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Stacey L. Kite

*Johnson & Wales University - Providence, skite@jwu.edu*

Robert K. Gable

*Johnson & Wales University - Providence, rgable@jwu.edu*

Lawrence P. Filippelli

*Johnson & Wales University - Providence, lfilippelli@jwu.edu*

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**Relationship of Gender, Grade Level, and School  
Demographics to Middle School Students' Knowledge of  
Appropriate Behavior and their Behaviors in Using Social  
Networking Sites<sup>1</sup>**

**Stacey L. Kite**

**Robert K. Gable**

**Education Leadership Doctoral Program  
Center for Research & Evaluation  
The Alan Shawn Feinstein Graduate School  
Johnson & Wales University**

**Lawrence P. Filippelli**

**Scituate School Department, Rhode Island  
Center for Research & Evaluation  
The Alan Shawn Feinstein Graduate School  
Johnson & Wales University**

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## **Purpose of the Study**

The purpose of this study was to investigate middle school students' knowledge of appropriate use and risks associated with the use of online forums such as social networking sites, e-mail, and IM. As noted by McKenna (2007), this line of research is important since social networking sites, such as Myspace and Facebook, the increase in cyberbullying, and instant messaging programs are creating numerous problems for school administrators.

## **Framework**

Supporting safe environments for students at school or at home has always been an important concern for educators and parents. The wide use of the internet today has the potential for students to become victims of internet sexual predators or other students who engage in inappropriate cyberbullying behaviors. Goodstein (2007) reported that a recent survey by Cox Communications and the Center for Missing and Exploited Children indicated that 14% of teenagers have face-to-face meetings with people they have met online (p. 71). Could some of these strangers actually be internet predators? Goodstein also reported that 16% of  $N = 2010$  teens under age 18 surveyed indicated they had virtual sex or cybersex (i.e., chat or webcam) with someone sexually they met online. It is clear that school administrators and parents need to be aware of students' knowledge of appropriate behaviors and, more importantly, the possible consequences of inappropriate behaviors in the use of social networking sites.

## Methodology

### Sample

A total of  $N=588$  grade 7-8 male and female students from two schools in a Northeast state participated in this study. The gathered sample consisted of students from one urban ( $n=185$ ) and one suburban ( $n=403$ ) school. The students responded to the *Survey of Internet Risk and Behavior* (version 1) during regularly scheduled school activity periods.

### Instrumentation

**Dimensions.** The *Survey of Internet Risk and Behavior* is a self-administered questionnaire consisting of 33 items; 2 demographic items, 7 informational items that investigated the views and experiences of the students with regard to social networking, and 21 items composing three dimensions: Knowledge, Bullying Behavior, and Internet Use. The demographic questions sought to assist in the investigation of profiling the student at risk the most.

The Knowledge dimension was composed of 16 items describing the students' knowledge of appropriate behavior on social networks and potential risk of internet predators (Franek, 2005/2006; McKenna, 2007). Bullying Behavior was composed of 2 items that directly queried the students on their bullying behaviors on both myspace and instant messenger sites (Lenhart; Ma). Finally, Internet Use was composed of 3 items used to assess if the respondents use the internet for instant messaging, e-mail, or myspace on a frequent basis (Horrigan, 2007; Subrahmanyam et al., 2001).

**Response Format.** The response and scoring technique employed was designed to produce scores where high scoring students have higher levels of knowledge or more frequent self-disclosed or parental behaviors described by the statements used to measure each respective scale.

Students responded to each statement by selecting Agree, Disagree, or Don't Know. Note: Using a "correct" response grid, each statement received 1 point for the "appropriate" or "correct" response and 0 points for the "incorrect" or Don't Know response. For example, item 2, *Making threats online can get me in trouble with the police*, would receive 1 point for agree (correct response), and item 5, *Putting personal contact information on a social networking site is no big deal*, would receive 1 point for disagree (correct response).

**Validity and Reliability.** Content validity of the survey items was supported through the literature (Franek, 2006; Horrigan, 2007; McKenna, 2007; Lenhart, 2007; Ma, 2001; Shariff, 2008; Subrahmanyam et al., 2001; Weaver, 2007;) and a judgmental review by  $N = 5$  middle school teachers. Cronbach's alpha internal consistency reliabilities of the data from the respective dimensions were all at an acceptable level: Knowledge, .84; Bullying Behavior, .72; Internet Usage, .78.

### **Data Analysis**

Descriptive data, using response percentages for the "agree", "disagree", and "don't know" options, were calculated along with dimension and item-level mean correct percents. Dimension and item-level comparisons for gender, grade level, and school demographics were run using t-tests. Items were also

ranked within each category based on the percent “correct” to identify the high and low knowledge and behavior areas.

## Results

### Total Group

Primary findings were troubling in several areas. The overall Knowledge dimension, regarding appropriate behaviors and risk of internet predators, revealed that only 59% of the students offered appropriate responses. Table 1, entitled Social Networking Experiences, Opinions, Knowledge, and Behaviors, contains some items of concern: *With the contact information I put on myspace or facebook, it would be easy for an internet predator to contact me* (Agree/Correct: 34%); *If I were contacted by someone I didn't know on Instant Messenger, I would tell an adult* (Agree/Correct: 35%); *An internet predator can easily use sites such as Google earth, MSN live or other programs to locate my school and house* (Agree/Correct: 41%).

