

Factors that Affect Grade Nine Students in Northern Canada

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Abstract

In response to concerns expressed by high school counselors, the researchers developed a quantitative Likert-scale survey to examine the relationships between academic performance (defined as school attendance and final grades) and recreational video gaming and texting. Questions about video gaming and texting were included with other questions about social relations, extra-curricular activities, and leisure-time activities. The focus for inquiry was three high schools in remote communities within a school division north of the 55th parallel in Manitoba, Canada. Complete data sets were obtained for 21 grade 9 students who volunteered with their parents' written permission. The students answered the survey questions in their respective schools at times selected by the school administrators. Administrative secretaries at each school collected the students' academic performance data: attendance records and final marks in English, mathematics, science, and social studies. The researchers determined Pearson-product moment correlations for the linear school performance data, and Spearman rho correlations for the nonlinear Likert-scale survey data – both with calculations of two-tailed probability of error. In this report, the results are collated into 20 tables that reveal coefficients ranging from good to perfect, based on correlating 165 pairs of variables concerning the following factors separated by gender: video games, texting, school, self-concept, peers, parents, and non-academic activities other than playing video games and texting. In consideration of their findings, the researchers recommend that school professionals advise parents and students of the potentially deleterious effects of playing video games and texting excessively.

Keywords: video games, video games effects, text messaging, cell phones in the classroom, adolescence, teenagers, academic performance, school performance, school grades, school attendance

We initiated the study in response to school counselors' concerns over the effects of non-educational video gaming and texting on students' school performance. They wanted to refer to research findings when they advised parents to monitor their children's video gaming and texting activities. This research follows a similar study conducted in mid-western Canada (see Terry & Malik, 2018, ERIC Resources Information Center No. ED583492).

The research purpose was to examine the correlations between various factors and academic performance in grade 9. The factors included social relations (e.g., friends), extra-curricular activities (e.g., work), and leisure-time activities (e.g., playing video games and texting).

Methodology

Research Participants

Complete sets of data were obtained for 21 of the grade 9 students who were invited from six high schools in a school division in northern Manitoba, Canada (6 boys and 15 girls).

Data Collection

Academic performance data consisted of the students' attendance (number of classes attended) and final marks (percentage grades in English, mathematics, science, and social studies).

Survey data consisted of the students' answers to 40 questionnaire items: demographics, parental support, peer relationships, extra-curricular activities, school activities, self-esteem, self-advocacy, video games, and texting. (See the Appendix).

Data Analysis

We used Pearson product-moment calculations to determine correlations between the school performance scores for attendance (percentage of classes attended) and school marks (average percentage grades). We used Spearman rho calculations to determine correlations that involved the Likert-scale survey answers.

Correlational research requires a minimum of 30 research subjects to produce statistically significant correlations. Separating our 21 grade 9 students by gender further reduced the overall statistical significance of our findings, but was important in order to test the assumption that "boys play video games, but girls text" – as conveyed to us by counselors, other educational professionals, parents, and other adults in the general community.

The following classifications reflect the relative strength of the 165 correlations chosen for this report.

<u>coefficients</u>	<u>strength</u>	<u>predictability</u>
(+ or -) .500 to .599	good	fair
(+ or -) .600 to .699	very good	good
(+ or -) .700 to .799	excellent	very good
(+ or -) .800 to .899	superior	excellent
(+ or -) .900 to .999	almost perfect	superior
(+ or -) 1.00	perfect	absolute

Results

Our results confirm school counselors' concerns over the relationships between non-educational video gaming and texting, and academic performance and other school experiences. Of the other factors, self-concept, peer relationships, parental support, and other non-academic activities produced the most interesting correlations.

The following tables summarize the gender-separated correlations ranging from good to perfect. When correlations overlap between categories, the first category listed contains the correlation that would otherwise be included in the second category. For example, the correlations for "time spent playing video games + negative self-concept" appear in the "video games" category, and are not repeated in the "self-concept" category.

Despite the small numbers of male and female research participants, we obtained correlations with statistically significant two-tailed low probability of error: $p < .01$ or $p < .05$. These low probabilities of error are indicated where relevant.

