



Eighth Grade Access to Algebra I:

The Pathways to Math Achievement Study

In fall 2008, the **Regional Educational Laboratory Northeast and Islands** launched the three-year **Pathways to Math Achievement Study** to examine how improving access to Algebra I for eighth graders benefits student math achievement. In the study, an online Algebra I course is being offered to eighth graders whose teachers have identified them as “algebra-ready.” Researchers won’t just be looking at students taking the online class but at how the presence of such a course impacts the achievement of all eighth graders in the study.

Student achievement will be measured by standardized tests at the end of eighth grade and in tenth grade, as well as through course-taking patterns and success in advanced mathematics courses during high school. Data collection for the study will run through fall 2010.

Why Teach Online Algebra I to Eighth Graders?

Improving middle- and high-school student achievement in mathematics is a national and regional concern. To help strengthen students’ math achievement, national and state-level policymakers advocate offering algebra to eighth graders. Algebra I is seen as an important “gatekeeper course” because it is a prerequisite for higher-level math and science courses.

Online coursework is increasingly used by schools to expand the variety of courses available to students, and they may be an especially important avenue for schools challenged with recruiting and holding on to highly qualified teachers. These courses can ensure that students in small schools and isolated communities have access to advanced science, technology, engineering and mathematics (STEM) course offerings.

Who Is Participating?

Seventy schools, primarily in rural areas—50 in Maine and 20 in Vermont, serving 2,080 eighth graders—

are participating in the study. These were schools that wanted to offer Algebra I to their eighth graders but were not able to do so before the study.

Who is Conducting the Study?

The study is conducted by Regional Educational Laboratory Northeast and Islands, administered by Education Development Center, Inc., with partner American Institutes for Research. It is funded by the U.S. Department of Education.

What Is the Study Design?

The study is a randomized control trial, or RCT, with a treatment group (the group receiving the online course in the 2008–09 academic year) and a “control” or comparison group. Participating schools agreed to be assigned to the treatment or control groups through a lottery. This year algebra-ready eighth graders in the treatment group are taking the online Algebra I course while all other eighth graders (in treatment and control schools) are taking their school’s regular eighth grade math class.

Eventually, all participating schools will receive the online Algebra I course, whether in the treatment or control group, at no cost for two consecutive years. Treatment schools began receiving the course in fall 2008 and will receive it again in 2009–10. Control schools will receive the course in the 2009–10 and 2010–11 academic years. They will receive the same level of support as treatment schools, including:

- a highly qualified online teacher,
- technical support for the course,
- training and stipends for on-site school staff who oversee the online course.