



PAX Good Behavior Game: Real-World Impact

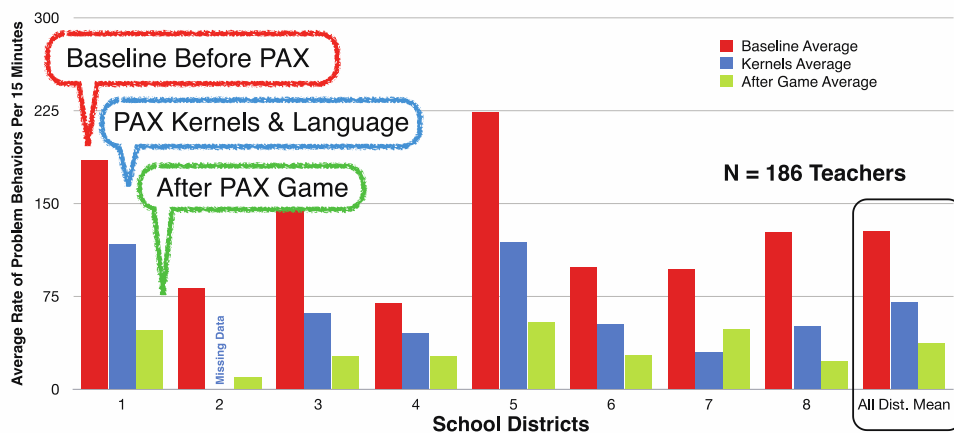
The PAX Good Behavior Game® teaches self-regulation and peer co-regulation during many different school activities. Every day, students plan and work *together* to create more PAX—meaning Peace, Productivity, Health & Happiness in their classes. This strengthens cooperation, concentration, and wellbeing. See www.GoodBehaviorGame.org.

Gold-standard prevention science like the good behavior game studies must also translate into real-world practice to have public-health benefits. Since 2010, nearly 10,000 teachers have received the training and materials to implement the PAX Good Behavior Game. Many teachers have successfully replicated some of the original findings at Johns Hopkins. This document summarizes examples of some of the benefits of the system that have been shown in replications of PAX GBG in the U.S., Canada, and Europe, providing real-world examples of present and future benefits:

PAX GBG reduces student off-task, inattentive, unengaged, disturbing, or disruptive behaviors within 12 weeks^[1]

The most important immediate measure of success of GBG is a rapid reduction in inattentive or problematic behaviors, which predict changes in children’s mental and behavioral health.

3-Month Impact of PAX in Eight US School Districts on Disturbing, Disruptive, and Inattentive Behaviors Per 15 minutes



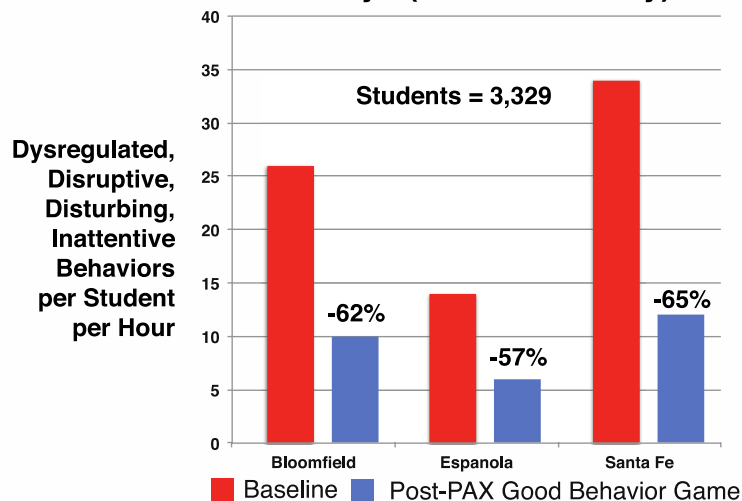
In 2010, the U.S. Center for Mental Health Services (CMHS) began funding diverse replications across the US of PAX Good Behavior Game. In 2013, CMHS specially commissioned the above project to test a 3-month rapid implementation.^[1] Please note all of these schools are Title I settings, representing urban, suburban, and rural districts.

These reductions in unwanted behaviors allow teachers to teach and students to learn more each day.

Irish scientists replicated similar results, after establishing 91% agreement between independent observers.^[2] Ireland reports a statistically significant decrease in the number of such behaviors from pre intervention (Mean = 110.5) to post intervention (Mean = 62.0). The analysis showed a statistical and socially significant reduction 95% of the classrooms, including the number of problem behaviors per student from pre (M = 5.7) to post intervention (Mean = 3.5). Importantly, the change was not associated with factors such as teacher or pupil gender or class size. Irish teachers reported more time to teach effectively.

