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REPORT

Berkshire Wireless Learning Initiative

Gender and Grade Differences in Internet Aggression

Development of the eBehavior Scale

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Research on relational aggression has flourished during the past two decades and researchers widely acknowledge that behaviors such as gossiping, exclusion, and rumor spreading constitute aggressive behavior. The explosion of the internet and its wide array of communication tools are likely providing additional means for adolescents to engage in relational aggression than in years past, yet the empirical data to support this contention are scant. Ybarra and Mitchell (2004), using data from the national telephone survey of Finkelhor, Mitchell, and Wolak (2000), clearly identified that adolescents experience harassment on the internet, but their assessment of internet aggression consisted of only two generally worded items which failed to distinguish among different forms of aggression. The purpose of the present study was to develop a longer and more focused instrument to assess relational aggression in the on-line context and to examine grade and gender differences in Internet aggression among early adolescents.

One thousand seven hundred and eleven sixth, seventh, and eighth grade students (856 boys, 855 girls) from five (BWLI) middle schools in Massachusetts participated in the present study. At the end of the school year, students completed an on-line survey for a larger study which included items about their use of computers at home and the eBehavior Scale to measure internet aggression. The eBehavior Scale was modified from the Children's Online Behavior Scale (COBS; Sandstrom, Cart, Morgen, Mulligan, & Perry, 2006) which was found to correlate significantly with teacher reports of student aggression in a sample of middle school students. The eBehavior Scale consists of 10 items assessing both positive and negative social experiences that students could have in chat

rooms and/or on instant messengers (IM). Students were asked “On a typical day, how often do you use chat/instant messenger for the following...” with response options of 0 “never”, 1 “a little”, 2 “sometimes”, 3 “often”, and 4 “a lot”. The scale was reliable with a Cronbach’s alpha of .85.

Principal components factor analysis was used to determine the factor structure of the new instrument. The two factor structure accounted for 62.4% of the total variance. Five prosocial items clearly loaded on the first factor with five relational aggression items loading on the second factor (see Table 1 for factor loadings).

Although the mean responses on the internet relational aggression items were all below 1 (“a little”), 23.3% of students reported at least “sometimes” intentionally blocking someone, 18.4% at least “sometimes” showed a buddy’s message to someone who wasn’t supposed to see it, 16.3% at least “sometimes” made rude or nasty comments, and 13.7% at least “sometimes” said mean or hurtful things about someone to another buddy. These findings suggest that a substantial minority of students are consistently behaving aggressively on-line.

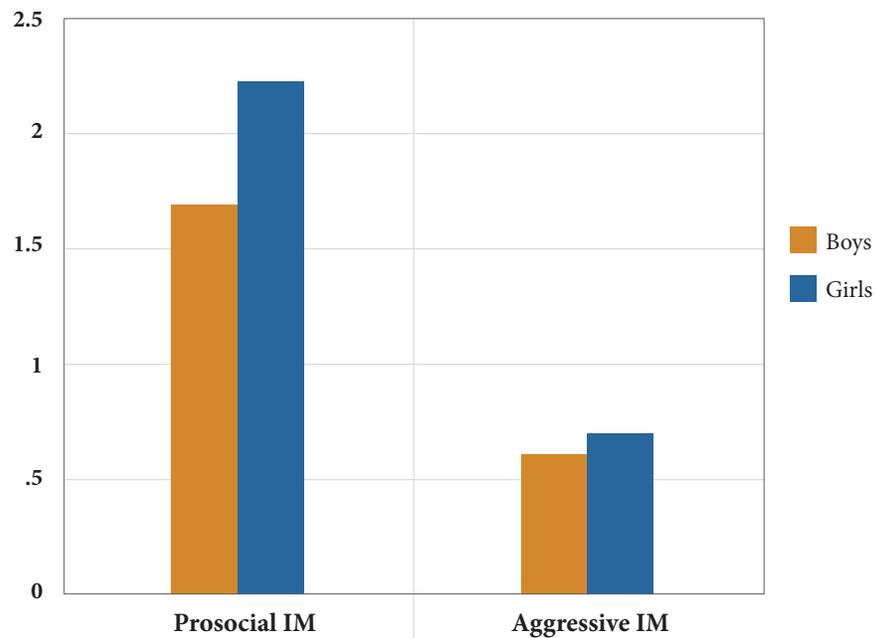
To further evaluate student responses on the eBehavior Scale, a 2 (gender) x 3 (grade) x 2 (IM type) ANOVA with repeated measures on the last factor was calculated. We found a main effect of grade, $F(2, 1705)=19.08$, $p<.001$, partial $\eta^2=.022$. Post-hoc analyses revealed that eighth graders engaged in significantly more instant messaging behavior ($M=1.52$) than seventh graders ($M=1.34$) and sixth graders ($M=1.23$). Main effects of gender and IM type were both qualified by a gender by IM type interaction, $F(1, 1705)=82.69$, $p<.001$, partial $\eta^2=.046$. As illustrated in Figure 1, prosocial use was clearly more frequent than aggressive and girls engaged in more instant messenger use overall, but the difference was more pronounced for prosocial than aggressive use. These findings are consistent with previous research suggesting that boys are using computers for social interactions more than previously thought (Gross, 2004).

Finally, we correlated the two eBehavior subscales with items assessing various aspects of students’ computer use at home. Students were likely to behave more prosocially on-line when there were more computers in their home, $r(1716)=.11$, $p<.001$, with increased feelings of competence on a computer, $r(1709)=.13$, $p<.001$, and when they spent more time on the computer at home, $r(1697)=.26$, $p<.001$. The latter relationship was also found for internet aggression as the more time students spent on the computer at home, the more likely they were to behave aggressively on-line, $r(1694)=.17$, $p<.001$.

While it is encouraging that adolescents self-report significantly more prosocial than aggressive behavior using chat rooms and IM, these results still suggest cause for concern about internet aggression and directions for future research. For example, it is possible that the participants under-reported their aggressive on-line behavior, a point that should be explored in future research by the inclusion of other measures of aggression, such as peer and teacher reports. It is also important to consider the associations between internet aggression and psychosocial adjustment and it is our contention that the eBehavior Scale demonstrates strong psychometric properties to facilitate these future research endeavors.

Table A1: Factor loadings for the eBehavior Scale items

Item	Factor 1	Factor 2
Have a really good conversation	.868	.122
Have fun with my friends	.850	.119
Make social plans	.783	.231
Give and/or receive helpful advice	.738	.170
Give and/or receive help with homework	.619	.131
Say mean or hurtful things about someone to another buddy	.062	.828
Make rude or nasty comments	.113	.817
Show a buddy's message to someone who wasn't supposed to see it	.148	.757
Intentionally block someone because you don't like them	.198	.741
Intentionally block someone because you are mad at them	.301	.671

Figure A1: Gender by IM type interaction for the eBehavior Scale

Endnotes

- 1 This report was originally published as Appendix A of the Berkshire Wireless Learning Initiative Year 2 Evaluation Report.
- 2 This report was accepted for a poster presentation at the annual meeting of the Society for Research on Adolescence March 2008, Chicago, IL.