Males

Table 1 focuses on correlations concerning the number of hours that adolescent boys spend playing video games. Time spent playing video games correlates positively with missing school and fearing rejection by peers. It also correlates negatively with feeling good in school and liking other activities more than school.

Table 1. Time Spent Playing Video Games

The more hours that adolescent boys spend playing video games . . .	correlation strength	coefficient
<i>video games</i>		
. . . the more they think they spend too much time playing video games.	very good	+.657
. . . the more they are told that they spend too much time playing video games.	good	+.500
<i>school</i>		
. . . the more they miss school because of playing video games.	almost perfect	+.920 $p < .01$
. . . the less they feel good in school.	good	-.575
<i>peers</i>		
. . . the more they fear being rejected by their friends.	superior	+.826 $p < .05$
<i>other non-academic activities</i>		
. . . the less they like other activities more than school classes.	superior	-.836 $p < .05$

Table 2 focuses on correlations concerning adolescent boys' positive video game experiences. Wanting a video game club in school correlates positively with earning higher school marks and sending text messages during school classes. It also correlates positively with feeling that other people are happier than they are, falling behind in assignments, and feeling hurt by criticism. It correlates negatively with playing sports.

Feeling good while playing video games correlates positively with earning higher school marks, being busy outside of school, and working during the week. It also correlates positively with feeling that other people are happier than they are and liking other activities more than school. It correlates negatively with having friends who have dropped out of school.

Feeling that playing video games is important correlates negatively with attending school classes, feeling good in school, and sending text messages during school classes. It correlates positively with feeling sleepy in school, falling behind in assignments, and fearing rejection by friends.

Table 2. Positive Video Game Experiences

The more adolescent boys want a video game club in school . . .	correlation strength	coefficient
<i>texting</i> . . . the more text messages they send during school classes.	good	+.566
<i>school</i> . . . the more they fall behind in their assignments. . . . the higher marks they earn.	excellent almost perfect	+.767 +.939 p<.01
<i>self-concept</i> . . . the more they feel that other people are happier. . . . the more they feel hurt when they are criticized.	good superior	+.567 +.894 p<.05
<i>other non-academic activities</i> . . . the less frequently they play sports.	excellent	-.733
The more adolescent boys feel good when they play video games . . .	correlation strength	coefficient
<i>school</i> . . . the higher marks they earn.	good	+.548
<i>self-concept</i> . . . the more they feel that other people are happier.	excellent	+.783
<i>peers</i> . . . the less they have friends who quit school.	very good	-.671
<i>other non-academic activities</i> . . . the busier their lives are outside of school . . . the more they like other activities other than school . . . the more hours they work during the week.	superior excellent very good	+.820 p<.05 +.763 +.657

The more importance that adolescent boys attach to playing video games . . .	correlation strength	coefficient
<i>texting</i> ... the fewer text messages they send during school classes.	good	-.566
<i>school</i> ... the fewer school classes they attend.	good	-.546
... the less they feel good in school.	very good	-.635
... the more they feel sleepy in school.	excellent	+.750
... the more they fall behind in their assignments.	good	+.581
<i>peers</i> ... the more they fear being rejected by their friends.	good	+.508

Table 3 focuses on correlations concerning adolescent boys' negative video game experiences. Thinking that they play video games too much correlates negatively with sending text messages during school classes, attending school classes, feeling good in school, liking their teachers, having teachers say that they have a good attitude toward school, and working during the week. It correlates positively with feeling that they "mess up" everything, having friends who have dropped out of school, and fearing rejection by friends. It also correlates positively with having parents who encourage them to do well in school.

Missing school because of playing video games correlates negatively with attending school classes and feeling good in school. It correlates positively with fearing rejection by friends.

Lying about how much time they spend playing video games correlates negatively with sending text messages during school classes, earning higher marks, and playing sports. It also correlates negatively with liking other activities more than school. It correlates positively with falling behind in assignments and feeling hurt by criticism.

Being told that they play video games too much correlates negatively with earning higher marks and playing sports. It correlates positively with falling behind in assignments and feeling hurt by criticism.