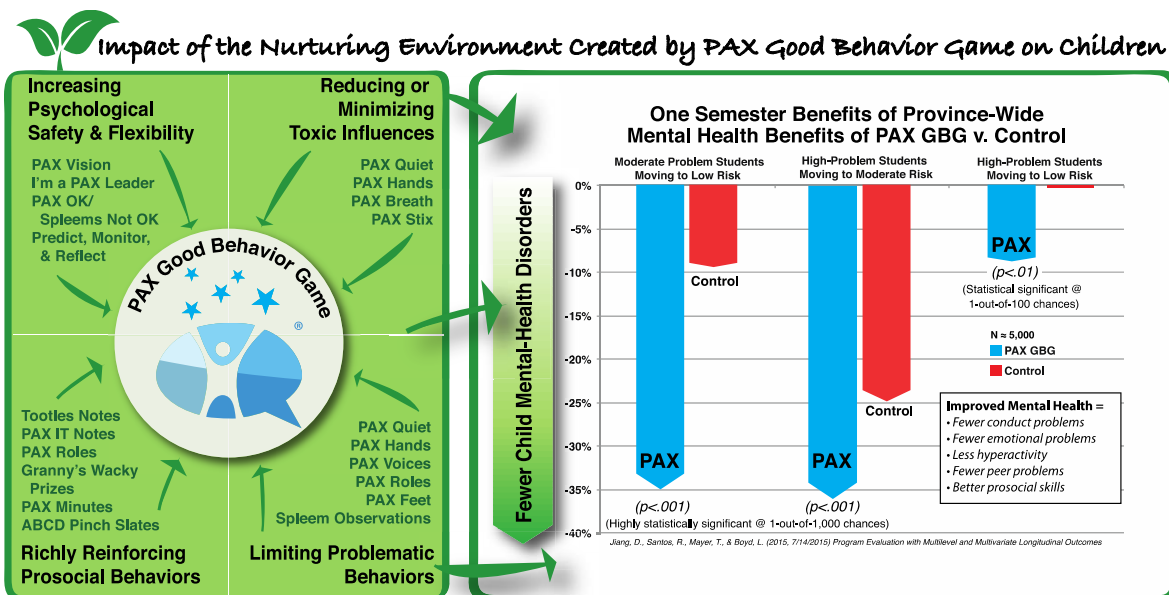
Recently, the State of New Mexico launched a similar public health implementation of PAX GBG that shows the same trend in reductions of problematic or unwanted behaviors (called Spleems by students), across diverse school districts in the state in 75 days. That has led to a long-term commitment by New Mexico's state government to implement PAX GBG, as a public-health policy initiative to prevent and treat childhood mental, emotional, and behavioral disorders. A similar statewide prevention effort is underway in Ohio.

Changes In New Mexico Observed Student Behaviors in 75 Days (March thru May)



PAX GBG results in significant early reductions of mental, emotional, and behavioral disorders^[3]

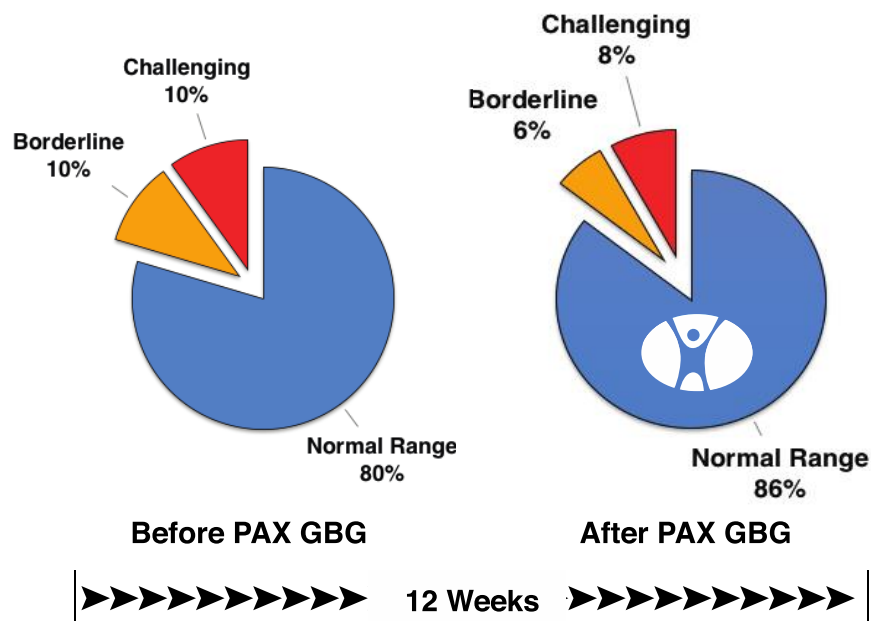
The change in observable behaviors created by PAX GBG turns the classroom into a Nurturing Environment,^[4] using specific PAX Language, evidence-based kernels/cues, and the PAX Game itself, as the figure below demonstrates. Within a semester of exposure to a well-implemented PAX GBG, there can be population-level treatment effects on reducing psychiatric and behavioral disorders in children, as demonstrated by the public health implementation of PAX GBG—province-wide in Manitoba,^[3] shown in the figure below.



