

# Not Just Child's Play



Russell Lopez on the  
renovated playground at the  
James J. Chittick Elementary  
School in Mattapan,  
Massachusetts.

**STUDY  
SUGGESTS NEW  
PLAYGROUNDS  
BUILD  
BETTER MATH  
STUDENTS**  
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Before Russell Lopez began studying the playgrounds at Boston's public schools, he drove all over the city and checked out all 140 schoolyards. There was little doubt which had been renovated in the previous decade and which hadn't. The new schoolyards, once barren lots with cracked asphalt and broken glass, have grassy expanses, new equipment, and even outdoor classrooms, where kids can plant flowers and trees and feed the birds.

Lopez, a School of Public Health assistant professor of environmental health, and two Tufts University colleagues had been working on a case study, funded by the Robert Wood Johnson Foundation, of the achievements of the Boston Schoolyard Initiative (BSI), a public-private partnership founded in 1995 to rebuild neglected urban play areas. The researchers had been spending so much time at the schools that the BSI staff asked if they would also look at something else: whether the renovated playgrounds had an impact on student achievement.

"I really wasn't expecting to find anything," says Lopez (SPH'03), citing the relatively small sample of schools. "I thought, even if there is a real effect, there are so few schools involved that it doesn't have a lot of statistical power."

He was wrong. When Lopez studied the 2003 results of the fourth-grade English language MCAS (Massachusetts Comprehensive Assessment System), the standardized tests that almost all public school students across the commonwealth must take, he saw no discernable differences between children at the seventy schools with new playgrounds and children at schools with old playgrounds.

But when he looked at math scores, he saw a very different picture. In schools where fourth graders had new playgrounds, 25 percent more kids passed the math MCAS. And that figure remained true after he and his team controlled for factors such as demographics and the number of students receiving free or reduced-price lunches.

The researchers suggest several reasons for the association between better schoolyards and improved test scores. It may be that students at schools with upgraded playgrounds get more physical activity, which may make them more willing and able to learn once they're back at their desks. It could also be the result of more parental involvement in the schools. Or, Lopez says, "It could be that students and teachers feel better about going to schools that are not dreary, jail-like settings and that look more inviting. That might set up people to want to learn."

Lopez warns that the findings of his "ecologic study" should be viewed with some caution. "Ecologic studies have a certain limited power," he says. "We aren't really looking at the kids. We don't know whether any of these kids have ever been outside. It would be better to look at kids who used the outdoor spaces and then see if they did better than the kids who didn't, but we just didn't have that ability."

Lopez is now following up on the study, looking at test scores at schools at three different stages: before their playgrounds were renovated, the year they were upgraded, and two years later.

He'll study other outcomes as well, such as student and teacher absenteeism, expulsions, and promotions of students to the next grade. "And then," he says, "having heard that the state will require every fourth grader to have their height and weight measured, we would like to do a follow-up with that data, to see if kids have less obesity in these schools."

Lopez believes his findings are particularly important at a time when the slumping economy is forcing schools across the nation to tighten their belts.

"I worry that the first thing that gets cut is the outdoor space," he says. "There are a lot of people who think that it's not important, that all kids need is reading, writing, and arithmetic. And I think what this shows is that getting kids to learn is a broader experience. How places look and how they're used are as important as what goes on in the classroom."