Table 3. Negative Video Game Experiences

The more adolescent boys think they spend too much time playing video games . . .	correlation strength	coefficient
<i>texting</i> ... the fewer text messages they send during school classes.	good	-.566
<i>school</i> ... the fewer school classes they attend.	excellent	-.751
... the less they feel good in school.	superior	-.853 p<.05
... the less they like their teachers.	very good	-.652
... the less teachers say they have a good attitude in school.	good	-.567

<i>self-concept</i> ... the more they feel that they “mess up” everything.	good	+.567
<i>peers</i> ... the more they have friends who quit school.	good	+.559
... the more they fear being rejected by their friends.	excellent	+.754
<i>parents</i> ... the more their parents encourage them to do well in school.	excellent	+.710
<i>other non-academic activities</i> ... the fewer hours they work during the week.	very good	-.602

Table 4 focuses on correlations concerning the time that adolescent boys spend texting. The number of hours spent texting correlates positively with liking their teachers, having teachers say that they have a good attitude toward school, being easy to get along with, having parents who encourage them to do well in school, and having a busy life outside of school. It also correlates positively with feeling that other people are happier than they are, feeling that they “mess up” everything, and liking other activities more than school. It correlates negatively with feeling sleepy in school.

The number of text messages sent during school classes correlates positively with earning higher marks, feeling good in school, being easy to get along with, and working during the week. It correlates negatively with feeling sleepy in school, falling behind in their assignments, feeling hurt when criticized, and having friends who have dropped out of school. It also correlates negatively with playing sports.

Table 4. Time Spent Texting

The more hours that adolescent boys spend sending text messages . . .	correlation strength	coefficient
<i>school</i> ... the more they like their teachers.	good	+.539
... the more teachers say they have a good attitude in school.	good	+.566
... the less they feel sleepy in school.	good	-.548
<i>self-concept</i> ... the more they feel that other people are happier.	excellent	+.707
... the more they feel that they “mess up” everything.	good	+.566
<i>peers</i> ... the more they feel that they are easy to get along with.	very good	+.696
<i>parents</i> ... the more their parents encourage them to do well in school.	good	+.548
<i>other non-academic activities</i> ... the busier their lives are outside of school.	very good	+.696
... the more they like other activities more than school classes.	very good	+.674

The more text messages that adolescent boys send during school classes . . .	correlation strength	coefficient
<i>texting</i> . . . the more they enjoy texting with their friends.	good	+.539
<i>school</i> . . . the higher marks they earn.	very good	+.664
. . . the more they feel good in school.	very good	+.696
. . . the less they feel sleepy in school.	good	-.548
. . . the less they fall behind in their assignments	excellent	-.707
<i>self-concept</i> . . . the less they feel hurt when they are criticized.	very good	-.632
<i>peers</i> . . . the more they feel that they are easy to get along with.	very good	+.696
. . . the less they have friends who quit school.	very good	-.632
<i>other non-academic activities</i> . . . the less frequently they play sports.	good	-.566
. . . the more hours they work during the week.	excellent	+.775
The more adolescent boys miss school because of playing video games . . .	correlation strength	coefficient
<i>school</i> . . . the fewer school classes they attend.	good	-.514
. . . the less they feel good in school.	excellent	-.718
<i>peers</i> . . . the more they fear being rejected by their friends.	superior	+.898 p<.05
The more adolescent boys lie about how much time they spend playing video games . . .	correlation strength	coefficient
<i>texting</i> . . . the fewer text messages they send during school classes.	very good	-.632
<i>school</i> . . . the lower marks they earn.	superior	-.840 p<.05
. . . the more they fall behind in their assignments.	very good	+.671
<i>self-concept</i> . . . the more they feel hurt when they are criticized.	perfect	+1.00 p<.01
<i>other non-academic activities</i> . . . the less they like other activities other than school	superior	-.836 p<.05
. . . the less frequently they play sports	superior	-.894 p<.05

The more adolescent boys are told that they spend too much time playing video games . . .	correlation strength	coefficient
<i>school</i> . . . the lower marks they earn. . . . the more they fall behind in their assignments.	excellent good	-.789 +.584
<i>self-concept</i> . . . the more they feel hurt when they are criticized.	almost perfect	+.980 p<.01
<i>other non-academic activities</i> . . . the less frequently they play sports.	superior	-.876 p<.05

Table 5 focuses on correlations concerning adolescent boys' positive texting experiences. Feeling that texting is important correlates positively with feeling that other people are happier than they are and liking other activities more than school. It also correlates positively with having a busy life outside of school, and working during the week. It correlates negatively with having friends who have dropped out of school.

