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Internet Safety in Southern Ontario Schools: A Survey of the Perceptions of Preservice Teachers

This article reports on a survey conducted with preservice teachers about their perceptions of Internet safety in schools in southern Ontario. Specifically, did the student teachers believe their students were engaging in risky behavior, and what steps were schools taking to keep them safe? The survey found results consistent with other reports. It also found that these teachers perceived that students spent a substantial amount of time using the Internet, that use was related to age, and that students may not have been supervised adequately. In addition, individual teachers rather than administrators were perceived to be primarily responsible for students' online access and safety. These findings suggest that schools could take further steps to protect their students better.

Cet article porte sur une enquête entreprise auprès de stagiaires pour connaître leurs perceptions de la sécurité Internet dans les écoles du sud de l'Ontario. Plus précisément, nous cherchions à savoir si les stagiaires croyaient que le comportement des élèves était risqué. Quelles démarches l'école entreprenait-elle pour assurer la sécurité des élèves? Les résultats de l'enquête étaient compatibles avec ceux des autres études. L'enquête a révélé que les enseignants trouvaient que les élèves passaient beaucoup de temps à naviguer dans l'Internet, qu'il y avait un lien entre l'âge des élèves et l'emploi qu'ils faisaient de l'Internet, et que la supervision des élèves était peut-être inadéquate. De plus, on trouvait que la responsabilité de surveiller l'accès des élèves à l'Internet et d'assurer leur sécurité pendant qu'ils y travaillaient revenait aux enseignants, plutôt qu'aux administrateurs. Les résultats laissent supposer que les écoles pourraient agir davantage pour mieux protéger leurs élèves.

Introduction

The safety of children when using the Internet is an issue that has received a great deal of publicity and research (Adelman, 2004; Berson, 2000, 2002; Berson, Berson, & Ralston, 1999; Finkelhor, Mitchell, & Wolak, 2000; Wolak, Mitchell, & Finkelhor, 2002, 2003). There has also been substantial effort by groups and individuals to make Internet safety resources available through their Web sites (see Appendix A). All are dedicated to making the Internet a safer place. However, there are continuing reports of children acting in risky ways online. Children's risky behavior is defined as chatting while unsupervised, chatting in unmoderated chat rooms with anonymous individuals, using one-on-one instant messaging or text messaging with those same individuals, or meeting face to face with individuals known solely from online contact. The risk arises from the possibility that children could be lured into dangerous situations by sexual predators and pedophiles using these technologies, and the children

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could suffer harm as a consequence. Analysis of this relatively new environment was conducted by garnering the views of people who are in an important position to counter the risks faced by children: teachers, specifically preservice teachers. To that point, this important group's views had not been researched.

Four research questions formed the basis of this study. What kinds of risky online behavior do preservice teachers perceive are being exhibited by students in K-12 public schools in southern Ontario? Are these behaviors similar in kind and extent to those described in the international literature? What steps do student teachers see being taken by schools to keep their students safe? What research foci will be most fruitful to follow with school students in subsequent qualitative research?

In order to answer these questions, a survey was completed by preservice teachers in a cohort that ranged in age from 21 to 39 who were following a Bachelor of Education (BEd) program at a university in southern Ontario, Canada. Participants were asked to share their perceptions of risky online behavior that they saw occurring in the schools in which they were practice teaching. One rationale for asking preservice teachers for their perceptions is that by definition they hold insider-outsider perspectives.

Insider-outsider theory concerns how insiders in an organization have, and use, power that outsiders do not have. Although this theory has developed in the literature in economics (Lindbeck & Snower, 1990), it originally came from the sociology of knowledge (Merton, 1972). Sociologically speaking, insiders have privileged access to information (and hence power) compared with outsiders because of their membership in a dominant group. In schools, teachers and administrators are insiders, whereas students, parents, and the general public are outsiders.

From my own long-term practice as a supervisor of preservice teachers in secondary school settings, I had observed that preservice teachers perceive themselves as teachers (hence as insiders on a school staff), and they usually align their views to those of regular classroom teachers. Like school staff members (Berson, 2002), preservice teachers have extensive opportunities to interact with students and observe their online behavior. Thus they are well informed about the actions of their school charges. As teachers, the preservice teachers usually attend to, and mentally note, the behavior of students, including overheard snippets of student conversation, in their classes and around their schools. However, I had observed on countless occasions over many years in various roles as preservice teacher supervisor, associate teacher, and regular high school teacher that school students acted as if preservice teachers were outsiders. Three explanations can be theorized to form the basis of this behavior: preservice teachers have no actual power in themselves to award the final grades of students; they are closer to school students' own ages; and school students identify the preservice teacher role as that of student.

