According to Librarians at Different School Levels

Note: 1 = strongly disagree, 2 = disagree, 3 = agree, and 4 = strongly agree

Figure 1 reveals that librarians working at different school levels reported the impact of TV, the Internet, and computer games to leisure-time reading differently. Based on Figure 1, primary school librarians seemed to agree with the impact of TV and computer games, but not with that of the Internet. At the middle school level, the perceived influence of the Internet increases, but it is still less important than computer games and TV. High school librarians agreed with the perceived effects of TV, the Internet, and computer games on leisure-time reading, for they themselves perceived minimal differences.

Additional Factors Impacting Leisure Reading

Forty-three participants (42%) provided feedback to an open-ended question regarding what additional factors might impact leisure reading. The following were some examples:

A: "I think parents need to model this behavior. Students are more likely to read if they have friends who read, or if they visit a well-stocked, inviting library with a friendly librarian committed to meeting their needs."

B: “As students get older, there are more things competing for their time: heavier scholastic loads, increase in mobility with access to cars, school sports take up more time, increase in activities with the opposite sex.”

C: “The ‘cool’ factor (those who read more are seen as ‘nerds’ and are less ‘cool’).”

D: “The internet in particular – at present – changes more WHAT students are reading than HOW MUCH they are reading.”

E: “Students, at least at our school, have Sustained Silent Reading (SSR) in class on a regular basis in the middle school. This is not part of the curriculum in the high school, and they read only what the teacher selects. I think this cuts down significantly on the leisure reading of our high schoolers. If we don’t demonstrate value, they place no value on it. We need to model reading as a leisure activity.”

F: “Quality and availability of books that are of interest to them; knowledgeable librarians who read to and talk about books with students. Parents encouraging their children and reading with them; teachers’ attitudes; open library; reading programs; time in school to read.”

The author carried out content analysis of the feedback. Content analysis is a research technique used for making replicable and valid inferences from texts (or other meaningful matter) to the contexts of their use (Krippendorf, 2004). The theme and sample keywords are listed in Table 5.

Table 5
Additional Factors that Impact Leisure Reading (N = 43)

Themes	Number of Respondents	Sample Keywords
Role Models	27 (63%)	• Parent(s), Teachers, Librarians, Friends
Workload	27 (63%)	• School work (school load, required reading, extra assignments) • Family work (taking care of siblings)
Social Influence	17 (40%)	• “being cool” with non-reading friends • family expectations • distractions from TV/Internet/Games • Other options/activities to do
Facilities	16 (37%)	• help from librarians, teachers • access to libraries: materials, programs (both positive and negative) • social-economical support: food, homelessness, family culture
Print Materials	13 (30%)	• Books available in general • Books fitting reading level

As seen in Table 5, 27 (63%) respondents suggested role models and workload as additional factors that impact leisure-time reading. Other important factors include social influences (suggested by 40% of the respondents), facilities (37% of the respondents), and print materials (30% of the respondents). These factors will be investigated in future studies.

Conclusions and Discussions

Responses from school librarians suggested digital media might impact children's reading differently per age group. It can be inferred that TV, the Internet, and computer games impact those older of school library users about the same, but the Internet has less impact than other factors on younger user groups. Because of their higher reading ability, the Internet seems to impact older students more, while TV and computer games have the greater influence on younger readers. Such observations may help libraries to design more reading programs by attracting different age groups with appropriate learning media for leisure reading.

It is noteworthy that the Kaiser Foundation (Roberts, Foehr, & Rideout, 2005) recently reported that reading by youth as a collective unit might not have declined over the past five years but that it instead consumed, on average, less time than using other media. Youth tend to do more multi-tasking in media-rich environments. The present survey might help to explain how information technologies have reshaped leisure reading activities. Playing computer games, watching TV, and surfing the Internet were among those factors competing with leisure reading, but each factor has different effects on different users. If the trend of using more digital media instead of reading continues into adulthood, then the NEA's conclusion of reading in decline would seem valid. However, more studies are needed, in particular, those with data from readers and non-readers to justify the aforementioned conclusion.

Librarians who participated in the current study suggested additional factors that may impact leisure-time reading such as family role models, workload, social influences, facilities, and print materials. Experimental studies can be designed to find out how some of these factors could promote reading. For example, high schoolers who join reading clubs might change their attitude toward reading if it is perceived as a "cool" activity.

To improve the reliability and validity of the survey instrument, the author pilot-tested the questionnaire before distributing it to librarians over LM_NET; however, a sampling bias might still exist. Qualitative results from the survey will provide more abundant information, self-validate findings from this study, and limit the statistical bias. Interviews of school library experts from the United States will be conducted in future studies, further validating the questionnaire.

As recommended by school librarians participating in this study, parents and libraries need to work together so children will spend more time reading and become book lovers. Whelan (2004) suggested that libraries need to do "enough to electrify and engage them in reading." Publishers called for collected actions to bring words, paper, ink, and readers together. They encouraged authors to tour schools and local communities. It was suggested that brand books, such as Harry Potter, be promoted to the fans of already established user groups (Shandler, Thalberg, & Lichtenberg, 2004). In general, the NEA study did not report the importance of libraries in promoting literacy. However, one can still take the report as an alert for more collaborative efforts from multiple disciplines, to promote reading with both print and electronic media, and to turn around the NEA statistics.

By surveying librarians, the author worked around both the time constricts and confidentiality concerns of questioning students directly. The author acknowledges that limitations exist in soliciting opinions from school librarians exclusively. Future studies will

focus on international perspectives of leisure-time reading, in order to generalize findings from broader populations and to suggest improved practices that school librarians can enact to promote leisure-time reading.

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Appendix: Survey Questions

1. Students who frequently watch TV read fewer books.
2. Browsing the Internet often results in reading less.
3. Students surf the Internet to find books to read for leisure.
4. Students who often spend more time on email tend to read less.
5. Online activities, such as voice/video chat, result in reading less.
6. Students playing excessive video games tend to read less.
7. Because many books are published today, it is hard for students to choose what to read during their personal leisure time.
8. Students watch more movies today rather than read books during leisure time.
9. Students who participate in multiple sporting events tend to read less.
10. Family participation, such as parents' assistance with homework, may enhance students reading books.
11. Volunteer library work encourages students to read books.
12. Library programs, such as story time or summer reading programs, encourage students to read more.
13. What are other factors that impact reading for leisure?

Statement of Originality

This statement certifies that the paper above is based upon original research undertaken by the author and that the paper was conceived and written by the author(s) alone and has not been published elsewhere. All information and ideas from others is referenced. The author would like to thank respondents from LM_NET for their help. This project was supported in part by a grant from the National Endowment for the Arts (order no. C05-36).