

An Evaluation of the PAX Game in Manitoba Grade One Classrooms



A summary of the report *The PAX Program in Manitoba: A Population-Based Analysis of Children's Outcomes* by Marni Brownell, Mariette Chartier, Wendy Au, Jennifer Schultz, Dale Stevenson, Teresa Mayer, Vicki Young, Tamara Thomson, Dave Towns, Say Hong, Scott McCulloch, Susan Burchill, Jessica Jarmasz

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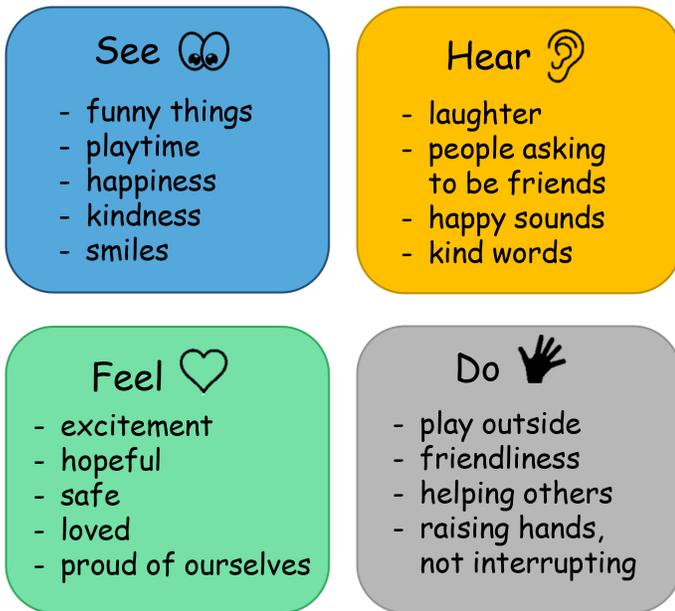
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The PAX Good Behavior Game

Have you ever written someone a Tootle™ Note about the SPLEEMS™ you just don't want to see anymore? If that sounds like nonsense to you, then maybe you've never played the PAX Good Behavior Game® before. The PAX Good Behavior Game is a tool used in classrooms to teach children self-control and to promote mental health. The use of the game is based on studies that show PAX really works to help students work together with their peers and focus on learning.

Figure 1. A PAX Visual Map



The word 'pax' means 'peace' in Latin, and the PAX game teaches children to strive for **peaceful, productive, healthy** and **happy** classrooms.

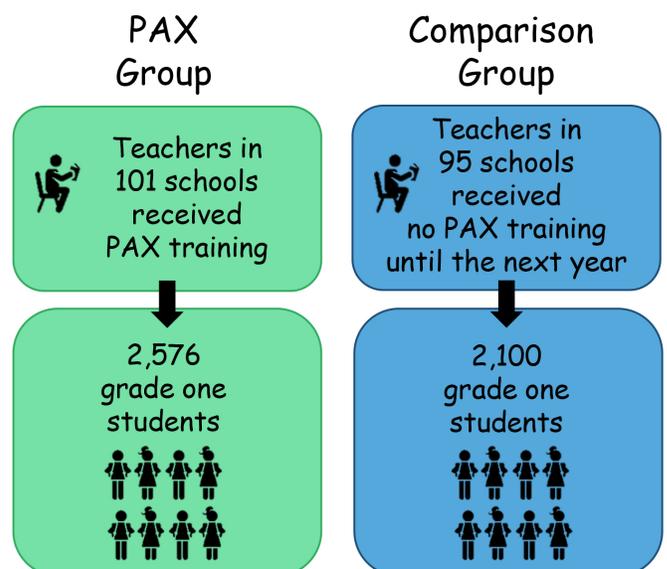
PAX works by having the class first make a word-map of what they would like to see, hear, feel and do more in a PAX classroom (for an example, see Figure 1). These events are called 'PAX'. Things they want to happen less are called SPLEEMS. The class soon learns to predict the PAX and SPLEEMS for themselves in new activities. When a team 'wins' a PAX game, they earn a fun activity like a 10-second giggle fest or a 30-second dancing jig.

While some of the day-to-day activities in PAX may seem a little silly, the game has a big impact in the long term. Past studies have shown that students in grade one PAX classrooms do better in school and are more likely to graduate than students not in PAX classrooms. As they grow into adults, PAX students also have better mental health and are less likely to smoke, drink, use drugs or be involved in crimes.

PAX in Manitoba Schools

In 2011, the province of Manitoba launched a pilot study of PAX in grade one classrooms. Schools that wanted to join the study were randomly assigned to either the PAX group or the 'Comparison' group (Figure 2). The teachers in the Comparison group were offered PAX training in the next school year, so that all schools that were interested could eventually have PAX in their classrooms. But for the 2011 school year, there were some schools with PAX and some without. The province then asked the Manitoba Centre for Health Policy (MCHP) to look at whether PAX had positive effects on students in Manitoba.

Figure 2. PAX Pilot Study in Manitoba



What We Measured

At MCHP, we have a large collection of health, social and education data from practically every person living in Manitoba. All personal information, like names and addresses, is removed from the data before they arrive at MCHP, but the data can be linked across datasets for each person. In this way, we can follow Manitobans' school performance and their contacts with the healthcare system or with social services without ever knowing 'who' they are. For the PAX pilot study, we used this data to compare the students in the PAX group to the students in the Comparison group.