Apart from my observation that most school students do not hide proscribed online behavior as carefully from student teachers as they do from their regular teachers, there are some decided advantages in surveying preservice teachers rather than regular teachers. As outsiders, preservice teachers do not have to reassure parents and the public that students are being adequately supervised in schools if indeed the students are not. Thus student teachers may

be more likely to report student behavior that counters the interests of full-time permanent teachers. Furthermore, surveying preservice teachers allowed research to be conducted quickly and efficiently over a wide geographic area, a number of different school boards, and a large number of schools at all levels of public schooling. This strategy enabled a better snapshot to be taken. Finally, preservice teachers represent a new generation of teachers in this historic technologically rich era of major social change first described by Toffler (1970, 1980). Thus it was important in itself to examine what preservice teachers perceived as the reality of Internet use.

The survey was intended to clarify issues that might be explored qualitatively in subsequent work. Survey questions (see Appendix B) were intended to elicit preservice teachers' perceptions of their students' Internet use in schools across the entire age range of school students. They were designed to find out how much, how often, and for what purposes students used the Internet. They were intended to measure, if only grossly, the level of supervision of these activities. Analysis of these variables helped to uncover schools' practices that related to students' Internet use and online safety.

The statistics reported in this article do not attempt to describe actual rates of risky behavior in valid and reliable ways because school students were not themselves surveyed, nor were variables controlled for age, jurisdiction, school, and so on. Furthermore, the statistics refer to a variety of schools in several school board jurisdictions in southern Ontario. Therefore, the statistics simply attempt to identify in gross ways the types of behavior that need to be examined more carefully.

The Inherent Danger of Unsupervised Internet Use

Internet safety is an issue, the complexity of which is becoming more apparent and more pervasive (Allinich & Kreston, 2001; Wishart, 2004). At the same time, the danger is being simplified and sensationalized in the mass media (Black, 2003). For example, newspaper, radio, and television reports often describe Internet-related situations in which children have been badly hurt or killed, but rarely go beyond simplified solutions for parents and guardians. However, the danger to children is much more complex, and it ranges widely from the legal ramifications of infringing copyright through inappropriate and unanticipated viewing of online pornography to the extreme dangers of cyberstalking (Maxwell, 2001), harassment, and even Internet-facilitated criminal abduction and murder (Bullen & Harre, 2000; Finkelhor et al., 2000).

A comprehensive study (Environics Research Group, 2001) of 9- to 17-year-old children that found that 56% of Canadian children used Internet-based chat rooms (more than two thirds—72%—of that group used unmonitored chat rooms) and 41% used instant messaging. However, more disturbingly, they found that almost 20% of children had been e-mailed a message that bothered or frightened them. In such incidents, children more often told a friend than an adult about it. More than 10% of those who used instant messaging said that they had been threatened while using it. The study also found that more than 40% of their sample had been approached by someone asking for their personal information. Nearly half of the group that had been asked for information had given it, whereas fewer than 10% had told their parents about the encounter. About 25% of children reported that someone they met on the Internet had

asked to meet them face to face, and more than 10% had actually met that person. Of that group, 12% said they had had a bad experience. In 7% of the cases, children said that the stranger initiated sexual contact, and 6% said the stranger was violent.

There is extensive documentation of other forms of discomfort felt by children when confronted with pornography and sexual harassment in chat rooms (Dewey, 2002). In addition, Wolak et al. (2003) have found that both boys and girls who are troubled and have difficult relationships with parents are most at risk of forming relationships online. Although not all such relationships are by nature dangerous or unhealthy, they always carry an increased risk of meeting an inappropriate partner due to the lack of contextual cues in online conversations.

The situation is even more complex in that the attitudes of parents and their children regarding online behavior are often quite different (Turrow & Nir, 2000), making parental advice to children about online safety much less effective. In addition, pedophiles have been known to groom their online victims while reassuring their victim's parents by providing a false sense of security (Mahoney & Faulkner, 1997). This lulled effect may be derived from an assumption that such a predator would not engage in discourse with other family members. Many caring parents acknowledge the possibility of danger to children in general through unsupervised Internet connections, but deny the possibility that their own children would ever engage in risky behavior online. Thus there is a need for schools to help students to act more safely online.

Although one temptation for those responsible for children's welfare might be to limit their children's Internet access severely, such a response is not viable in the long term. Limiting children's use would take away from them the ability to learn and use an important tool that has become an integral part of everyday life. Second, such a policy would fail to educate children to act more safely in using the Internet when they are not at school or under their parents' supervision.