**Table 1**  
**Social Networking Experiences, Opinions, Knowledge and Behaviors:**  
**Response Percentages (N=185)**

	Item	Correct	A	D	D/K
17.	With the contact information I put on myspace or facebook, it would be easy for an internet predator to contact me.	<b>Agree</b>	34	39	27
20.	If I were contacted by some I didn't know on Instant Messenger, I would tell an adult.	<b>Agree</b>	35	30	35
21.	An internet predator can easily use sites such as google earth, MSN live or other programs to locate my school and house.	<b>Agree</b>	41	18	41

*Note.* Bold percents indicate "appropriate" response.

Table 2, entitled Behavior: Bullying and Internet Use, presents the results for four items. Regarding Bullying Behavior 10% of the students agreed with the statement *I have threatened or bullied another student online using instant messenger*. While 10% might at first seem low, it does represent  $n = 59$  students in this sample of  $N = 588$ . Finally, regarding Internet Usage, 49% of the students reported they used instant messaging daily and 36% indicated they access social networking sites more than three times per week.

**Table 2**  
**Behavior: Bullying and Internet Use**

	Item	A	D	D/K
18.	I have threatened or bullied another student online using an instant messenger.	10	<b>76</b>	14
27.	I log onto an instant messaging program daily.	49	34	17
30.	I access social networking sites more than three times per week.	36	42	22
33.	I access social networking sites at least once a day.	29	49	22

*Note.* The bold percent for item 18 indicates the "appropriate" response.

## Gender

Table 3, entitled Knowledge and Behavior: Bullying and Internet Use by Gender reports that females ( $N=263$ ) offered significantly higher levels of "correct" responses (61%) for the overall Knowledge dimension than males ( $N=317$ ; 56%;  $p=.03$ ) and for the following items: *Giving my personal information away to an IM buddy I am unfamiliar with is no big deal* (Disagree/Correct:

Females, 83%; Males, 74%;  $p=.01$ ) and *If I were being harassed by another student, I would tell a teacher, parent, or another adult* (Agree/Correct: Females, 64%; Males, 47%;  $p=.001$ ). Further, females offered more correct responses for the overall Bullying Behavior dimension ( Females 84%, Males 76%;  $p=.01$ ) and the statement

*I have threatened or bullied another student online using an instant messenger* (Disagree/Correct: Females, 82%; Males 73%;  $p=.01$ ). Finally, Females also responded using the internet less often than males on the Internet Usage dimension (39% vs. 46%;  $p=.03$ ) and the statement *I log onto an instant messaging program daily* (35% vs. 46%;  $p=.01$ ).

**Table 3**  
**Knowledge and Behavior: Bullying and Internet Use by Gender**

Item		Female	Male	
		%	%	$p$
	Overall Knowledge	61	56	.03
9.	Giving personal information away to an IM buddy I am unfamiliar with is no big deal.	83	74	.01
29.	If I were being harassed by another student, I would tell a teacher, parent, or another adult.	64	47	.001
	Overall Bullying Behavior	84	76	.01
22.	I have threatened or bullied another student online using an instant messenger.	82	73	.01
	Overall Internet Usage	39	46	.03
27.	I log onto an instant messaging program daily	35	46	.01

## Grade Level

Grade 8 ( $N=289$ ) students offered significantly higher levels of "correct" response than grade 7 students ( $N=292$ ) ( $p<.001$ ) for the overall Knowledge, Bullying Behavior, and Internet Usage dimensions. That is, they had a higher level of knowing what is appropriate, as well as indicating lower levels of bullying behavior and less internet usage.

## School Demographics

Suburban school students ( $N=403$ ) offered higher levels of correct responses (61%) than urban students ( $N=403$ , 54%) for the overall Knowledge dimension ( $p=.01$ ) and two of the knowledge items: *Giving my personal information away to an IM buddy I am unfamiliar with is no big deal* (Disagree/Correct: 83% vs. 72%,  $p=.01$ ) and *Threats online that I carry out at school can get me into trouble* (Agree/Correct: 61% vs. 39%,  $p=.001$ ).

## Summary of Major Findings

1. Findings reveal that overall knowledge of internet risk and behaviors were significantly lower than anticipated (59%).
2. Females reported higher levels of knowledge regarding internet risk and behavior and also reported less often than males to participating in bullying behaviors online.
3. Females use instant messaging, e-mail, and social networking sites more often than males.

4. As students progressed from 7<sup>th</sup> grade to 8<sup>th</sup> grade, their knowledge of internet risk and appropriate behaviors increased.
5. Suburban school students reported significantly higher levels of correct responses to the Knowledge dimension than urban students.

### **Educational Implications**

It is clear that the wide use of the internet today can profoundly influence behavior. Furthermore, as internet activity increases, it exposes students to risks such as internet predators and potential cyberbullying by other students. The survey data presented in this study suggests that students' knowledge of appropriate behaviors and risk of internet predators may not be ideal for creating safe school and home environments. The lack of knowledge regarding risk on the internet is a clear sign that student need to be educated in this area earlier than they are currently. Only when students are armed with the knowledge of these risks can they begin to make smart choices.

Findings also suggest bullying behavior and frequent use of instant messaging and social network sites are areas in need of education. This is corroborated in the literature. Parents, in a study conducted by America Online (AOL) reported that their children were more likely to engage in fights online as oppose to the telephone (Tarpley, 2001). Parents, as well as school administrators need to be aware of these important issues and create educational opportunities to facilitate proper student knowledge and behaviors.

Having access to the internet doesn't always mean trouble for students. The internet is a vast resource for many purposes and with proper education and supervision, educational institutions, working in conjunction with parents and the community, can teach their students about the dangers of accessing the Internet unsupervised.

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