When Should Elementary School Teachers Specialize? Evidence on Departmentalized Instruction in Massachusetts

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CALDER
Center for Analysis of Longitudinal Data in Education Research
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Does teacher specialization in elementary school help or hurt students?

Most elementary students have one teacher for all subjects. But in departmentalized schools, teachers specialize in one or two subjects, like math or reading.

Although still relatively uncommon—about 15% of elementary teachers have departmentalized assignments—elementary departmentalization has grown in recent years (NCES, 2007, 2017, 2023).

There are reasons to believe departmentalizing carries potential benefits but also risks in elementary school.

On the one hand, departmentalization could allow teachers to focus on their strongest subjects and reduce lesson planning demands. On the other hand, departmentalization could threaten the continuity and strong relationships students can experience having a single teacher throughout the day.

Prior research on the academic impact of departmentalization is mixed. An experiment in Houston found negative effects on achievement (Fryer, 2018). But other studies have found little or no school-level impact (Bastian & Fortner, 2020; Hwang & Kishida, 2022).

New evidence from CALDER suggests departmentalization in elementary school can work when schools match teachers to their strengths.

Using statewide data from Massachusetts, CALDER researchers found elementary departmentalization improves student outcomes in English language arts and science, with some evidence of gains in math (Backes et al., 2026). The combined math and ELA gains from departmentalization were statistically significant but modest (0.02 - 0.03 SD).

Importantly, researchers found these benefits do not come from teachers becoming more effective when they specialize. Instead, they were driven by departmentalized schools assigning teachers to subjects they already taught well.

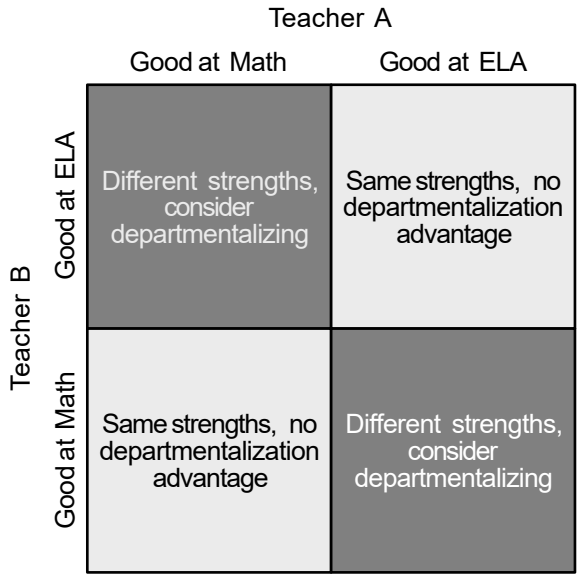
The benefits of departmentalization extended to middle school.

A related CALDER study found that students from departmentalized elementary schools performed better when they were transitioning to middle school. Each year of elementary departmentalization boosted math and ELA scores by about 0.03 standard deviations. These gains faded by eighth grade in math and ELA, but persisted in science (Backes et al., 2025).

The bottom line: Departmentalization in elementary school can make sense if teachers have complementary strengths.

Not all elementary schools will benefit from departmentalization. The effects largely depend on whether teachers excel in different subjects. School leaders should consider departmentalization when their teachers have distinct strengths that can be strategically matched to their assignments (Figure 1).

Figure 1. Comparative skills & departmentalization: Consider specializing when teachers have complementary skills.



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