One popular response to Internet safety has been to rely heavily on Internet filtering software (Anonymous, 2003). Although software can help to reduce the risk, it can significantly limit the information that is available to children. In addition, the protection afforded is of questionable value because those who prey on children attempt to find ways to circumvent the safety features of filtering software just as virus writers attempt to defeat virus protection software. Filters can also be circumvented by children themselves.

The Broader Context of Internet Safety

Internet safety raises a multitude of research questions of which this study is only a small part: What are the effects of such harm on school students? How can schools teach appropriate Internet safety? Can children be protected by online Internet-safety Web sites (of which there is a plethora) that describe basic online safety rules?

There are also risks to schools and to teachers. Who is responsible and liable if a school student is harmed when using the Internet at school? What constitutes such harm? What rights do schools have when restricting access?

Internet safety also raises broader questions for Canadian society: How can new technologies contribute to society without causing irreparable harm to

young people who are the future of that society? How widespread is the social harm? What is the acceptable balance between individual freedom and safety? What are the foreseeable implications for Canadian society of this profound change in technology?

International Context of Online Safety

The following section sets the context both nationally and internationally to frame the actions being taken by Canadian schools.

The Canadian political response to online safety issues has largely been to take a legislative and enforcement approach as part of the Criminal Code of Canada (*Consolidated Statutes and Regulations—Canada*, 1985), the text of which can be found online, along with collaborative (and self-regulated) efforts with Internet service providers and other industry groups. Rarely have schools and universities been explicitly invited to the discussion table.

In the Canadian approach, the Royal Canadian Mounted Police, with local and provincial police forces, team with Internet service providers to find ways of policing the Internet (RCMP, 2003). One such effort can be viewed online at http://www.rcmp.ca/html/safe_wise_Internet_e.htm. This multipronged strategy involves components such as www.cybertip.ca and the Internet Safety Portal <http://www.caip.ca/portal/portal-main.htm>.

There have been many other initiatives outside Canada. In New Zealand, one of the first comprehensive strategies was created by an independent group, the New Zealand Internet Safety Group (NZISG, 2003) whose Web site is http://www.netsafe.org.nz/home/home_default.asp. Arguably, this group is the world's premier, nongovernmental group tackling this problem. Unlike Canadian efforts, this group brought together a coalition of police, judiciary, government, and the business sector in concert with schools and universities to create positive policies for keeping students safe. The group has since produced an Internet Safety Kit for all schools in New Zealand that is available on the Internet (http://www.netsafe.org.nz/kits/kits_default.asp). The kit is directed mainly to responsible adults to teach them how to help children in their care to remain safer. The group has been active in educating the New Zealand public through media interviews, product-based advertising, and speaking engagements to interested groups. Finally, this active group has sponsored two conferences—one international—dealing with Internet safety. The strategy of including schools appears to be succeeding. Hope (2002) reported the results of two surveys and concluded that 82% of New Zealand schools were actively addressing Internet safety. In Britain, Wishart (2004) found that schools were doing a reasonably good job even though they were doing so by restricting children's use of the Internet.

The European Union has also invested extensively in Internet safety through the Safer Internet Action Plan (European Union, 2003, Web site <http://www.saferInternet.org/index.asp>) and one of its component projects, the Online Networked Children's Education (ONCE) Project (<http://europa.eu.int/ISPO/iap/projects/once.html>). ONCE has engaged in educational endeavors such as the creation of Web-based educational materials for children, delivery of Internet safety workshops to teachers and students, archive of online resources about Internet safety, research on the effectiveness of Internet safety programs, support for parental involvement through online discussion groups,

and creation of a database of helpful Web sites that demonstrate the positive aspects of the Internet. Other European Union initiatives include the Irish National Centre for Technology in Education (<http://www.ncte.ie/ICTAdviceSupport/TheInternet/InternetSafety/>) and the Dotsafe project of the European SchoolNet (http://www.eun.org/eun.org2/eun/index_dotsafe.cfm).

In the United States and elsewhere, there is a plethora of Internet-based projects and Web sites with safety tips (see Appendix A). In addition, the US Congress has attempted to enforce safety measures for children such as the controversy- and litigation-plagued Children's Online Privacy Protection Act of 1998 (*Children's Online Privacy Protection Act*, 1998) and the *Children's Internet Protection Act* of 2000 (<http://www.fcc.gov/cgb/consumerfacts/cipa.html>). Work has been done to improve protection of children online (Ianotta, 2001) such as creating a "dot kids" domain using educational portals, incorporating online safety in school curricula, teacher education and teacher professional development, running public awareness campaigns, online training of parents, arranging school spaces, linking school contracts to accountability, writing school policies on Internet safety, and cyber-mentoring among others. However, many institutionalized safety measures have been seen by some to infringe on personal liberty; the debate continues.