Enjoying texting with their friends correlates positively with feeling that other people are happier than they are and liking other activities outside of school. It also correlates positively with being easy to get along with.

Table 5. Positive Texting Experiences

The more importance that adolescent boys attach to texting . . .	correlation strength	coefficient
<i>self-concept</i> . . . the more they feel that other people are happier.	excellent	+.738
<i>peers</i> . . . the less they have friends who quit school.	excellent	-.707
<i>other non-academic activities</i> . . . the busier their lives are outside of school. . . . the more they like other activities more than school. . . . the more hours they work during the week.	excellent almost perfect very good	+.726 +.905 p<.05 +.693
The more adolescent boys enjoy texting with their friends . . .	correlation strength	coefficient
<i>self-concept</i> . . . the more they feel that other people are happier.	good	+.509
<i>peers</i> . . . the more they feel they are easy to get along with.	superior	+.813 p<.05
<i>other non-academic activities</i> . . . the more they like other activities more than school.	good	+.500

Table 6 focuses on correlations concerning adolescent boys' negative texting experiences. Thinking they spend too much time texting correlates negatively with liking their teachers, having teachers say that they have a good attitude toward school, and being easy to get along with. It correlates positively with feeling sleepy in school and feeling that they "mess up" everything. It also correlates positively with having parents who encourage them to do well in school.

Missing school due to texting correlates positively with feeling sleepy in school. It correlates negatively with liking other activities more than school. It also correlates negatively with feeling hurt when criticized and playing sports.

Lying about how much time they spend texting correlates negatively with attending school classes, feeling good in school, liking their teachers, and having teachers say that they have a good attitude toward school. It correlates positively with falling behind in assignments, feeling that other people are happier than they are, feeling that they "mess up" everything, fearing being rejected by friends, and liking other activities more than school. It also correlates positively with having parents who encourage them to do well in school.

Being told that they spend too much time texting correlates negatively with attending school classes and feeling good in school. It correlates positively with falling behind in assignments.

Table 6. Negative Texting Experiences

The more adolescent boys think they spend too much time texting . . .	correlation strength	coefficient
<i>school</i>		
. . . the less they like their teachers.	very good	-.606
. . . the less teachers say they have a good attitude in school.	very good	-.652
. . . the more they feel sleepy in school.	very good	+.677
<i>self-concept</i>		
. . . the more they feel that they "mess up" everything.	very good	+.652
<i>peers</i>		
. . . the less they feel they are easy to get along with.	good	-.594
<i>parents</i>		
. . . the more their parents encourage them to do well in school.	good	+.554
The more adolescent boys miss school due to texting . . .	correlation strength	coefficient
<i>school</i>		
. . . the more they feel sleepy in school.	good	+.548
<i>self-concept</i>		
. . . the less they feel hurt when they are criticized.	very good	-.632
<i>other non-academic activities</i>		
. . . the less they like other activities more than school.	good	-.539
. . . the less frequently they play sports.	good	-.566

The more adolescent boys lie about how much time they spend texting . . .	correlation strength	coefficient
<i>peers</i> . . . the more they fear being rejected by their friends.	very good	+.696
<i>self-concept</i> . . . the more they feel that other people are happier.	good	.566
<i>parents</i> . . . the more their parents encourage them to do well in school.	good	+.548
<i>other non-academic activities</i> . . . the less they like other activities more than school.	good	-.539
The more adolescent boys are told that they spend too much time texting . . .	correlation strength	coefficient
<i>school</i> . . . the fewer school classes they attend.	very good	-.669
. . . the less they feel good in school.	good	-.575
. . . the more they fall behind in their assignments.	superior	+.876

Table 7 focuses on correlations concerning adolescent boys' school experiences. Feeling good in school correlates positively with attending school classes. Falling behind in their assignments correlates negatively with attending school classes and earning higher marks.