We compared the students' scores on the Strengths and Difficulties Questionnaire (SDQ). The SDQ measures five kinds of behaviours. Grade one teachers in the study filled out this survey at the beginning and end of the school year for each student. We also looked at how the students did in school. We compared their grade three reading and math scores, and looked at how many repeated a grade. We looked at how many students had a hospital stay for an injury or a mental disorder (like ADHD). And we also looked at their family life, including whether their families were involved with Child and Family Services.

What We Found

Usually, assigning schools to two different study groups **randomly**, as was done for this study, evens out their different traits, and results in two roughly similar groups at the start of the study. But even though the schools in our study were randomly assigned to be in either the PAX group or the Comparison group, the two groups were a little different at the start of school year.

The PAX group had more risk factors for poor health and school performance than the Comparison group. Even though we did our best to adjust for these differences in our analyses, there could still be factors we didn't account for. This was something we needed to keep in mind as we looked at how PAX affected the students.

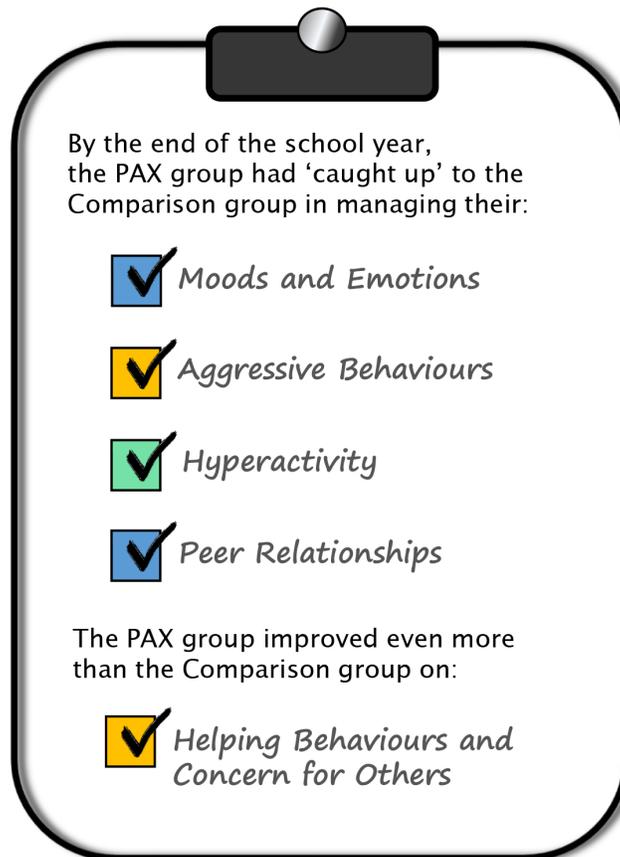
At the start of the school year (before the PAX game started), the PAX group had more negative behaviours

than the Comparison group. But at the end of the school year, students who had played the PAX game had SDQ scores similar or better than students in the Comparison group (Figure 3). In other words, PAX helped them 'catch up' to the Comparison group in good behaviours. For example, while the Comparison group's SDQ scores didn't change much during the school year, the group who played the PAX game had fewer mood problems, were less hyperactive, and related better to their peers by the end of the school year. PAX students' SDQ scores for helping behaviours and concern for others were even better than the Comparison group's scores at the end of the year. These findings suggest that even though students in the PAX group struggled more than the Comparison group did at first,

the PAX game put them 'on par' with – and, in the case of helping behaviours, put them ahead of – students in the Comparison group.

However, none of the other outcomes we looked at, including school, family and health outcomes, were different between the PAX and Comparison groups at the end of the study.

Figure 3. Results of the Strengths and Difficulties Questionnaire



What These Findings Mean

Given the differences in risk factors between the PAX group and the Comparison group at the start of the school year, it's no surprise that the PAX group's SDQ scores were poorer to start. Our findings suggest that the PAX game helped the PAX group 'catch up' to the Comparison group in good behaviours by the end of the school year. And even though we saw no difference in any of the other school, family or mental health outcomes we looked at, PAX might have had a protective effect on students who were more at-risk to start.

A few other factors might have made it hard for us to see the impact of PAX. The initial plan was for PAX to be used in classrooms for the whole school year, but some teachers did not get PAX training until February or March. This means some classrooms started using PAX sooner than other classrooms. It also means some students got very little practice using PAX. These factors could water down the overall effect of the PAX game, and might be why we didn't see any changes in PAX students' grade three school work, family or health outcomes. Finally, there's a good chance we would see more changes in outcomes if we followed this group of students all the way through high school. Right now we only have a few years of follow-up data after PAX (from 2012 to 2015). Once the students in the PAX and Comparison groups reach their teens, we will be able to measure differences in key outcomes like high school graduation, drug use, and mental health.

Still, the findings from the Strengths and Difficulties Questionnaire suggest that PAX teaches children to better control how they act. That's a result you can take to the Tootle bank! The PAX game's effect on helping students do better in school and in improving their mental health is less clear. A study looking at long-term mental health and school outcomes might answer those questions, and offer Manitoba teachers key information about what helps students with mental health and school success.

The Manitoba Centre for Health Policy is a unit of the Department of Community Health Sciences at the University of Manitoba's Max Rady College of Medicine, Rady Faculty of Health Sciences. MCHP conducts population-based research on health services, health outcomes and the social determinants of health.

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