Due to differences between the Canadian and other approaches, it was important to learn if the same risky online behavior that has been observed elsewhere was happening in Canadian schools at the same rates. Some people, without the benefit of such research in Canadian schools, have assumed that the problem may be severe elsewhere but not here. Furthermore, although the problem appears to be global, the remedies need to take into account Canadian sociocultural realities. So the first step undertaken in this survey was to describe the existence of the problem in southern Ontario schools as efficiently as possible.

The Survey

I conducted this survey between practicum visits in spring 2002, at which time each preservice teacher had spent two blocks of time totalling some six weeks of full-time classroom observation and teaching practice in one school.

The survey was conducted through an anonymous paper-based survey of all preservice teachers taking a BEd course at a university in southern Ontario. Survey questionnaires were left at the front of the lecture hall at one session of a compulsory course (with which I am not associated), and preservice teachers were free to pick up a form on leaving the lecture hall.

A total of 116 preservice teachers responded to and returned their questionnaires to a secure location in an accessible general office location. If the total cohort of slightly more than 800 preservice teachers had been present in the lecture hall, the return rate would have been approximately 14%.

The survey (see Appendix B) was revised from an unpublished pilot conducted in New Zealand. Questions dealt with the frequency of school students' Internet use at school, time spent online at school, school students' use of the Internet outside school (as hearsay), type and amount of online use at school, supervision (through physical presence) of online use by teachers or adults in the school, closeness of supervision, school activities associated with Internet safety such as talks, contracts for Internet use, and so forth.

The survey design employed a purposeful random sample. Those student teachers who considered Internet safety to be important or had knowledge of, or interest in, the use of the Internet were assumed to be more likely to fill out and return the survey. The questionnaire was short to encourage busy students to take the time to fill out the form. Questions were phrased carefully to make them unambiguous. Questions were also phrased to determine the basis of knowledge on which the respondents were asked to call. Finally, questions were phrased to allow comparative analysis of some variables.

Analysis

The surveys were analyzed using The Statistical Package for the Social Sciences (SPSS for Windows Version 10.0). Descriptive and inferential statistical analyses were performed, including frequency distributions along with Pearson two-tailed tests, chi-squared analyses, and cross tabulations to search for relationships among the variables.

Descriptive Statistics

The statistics showed that the preservice teachers who responded to the survey taught children across the full age range of schooling (ages 6-18 in this provincial jurisdiction) in overwhelmingly coeducational settings. Preservice teachers perceived that most children have access to the Internet in school, although the amount of time spent in schools was mostly less than two hours per week. Most preservice teachers were aware that school students used the Internet outside school and that such use occurred more often in more private places such as homes than more public places such as libraries. Although a home is a private place, the actual level of privacy depends on the placement of the computer in the home. Visibility of the screen area in public areas like kitchens or living rooms makes for a less private experience than when the computer is used behind the locked door of a child's bedroom. In subsequent studies, the placement and visibility of the computer in the home will be analyzed.

The survey respondents believed that the school students they taught used the Internet first for gathering information, then for E-mail and third, for connecting to other people online in real time. Their report of the percentage of school students who used the Internet for chatting and personal messaging (19%) is consistent with results noted above (Environics Research Group, 2001).

Preservice teachers reported wide variation in their perceptions of the levels of close supervision (in which a teacher or other adult closely monitors what students are doing) and loose supervision (in which a teacher or other adult is present in the room but not necessarily watching what school students are doing). However, they believed that there was not much unsupervised use of the Internet in schools; at least half (55%) said that students never had unsupervised access, whether known to regular teachers or not.

Finally, they reported their perceptions that few schools gave students formal talks on Internet safety or made students sign contracts related to safe online behavior, and hardly any schools had a person in the school designated to help students if they felt unsafe or uncomfortable online. However, these results need to be studied further through qualitative interviews with school students themselves.

Tables 1-7 present the descriptive data found in the survey.