Table 7. School Experiences

The better adolescent boys feel when they are in a classroom. . .	correlation strength	coefficient
<i>school</i> . . . the more school classes they attend.	superior	+.893 p <.01
The more adolescent boys fall behind in their assignments. . .	correlation strength	coefficient
<i>school</i> . . . the fewer school classes they attend.	excellent	-.736
. . . the lower marks they earn.	very good	-.626

Table 8 focuses on correlations concerning adolescent boys' negative self-concept. Feeling that other people are happier correlates positively with earning higher marks. Feeling hurt when criticized also correlates positively with earning higher marks.

Table 8. Negative Self-Concept

The more adolescent boys feel that other people are happier than they are . . .	correlation strength	coefficient
<i>school</i> . . . the higher marks they earn.	very good	+.611
The more adolescent boys feel hurt when they are criticized . . .	correlation strength	coefficient
<i>school</i> . . . the higher marks they earn.	superior	+.840 p<.05

Table 9 focuses on correlations concerning adolescent boys' negative peer relationships. Having friends who have dropped out of school correlates negatively with liking their teachers and having teachers say that they have a good attitude toward school. It correlates positively with feeling that they "mess up" everything.

Fearing rejection by friends correlates positively with attending school classes, feeling good in school, liking their teachers, and having parents who encourage them to do well in school.

Table 9. Negative Peer Relationships

The more adolescent boys have friends who quit school . . .	correlation strength	coefficient
<i>school</i> . . . the less they like their teachers.	good	-.533
. . . the less teachers say they have a good attitude in school.	very good	-.671
<i>self-concept</i> . . . the more they feel that they "mess up" everything.	very good	+.671
The more adolescent boys fear being rejected by their friends . . .	correlation strength	coefficient
<i>school</i> . . . the more school classes they attend.	excellent	+.708
. . . the more they feel good in school.	excellent	+.742
. . . the more they like their teachers.	good	+.563
<i>parents</i> . . . the more their parents encourage them to do well in school.	very good	+.635

Table 10 focuses on correlations concerning adolescent boys being supported by their parents. Parental encouragement to do well in school correlates positively with attending school classes, feeling good in school, liking their teachers, and having teachers say that they have a good attitude toward school. It also correlates positively with feeling that they “mess up” everything. It correlates negatively with feeling sleepy in school.

Table 10. Parental Support

The more adolescent boys’ parents encourage them to do well in school . . .	correlation strength	coefficient
<i>school</i>		
. . . the more school classes they attend.	very good	+.606
. . . the more they feel good in school.	good	+.508
. . . the more they like their teachers.	almost perfect	+.985 p<.01
. . . the more teachers say they have a good attitude in school.	almost perfect	+.904 p<.05
. . . the less they feel sleepy in school	good	-.500
<i>self-concept</i>		
. . . the more they feel that they “mess up” everything.	almost perfect	+.904 p<.05

Table 11 focuses on the correlations concerning adolescent boys’ non-academic activities other than playing video games and texting. Having busy lives outside of school correlates positively with attending school classes, liking their teachers, and having parents who encourage them to do well in school. It correlates negatively with feeling sleepy in school and feeling that other people are happier than they are.

Liking other activities more than school correlates positively with feeling sleepy in school. It correlates negatively with feeling that other people are happier than they are and fearing rejection by friends.

Playing sports correlates positively with earning higher mark and having teachers say that they have a good attitude toward school. It also correlates positively with having friends who have dropped out of school. It correlates negatively with feeling that they “mess up” everything and feeling hurt when criticized.

Working during the week correlates negatively with feeling good in good and having teachers say that they have a good attitude toward school. It also correlates negatively with feeling that they “mess up” everything. It correlates positively with having friends who have dropped out of school. It also correlates positively with being easy to get along with.