The population-level results in Manitoba mirror early findings from the original studies at Johns Hopkins across several replications.^[5, 6] Early indicators of behavior change are important, because long-term benefits only happen when there are clear early behavior changes.^[5, 7]

The Irish study on PAX GBG reports outcomes similar to Manitoba, using the same instrument, though on a smaller scale.^[2] The Manitoba results spanned nearly five months, while the Irish children had just 12 weeks of exposure to PAX GBG, which still impacted the similar outcomes on mental, emotional, and behavioral indicators in the Strengths and Difficulties Questionnaire.^[3] Essentially in the Irish sample, one student per classroom moved to non-clinical range in 12 weeks on the screening tool for mental health disorders.

Teacher Rated Changes of Mental, Emotional and Behavioral Problems Among Children.

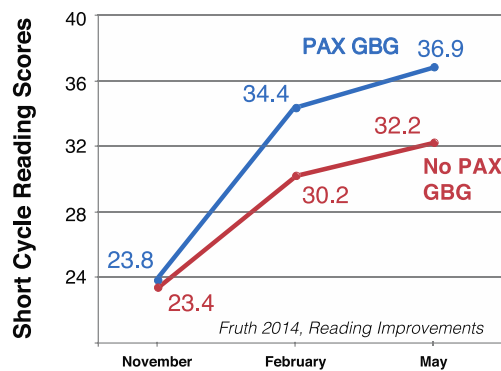


PAX GBG improves standardized reading and math scores.^[8]

Naturally educators want to know if this proven strategy for mental, emotional, and physical health prevention has a well-documented impact on academics and graduation. In the original Hopkins studies, PAX GBG increases grade level academics, high-school graduation and university entry.^[9]

Does PAX GBG do so in the real world, not just in tightly controlled Hopkins studies?^[9] The answer is, “yes.”^[8, 10] Though PAX GBG is not a curriculum; it increases academic success by reducing inattentive or problematic behaviors that distract and confound voluntary attention. PAX GBG also facilitates peer reinforcement for peaceful, productive, healthy, and happy behaviors. Teachers report less stress, which enables them to teach more effectively.^[2] In a school with 4th graders randomly assigned to teachers did or did not use PAXGBG, one can see the cumulative impact on commonly used short-cycle reading scores to measure reading progress as students increase self regulation.^[10]

Randomly Assigned Students’ Reading Scores

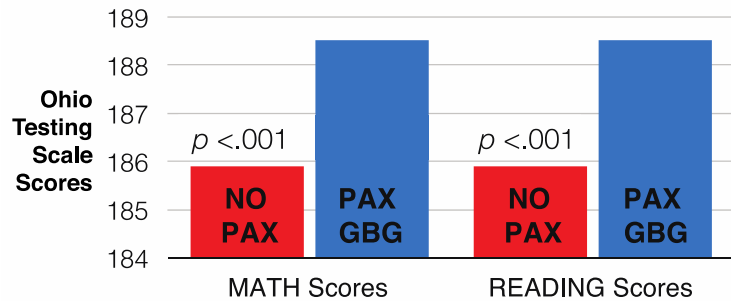


The original Hopkins studies show changes in standardized measures of academic success.^[6, 9]

There is evidence of similar real-world effects of PAX GBG. Licking County, Ohio, began promoting PAX GBG in 2006. It was slow to take off, but eventually bodies of schools (multiple different districts) elected to use it. This created a natural experiment, as the state has standardized testing for reading and math. The study shows that the poorest schools showed the greatest improvement in reading and math scores, regardless of the curriculum.^[8] How does PAXGBG do that? Teachers had more time to teach, and the students had better self-regulation and group regulation skills for learning.

Improvements on Standard Measures of Academic Progress in High-Poverty Schools in Six Ohio Districts

Source: Weis, R., Osborne, K. J., & Dean, E. L. (2015).



This statistical difference favoring PAX GBG is highly significant greater than 1 chance in 1,000

Why Does PAX Work So Rapidly When So Many Approaches Do Not?

The answer lies in its scientific history. Before any randomized control experiments, the good behavior game had been tested in twenty direct observational studies, which clarified how and why it worked.^[11] All of those studies showed rapid change. Also, PAX GBG contains another ten evidence-based kernels (fundamental units of behavior change) that also have a similar history of precision measured behavior change with early wins.^[12]

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