Table 1
Age of Students Taught by Preservice Teachers

<i>Age of students</i>	<i>5-6</i>	<i>7-9</i>	<i>10-12</i>	<i>13-15</i>	<i>16+</i>	<i>Missing</i>	<i>Total</i>
<i>N</i>	9	20	45	21	18	3	116

Table 2
Compositon by Sex of Classes Taught by Preservice Teachers

<i>Sex of Students</i>	<i>Female Only</i>	<i>Male Only</i>	<i>Male and Female</i>	<i>Total</i>
<i>N</i>	1	0	115	116

Table 3
Frequency With Which Students Used School Computers and Amount of Time Spent Per Week Online at School

<i>Frequency of School Use</i>	<i>None</i>	<i>Less than once a month</i>	<i>About once a month</i>	<i>Once every 14 days</i>	<i>2-3 times/ week</i>	<i>Most days</i>	<i>Total</i>
	8	13	8	12	30	45	116
<i>Time spent online at school</i>	<i>None</i>	<i>Less than 1 hour</i>	<i>1-2 hours</i>	<i>3-5 hours</i>	<i>6+ hours</i>	<i>Msnsg</i>	<i>Total</i>
<i>N</i>	13	57	32	10	2	2	116

Collation of preservice teachers' responses suggested that there was wide variation in the management of Internet access. The respondents reported their view that few school students used the Internet unsupervised at school. However, the variation in supervision, in combination with the lack of formal school

Table 4
Location of and Primary Use of the Internet by Students

<i>Student Use of the Internet</i>	<i>N/A</i>	<i>No</i>	<i>Yes</i>	<i>Total</i>
Outside school—less public location (home etc.)	3	2	111	116
Outside school—public location (library etc.)	1	58	57	116
For connecting to others	3	91	22	116
For e-mail	3	55	58	116
For gathering information	3	2	111	116

Table 5
Preferred Use of the Internet by Students

<i>Connecting to Others</i>	<i>Students' Preferred Use</i>		<i>Total</i>
	<i>Gathering Information</i>	<i>Missing</i>	
22	85	9	116

Table 6
Level of Supervision of Students' Online Use in School

<i>Level Supervision</i>	<i>Never</i>	<i>Occasionally</i>	<i>Sometimes</i>	<i>Often</i>	<i>All the time</i>	<i>Missing</i>	<i>Total</i>
Close (teacher sees screens)	3	28	30	31	20	4	116
Loose (teacher in room)	6	38	18	34	15	5	116
Allowed unsupervised	55	35	12	9	1	4	116
Unsupervised but unknown to teachers	62	33	8	7	1	5	116

wide safety mechanisms, suggested that individual teachers (with varying degrees of interest in the level of supervision)—and not administrators—were primarily responsible for students' online access and safety.

This is a curriculum issue as well as a safety issue involved in the variation in supervision. Not only could students be engaging in risky behavior, they may also be missing educational time. For example, they may be using time that they have been given for learning assigned topics to read Web sites with little educational value. They may be viewing sites with racial or gender biases. They may be coming into contact with knowledge that is wholly or partly incompatible with generally accepted views. At the least they may be using their time in ways that are off the topic for which they have been given the access.

The data also held other relationships of interest. One such relationship was the overwhelming percentage of students who were reported to use the Internet at home. In fact the number (111 of 115) represented 96.5% of the total. This result was also consistent with data reported earlier (Enviroics Research Group, 2001), once again lending some credibility to the preservice teachers' answers. However, this result could not be used in an inferential analysis because the number of preservice teachers who reported that their students used the Internet only in a public location was so small (4 of 115). It is interesting that the small number of preservice teachers who reported this fact about their students were teaching classes of students less than 10 years old (see Table 10).

When this variable was used in a chi-square analysis against the use of the Internet for e-mail, it appeared superficially as a relationship of importance.

Table 7
Measures Taken by Schools to Keep Their Students Safe Online

<i>School Measures</i>	<i>N/A</i>	<i>No</i>	<i>Yes</i>	<i>Total</i>
Talk on Internet safety at school	7	79	30	116
Contract for acceptable use	8	72	36	116
Person available for Internet safety help	8	91	17	116

More students used the computer at home and also used e-mail than would be expected. However, about half of those who used the Internet at home used it for e-mail and half for information retrieval. The result may simply mean that students tended to conduct more of their e-mail communication at home rather than in public places such as schools and libraries. It may also mean that students viewed e-mail communication as an activity that should be more private.

Correlations

The survey uncovered some interesting correlations. A Pearson two-tailed test was employed to assess the general relationships among all the variables. In general, most variables did not appear to be correlated with each other.

Table 8 demonstrates the correlations found among the variables: age of school students, the frequency of their use of the Internet in school, and the time spent on the Internet.

Given the relatively small sample size, the correlations were statistically significant. The older the student, the more time she or he spent on the Internet and the more frequent access she or he had at school. It can be hypothesized that we should expect these results, yet again supporting a contention that these results are reasonably trustworthy.