Table 11. Non-Academic Activities Other Than Playing Video Games and Texting

The busier adolescent boys' lives are outside of school . . .	correlation strength	coefficient
<i>school</i> . . . the more school classes they attend. . . . the more they like their teachers. . . . the more they feel sleepy in school.	very good good good	+.647 +.532 +.508
<i>self-concept</i> . . . the less they feel that other people are happier.	very good	-.656
<i>parents</i> . . . the more their parents encourage them to do well in school.	very good	+.635
The more adolescent boys like other activities more than school classes. . .	correlation strength	coefficient
<i>school</i> . . . the more they feel sleepy in school.	good	+.554
<i>self-concept</i> . . . the less they feel that other people are happier.	excellent	-.715
<i>peers</i> . . . the less they fear being rejected by their friends.	good	-.563
The more frequently adolescent boys play sports. . .	correlation strength	coefficient
<i>school</i> . . . the higher marks they earn. . . . the more teachers say they have a good attitude in school.	excellent good	+.751 +.567
<i>self-concept</i> . . . the less they feel that they "mess up" everything. . . . the less they feel hurt when they are criticized.	good superior	-.567 -.894 p<.05
<i>peers</i> . . . the more they have friends who quit school.	good	+.559
The more hours that adolescent boys work during the week . . .	correlation strength	coefficient
<i>school</i> . . . the less they feel good in school. . . . the less teachers say they have a good attitude in school.	good good	-.539 -.584
<i>self-concept</i> . . . the less they feel that they "mess up" everything.	good	-.584
<i>peers</i> . . . the more they feel that they are easy to get along with . . . the more they have friends who quit school.	good almost perfect	+.539 +.980 p<.01

Females

Table 12 focuses on correlations concerning the number of hours that adolescent girls spend playing video games. Time spent playing video games correlates positively with feeling good while playing video games and feeling that playing video games is important.

Table 12. Time Spent Playing Video Games

The more hours that adolescent girls spend playing video games . . .	correlation strength	coefficient
<i>video games</i>		
. . . the more they feel good when they play video games.	good	+.534 p<.05
. . . the more importance they attach to playing video games.	good	+.527 p<.05

Table 13 focuses on correlations concerning adolescent girls' positive video game experiences. Wanting a video game club in school correlates negatively with having teachers say that they have a good attitude toward school and playing sports.

Table 13. Positive Video Game Experiences

The more adolescent girls want a video game club in school . . .	correlation strength	coefficient
<i>school</i>		
. . . the less teachers say they have a good attitude in school.	good	-.529 p<.05
<i>other non-academic activities</i>		
. . . the less frequently they play sports.	good	-.512

Table 14 focuses on correlations concerning adolescent girls' negative video game experiences. Thinking that they play video games too much correlates negatively with earning higher marks. It also correlates negatively with feeling hurt when criticized. It correlates positively with feeling that other people are happier than they are and liking other activities more than school.

Missing school because of playing video games correlates negatively with attending school classes. It correlates positively with feeling that other people are happier than they are.

Lying about how much time they play video games correlates negatively with earning higher marks. It correlates positively with feeling hurt when criticized.

Being told that they play video games too much correlates negatively with earning higher marks. It correlates positively with feeling hurt when criticized.

Table 14. Negative Video Game Experiences

The more adolescent girls think they spend too much time playing video games . . .	correlation strength	coefficient
<i>school</i> . . . the lower marks they earn.	very good	-.661 p<.01
<i>self-concept</i> . . . the more they feel that other people are happier. . . . the less they feel hurt when they are criticized.	good good	+.504 -.517 p<.05
<i>other non-academic activities</i> . . . the more they like other activities more than school.	good	+.550 p<.05
The more adolescent girls miss school because of playing video games . . .	correlation strength	coefficient
<i>school</i> . . . the fewer school classes they attend.	excellent	-.719 p<.01
<i>self-concept</i> . . . the more they feel that other people are happier.	superior	+.824 p<.01
The more adolescent girls lie about how much time they spend playing video games . . .	correlation strength	coefficient
<i>school</i> . . . the lower marks they earn.	superior	-.884 p<.01
<i>self-concept</i> . . . the more they feel hurt when they are criticized.	almost perfect	+.955 p<.01
The more adolescent girls are told that they spend too much time playing video games . . .	correlation strength	coefficient
<i>school</i> . . . the lower marks they earn.	superior	-.884 p<.01
<i>self-concept</i> . . . the more they feel hurt when they are criticized.	almost perfect	+.955 p<.01

Table 15 focuses on correlations concerning the time that adolescent girls spend texting. The number of hours spent texting correlates positively with enjoying texting with their friends and liking their teachers.