Nonparametric Analysis

Chi-square tests were performed on all categorical data. The following variables were found to be of importance: use of e-mail and use for connecting to others in real time; and talk on safety and a person available for help. None of the other variables appeared to be significantly related.

The data analyzed in Table 9A showed that using the computer for e-mail and using it to connect with others in real time, through chat and personal messaging, were significantly related to each other. The strength of the relationship was also significant ($\Phi=.479$). Cross tabulation showed that approximately 31% of the group using e-mail were *not* using the Internet for connecting to others. However, about 20% were engaged in both activities.

Table 10 shows that the older the students, the more likely they were to be able to use the Internet in a more private location such as a home. However, it

Table 8
Correlations Among Age, Frequency of Use, and Time Spent
on the Internet at School

		Age of Students	Frequency	Time
Age of students	Pearson corr.	1.000	.429	.336
	Sig. (2-tailed)	—	.000	.001
	N	104	104	102
Frequency	Pearson corr.	.429	1.000	.597
	Sig. (2-tailed)	.000	—	.000
	N	104	104	102
Time	Pearson corr.	.336	.597	1.000
	Sig. (2-tailed)	.001	.000	—
	N	102	102	102

Table 9A
Chi-Square: Used for E-mail and Used for Connecting to Others in Real Time

	Value	Df	Asymp. Sig (2-sided)
Pearson chi-square	25.906	1	.000
Continuity correction	23.543	1	
Likelihood ratio	34.415	1	.000
N of valid cases	113		

Table 9B
Cross Tabulation: Used for E-mail and Used for Connecting to Others in Real Time

Count	Used for connecting to others		Total	
	<i>n</i>	<i>y</i>		
Used for e-mail	<i>n</i>	55	0	55
	<i>y</i>	36	22	58
Total		91	22	113

also demonstrates that younger students also have access to the Internet at home. Although chi-square analysis could not be used because of low numbers of students who had access only in a public location, there was a strong association (Cramer’s $V=.518$) between the variables *age of students* and *used at home*. The low number of students who had access only in public locations may be a reflection of the affluence of the area rather than increased care of younger students. Preservice teachers reported that those students who used the Internet in both public locations and at home engaged in similar levels of risky behavior in both places.

The final relationship of interest demonstrates the important connection between the presentation of a talk on Internet safety and the availability of a person to help students who are experiencing a problem or discomfort online.

The results depicted in Tables 11A and 11B suggested that some schools may be more committed to Internet safety than others because those that gave their students a talk on safety also had more people available to help. The association between the variables was extremely strong ($\Phi=1.044$). The cross tabulation (Table 11B) showed a count of five questionnaires in which neither of the questions dealing with the variables was answered.

However, there is certainly room for improvement in that fewer than 9% of schools were perceived to have done both: a number that is at the least at odds with Hope’s (2002) report that a much higher proportion of New Zealand schools were doing a good job with Internet safety. Lack of school- or board-wide supervision policies could be problematic for three reasons. First, individual teachers have varying levels of interest in, and understanding of, Internet safety issues. Thus the students of uninterested teachers might be more at risk. Second, lack of coordination between teachers using the Internet as part of their teaching might create situations in which some students might

Table 10
Cross Tabulation: Age of Students and Used at Home

Count	Used at home		Total	
	<i>n</i>	<i>y</i>		
Age of students	5-6	3	5	8
	7-9	1	19	20
	10-12	0	45	45
	13-15	0	21	21
	16+	0	20	20
Total	4	110	114	

fail to receive sufficient instruction in safety issues. Finally, a lack of accountability for student Internet safety when more than one person (or no one) was responsible might have permitted an attitude that Internet safety was the job of a colleague or an administrator.

Limitations

This survey had a number of important limitations that were taken into consideration when analyzing the data. First, the results originated from the perceptions of preservice teachers rather than from the direct report of school students. Due to this second-hand nature of the survey, it was not possible to tease out characteristics of students themselves and their behavior. Although this was a significant handicap to the results, the perception of actors in the situation was important in itself because their perceptions may influence their responses to events for a long time to come.

Second, the variables chosen were not theoretically connected to each other. The basis for choosing them was to examine the widest possible variation in school student behavior online to look for potential connections. Thus when a reliability test using Cronbach's alpha was computed, ambiguous results resulted. The alpha equalled .60. This was considerably below the .75 that is often the minimally acceptable value for most statistical studies. However, it may be that .60 is acceptable in this work because of the small scale of the study. Categorical data reliability reported as the standardized item alpha computed in the same range (.57). The results may mean that the variables in the study were not in the main related to each other. However, it could also mean that the lack of reliability potentially skewed the results.

Third, the low response rate, although possibly explained by circumstances, made for a fairly low number of survey forms for analysis. Hence all statistical measures in the survey were treated with some caution. However, the original purpose for the survey was to outline those areas for fruitful study, and the statistical basis for the claims in this study is limited to general indications only. As such, the results of this survey were used only to point out further avenues for research.

Discussion

Internet safety, like safety in general, is an important topic with which schools and teachers need to deal. Therefore, all results that bear on the topic should be considered by those in positions of responsibility for children in schools. The

Table 11A
Chi Square: Safety Talk and Person Available for Help

	Value	Df	Asymp. Sig. (2-sided)
Pearson chi-square	123.142	4	.000
Likelihood ratio	46.695	4	.000
N of valid cases	113		

Table 11B
Cross Tabulation: Talk on Safety Done and Person Available for Help

Count			Person Available for Help		Total
	N/A	y	n	y	
Talk on safety done	N/A	5			5
	n		71	7	78
	y		20	10	30
Total		5	91	17	113

Internet is both a wonderful *tool* and a dangerous *place* (Markham, 1998). Although this survey was conducted as a second-hand survey, it points out some areas that require further study through direct research with school students.

Perhaps the most obvious result from the data analysis was the apparent lack of relationships among variables. Although the small scale of the study may have had an effect, no relationships were found between school students' use of the Internet in public and at home. There was only a minor relationship between the use of the Internet in a public location and risky behavior such as chatting (chi-square = 8.394, $df = 1$ and $p \leq .004$).

The significant relationships that appeared were both expected and easily explained. Older students had more access and spent more time on the Internet. Students tended to use e-mail at home as much as in school. Those students who used e-mail were much more likely to engage in risky behavior online. E-mail is a form of connecting to others, and it is intuitive that as students used e-mail more, they would also tend to engage in more risky behavior such as chatting and personal messaging when they become aware of them.

However, of more concern was the small percentage of schools that appeared to speak to their students, asked them to sign an acceptable-use type of contract before Internet access, or made a teacher available when students encountered problems or discomfort when using the Internet at school. Those schools that did give their students a talk also appeared to be more likely to take other measures. Thus it can be inferred that some schools took the problem of Internet safety more seriously than others. One might, therefore, suspect that school boards need to develop more stringent policies for schools to ensure that all practical measures to protect students should in fact take place.

A second real concern was the lack of a positive correlation between the age of students and their close supervision when using the Internet. Younger students are more vulnerable to online predators, and elementary schools should ensure that they closely supervise their students.

Conclusion

Preservice teachers' perceptions of online behavior of their school students were remarkably consistent with earlier studies (Bullen & Harre, 2000; Dewey, 2002; Environics Research Group, 2001). Thus despite the limitations of this study, the results obtained here may be an indication that school and school system administrators still need to examine the policies and practices for Internet safety in their schools. Perhaps the Canadian Internet safety strategy that does not explicitly include educational institutions may account for the fact that a smaller percentage of Canadian schools than New Zealand schools have a person responsible for Internet safety.

Some of the tips given by O'Connell (2001) suggested protecting children through the deterrence of openly monitoring, gathering, and reporting the identities of those who chat with students through a school's network along with routine reinforcement in children's minds of Internet safety issues. Other ideas might include the routine erasure of software downloaded or brought to school by students and school network tools in place to protect children online. For these activities, along with Internet safety workshops, every school should appoint, and allow time in the schedule for, a computer-literate teacher to safeguard and educate the children in their care.

These types of measures will only be useful, however, when used in combination with increased close supervision of students as they use the Internet at school. Although some authorities may claim that students need to have independence to learn about the Internet, it is still the duty of schools to provide a safe environment for learning. We do not permit children to play on busy streets during school time. We should no more allow them to use the Internet unsupervised. In both cases, younger students need more guidance and supervision than older students. Like road safety, Internet safety is a complex problem that requires education in addition to legislation and enforcement.

Further work will examine the actual risky experiences of school students on the Internet through semistructured interviews with students themselves. The foci of such research will center on the relationships among teacher supervision, school safety policy, and risky online behavior.