Table 15. Time Spent Texting

The more hours that adolescent girls spend sending text messages . . .	correlation strength	coefficient
<i>texting</i> . . . the more they enjoy texting with their friends.	good	+.515 p<.05
<i>school</i> . . . the more they like their teachers.	good	+.503

Table 16 focuses on correlations concerning adolescent girls' positive texting experiences. Enjoying texting with their friends correlates positively with being easy to get along with.

Table 16. Positive Texting Experiences

The more adolescent girls enjoy texting with their friends . . .	correlation strength	coefficient
<i>peers</i> . . . the more they feel that they are easy to get along with.	very good	+.604 p<.05

Table 17 focuses on correlations concerning adolescent girls' negative texting experiences. Thinking that they spend too much time texting correlates negatively with being easy to get along with. Missing school due to texting correlates negatively with liking other activities more than school. Lying about how much time they spend texting correlates positively with feeling sleepy in school.

Table 17. Negative Texting Experiences

The more adolescent girls think they spend too much time texting . . .	correlation strength	coefficient
<i>peers</i> . . . the less they feel that they are easy to get along with.	good	-.572 p<.05
The more adolescent girls miss school due to texting . . .	correlation strength	coefficient
<i>other non-academic activities</i> . . . the less they like other activities more than school.	good	-.522 p<.05
The more adolescent girls lie about how much time they spend texting . . .	correlation strength	coefficient
<i>school</i> . . . the more they feel sleepy in school.	good	+.524 p<.05

Table 18 focuses on correlations concerning adolescent girls' negative self-concept. Feeling that other people are happier correlates negatively with attending school classes. Feeling hurt when criticized correlates negatively with earning higher marks.

Table 18. Negative Self-Concept

The more adolescent girls feel that other people are happier than they are . . .	correlation strength	coefficient
<i>school</i> . . . the fewer school classes they attend.	superior	-.835 $p < .01$
The more adolescent girls feel hurt when they are criticized . . .	correlation strength	coefficient
<i>school</i> . . . the lower marks they earn.	superior	-.885 $p < .01$

Table 19 focuses on correlations concerning adolescent girls' positive peer relationships. Being easy to get along with correlates positively with feeling good in school.

Table 19. Positive Peer Relationships

The more adolescent girls think they are easy to get along with . . .	correlation strength	coefficient
<i>school</i> . . . the more they feel good in school.	very good	+.699 $p < .01$

Table 20 focuses on correlations concerning non-academic activities other than playing video games and texting. Liking other activities more than school correlates negatively with earning higher marks.

Table 20. Non-Academic Activities Other Than Playing Video Games and Texting

The more adolescent girls like other activities more than school classes . . .	correlation strength	coefficient
<i>school</i> . . . the lower marks they earn.	good	-.574 $p < .05$

Discussion

Overall, we obtained the following results concerning adolescent boys' and girls' video game and texting experiences.

Males

The more grade 9 boys play video games, whether the experiences are positive or negative –

- the less likely they are to have positive school experiences such as earning higher marks and feeling good in school classes
- the more likely they are to have negative school experiences such as feeling sleepy in class and falling behind in their assignments.
- the more likely they are to have negative self-concept attributes such as feeling that other people are happier than they are, feeling that they “mess up” everything, and feeling really hurt when they are criticized.
- the more likely they are to have negative peer relationship attributes such as fearing rejection by their friends.
- the less likely they are to engage in other non-academic activities such as playing sports and working during the week.

The more grade 9 boys send text messages and have positive texting experiences –

- the more likely they are to have positive school experiences such as earning higher marks and feeling good in school classes.
- the less likely they are to have negative school experiences such as feeling sleepy in class and falling behind in their assignments.

The more grade 9 boys think, or are told, that they text too much –

- the less likely they are to attend school classes and to have positive school experiences such as feeling good in school, liking their teachers, and having teachers say that they have a good attitude toward school.
- the more likely they are to have negative school experiences such as feeling sleepy in class and falling behind in their assignments.

Females

The more grade 9 girls think they play video games too much or miss school because of playing video games –

- the less likely they are to attend school classes and have positive school experiences such as earning higher marks.
- the more likely they are to have negative self-concept attributes such as feeling that other people are happier than they are.