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Appendix A: Part Index of Internet Safety Web Sites: Retrieved December 22, 2004

- Australian Broadcasting Authority
http://www.aba.gov.au/abanews/news_releases/2002/148nr02.htm
- Center for Innovation in Engineering and Science Education
<http://www.k12science.org/internetsafety.html>
- Child CyberSearch
<http://www.childcybersearch.org/>
- CyberAngels (Guardian Angels)
<http://www.cyberangels.org/>
- ECPAT *End Child Prostitution, Child Pornography and Trafficking of Children for Sexual Purposes*
<http://www.ecpat.net/eng/>

Internet Education Foundation project *GetNetWise*

<http://www.getnetwise.org/>

LiveWires Design *Missing: An Educational Kit on Internet safety for Children*

<http://www.Internetsafety.com/>

Microsoft Corporation

<http://www.microsoft.com/info/safeonlinedefault.htm>

New Zealand Internet Safety Group

<http://www.netsafe.org.nz/>

New York Public Library

<http://www.nypl.org/legal/safety.cfm>

Media Awareness Network

<http://www.media-awareness.ca/english/index.cfm>

PageWise.com

http://www.all Sands.com/Internetsafety_si_gn.htm

ProtectKids.com

http://www.usdoj.gov/criminal/ceos/childporn_faqs.html

Safe Online Outreach Society

<http://www.safeonlineoutreach.org/documents.html>

Safeguarding Our Children—United Mothers

<http://www.soc-um.org/>

Surfing the Net with Kids

<http://www.surfnetkids.com/kidsafe.htm>

US Federal Bureau of Investigation

<http://www.fbi.gov/publications/pguide/pguidee.htm>

US Department of Education

<http://www.ed.gov/about/offices/list/os/technology/safety.html>

US Department of Justice

<http://www.cybercrime.gov/rules/kidinternet.htm>

University of Oklahoma

<http://www.ou.edu/oupd/kidsafe/start.htm>

Yahoo!

<http://yahooligans.yahoo.com/docs/safety/>

Appendix B: Survey Questions

1. What age were the students you taught? Circle the choice that best fits the majority of students you taught
 - a. 5-6
 - b. 7-9
 - c. 10-12
 - d. 13-15
 - e. 16+
2. Were your students: Circle one
 - a. Male only
 - b. Female only
 - c. Both male and female
3. *As far as you know or were told*, how often were students able to use the Internet at school? Circle one
 - a. Not able to use the Internet at school
 - b. Were able to use the Internet but less than once a month
 - c. Once a month
 - d. Once a fortnight

- e. Two or three times a week
 - f. Most days
4. *As far as you know or were told*, on average, how much time did students spend on the Internet each week at school? Circle one
 - a. No time
 - b. Some time but less than 1 hour
 - c. 1-2 hours
 - d. 3-5 hours
 - e. 6+ hours
 5. *As far as you were told or heard students say*, did any of the students use the Internet (Circle one or more)
 - a. At their own home
 - b. At another student's home
 - c. At school (without teacher supervision)
 - d. At a public library
 - e. At another place (please write here)
 6. *As far as you were able to observe at your school*, did any of the students use the Internet for (Circle one or more)
 - a. Chat rooms
 - b. Instant messages
 - c. E-mail
 - d. Surfing for new things
 - e. For schoolwork or research
 - f. Some other reason (please write here)
 7. *As far as you were able to observe*, what did students use the Internet most often for. Circle one
 - a. Chat rooms
 - b. Instant messages
 - c. E-mail
 - d. Surfing for new things
 - e. For schoolwork or research
 - f. Some other reason (please write here)
 8. *As far as you were able to observe yourself*, how often does a responsible adult (teacher or teacher aide) closely supervise students when they use the Internet at school by closely observing the screens. Circle one
 - a. Never
 - b. Occasionally
 - c. Sometimes
 - d. Often
 - e. All the time
 9. *As far as you were able to observe yourself*, how often does a responsible adult (teacher or teacher aide) loosely supervise students when they use the Internet at school by glancing at the screens. Circle one
 - a. Never
 - b. Occasionally
 - c. Sometimes
 - d. Often
 - e. All the time
 10. *As far as you were able to observe yourself*, how often does a responsible adult (teacher or teacher aide) allow students to use the Internet at school without their presence: Circle one
 - a. Never
 - b. Occasionally

- c. Sometimes
 - d. Often
 - e. All the time
11. *As far as you were able to observe yourself*, how often do students use the Internet at school without the knowledge of a responsible adult (teacher or teacher aide): Circle one
- a. Never
 - b. Occasionally
 - c. Sometimes
 - d. Often
 - e. All the time
12. *As far as you know or were told*, did any responsible adult (teacher or teacher aide): Circle any that apply
- a. Talk to students about Internet safety
 - b. Ask students to sign an Internet Safety Agreement or Contract
 - c. Tell students that they were available to help students if they became uncomfortable about something or somebody on the Internet.