The more grade 9 girls lie about how much time they play video games or are told that they play too much –

- the less likely they are to earn higher school marks
- the more likely they are to have negative self-concept attributes such as feeling really hurt when they are criticized.

The more grade 9 girls send text messages and have positive texting experiences –

- the more likely they are to have positive school experiences such as liking their teachers.
- the more likely they are to have positive peer relationship attributes such as being easy to get along with.

The more grade 9 girls think they text too much –

- the less likely they are to have positive peer relationship attributes such as being easy to get along with.

The more grade 9 girls lie about how much time they spend texting –

- the more likely they are to have negative school experiences such as feeling sleepy in class.

Closing Comment

Our findings are remarkable in that such a small research sample yielded notable correlations, many of which are statistically significant. Replicating the study in other similar communities would ascertain whether our results are generalizable to other grade 9 students in this geographic and sociocultural region of Canada.

APPENDIX

FACTORS THAT AFFECT ACADEMIC PERFORMANCE IN GRADE NINE

*Unless otherwise indicated, 1 means that you strongly disagree.
 2 means that you disagree.
 3 means that you agree.
 4 means that you strongly agree.*

Section One

I am: 1 - male 2 - female	1 2
My parents encourage me to do well in school.	1 2 3 4
I live at home with my parent(s) or guardian(s): 1 - no 2 - yes	1 2 <input type="checkbox"/>
How old are you?	
What language(s) do you speak at home?	
How long have you lived in Canada? 1 - less than 5 years 2 - more than 5 years 3 - all my life	1 2 3

Section Two

I think that I am easy to get along with.	1 2 3 4
Several of my friends quit school.	1 2 3 4

Section Three

There should be a video game club in school.	1 2 3 4
I have a busy life outside of school.	1 2 3 4
I like other activities more than school classes.	1 2 3 4
I play sports frequently.	1 2 3 4
I play video games every day: 1 - no 2 - 1 or 2 hrs 3 - 3 or 4 hrs 4 - 5 or 6 hrs	1 2 3 4
I text with my friends every day: 1 - no 2 - 1 or 2 hrs 3 - 3 or 4 hrs 4 - 5 or 6 hrs	1 2 3 4
I work during the week: 1 - no 2 - 4 hrs 3 - 8 hrs 4 - 16 hrs <input type="checkbox"/>	1 2 3 4

Section Four

I feel good being in a classroom.	1 2 3 4
I like most my teachers.	1 2 3 4
I feel sleepy during classes.	1 2 3 4

I do not keep up with my assignments.	1 2 3 4
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Teachers say I have a good attitude.	1 2 3 4
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I text with my friends during classes: 1 - no 2 - 1-5 texts a day 3 - 6-10 texts a day 4 - more than 10 texts a day	1 2 3 4
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Section Five

Playing video games makes me feel good.	1 2 3 4
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Texting is important in my life.	1 2 3 4
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The music I like best is: 1 - hip hop 2 - metal 3 - pop 4 - country	1 2 3 4
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I enjoy texting with my friends.	1 2 3 4
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Video games are important in my life.	1 2 3 4
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Section Six

I am inspired by: 1 - Adam Beach 3 - Jordin Tootoo 2 - Miley Cyrus 4 - Justin Trudeau	1 2 3 4
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Most people around me seem happier than me.	1 2 3 4
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I mess up everything I do.	1 2 3 4
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I am afraid of being rejected by my friends.	1 2 3 4
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I feel really hurt when I am criticized.	1 2 3 4
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I want to be: 1 - I 'm not sure 3 - a hockey player 2 - a plumber 4 - a singer or musician	1 2 3 4
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Section Seven

I think I play video games too much.	1 2 3 4
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I have missed school because I played video games.	1 2 3 4
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I lie about how much I play video games.	1 2 3 4
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I have been told that I play video games too much.	1 2 3 4
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Section Eight

I think I spend too much time texting.	1 2 3 4
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I have missed school due to texting.	1 2 3 4
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I lie about how much time I spend texting.	1 2 3 4
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I have been told that I spend too much time texting.	1 2 3 4
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