IES Institute of Education Sciences

Evaluation Report

# Evaluation of Departmentalized Instruction in Elementary Schools: Exploring Implementation Experiences

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# Evaluation of Departmentalized Instruction in Elementary Schools: Exploring Implementation Experiences

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Helping schools more efficiently use their resources to improve student achievement and teacher retention is a longstanding but increasingly important priority for education policymakers. Departmentalizing instruction is one potential strategy to address these goals in elementary schools. Assigning upper elementary grade teachers to teach their strongest subjects to multiple classes ("departmentalizing"), rather than teaching all subjects to a single class ("self-contained instruction"), could have multiple benefits. Departmentalizing may improve instruction by providing more time for planning and professional development in teachers' assigned subjects. It may also increase teachers' satisfaction if teachers are assigned to the subjects they prefer. However, by increasing the number of students teachers must get to know, it could interfere with relationship-building and decrease teachers' engagement with students and parents. To learn more about the potential benefits and challenges of this strategy, this study examined the experiences of 90 schools that either voluntarily switched to departmentalized instruction or continued teaching all subjects to a single class in 4th and 5th grades for two years beginning in fall 2019. The pandemic significantly disrupted instruction and some of the planned study activities in these schools. Nonetheless, learning about schools' and teachers' experiences during this challenging time may inform schools and districts considering whether to adopt this strategy.

## Key Findings

- ***Schools implemented key steps needed to departmentalize instruction, but some faced scheduling challenges.*** Schools that departmentalized instruction mostly assigned teachers to math and English language arts in ways aligned with their relative strengths, an essential feature of the strategy. But developing a teaching schedule that accommodated those assignments was difficult for some schools even before the switch to distance learning.
- ***Departmentalized teachers' experiences were consistent with some, but not all, of the potential benefits and challenges of using departmentalized instruction in elementary schools.*** For example, departmentalized teachers spent more hours per week than other teachers planning for each subject they taught, and they were more satisfied with what they taught. However, departmentalized teachers also reported spending less time meeting with students and their parents, which might make it harder for teachers to understand students' needs and adapt their instruction to meet those needs.
- ***The effects of departmentalized instruction on student achievement and teacher retention remain unclear.*** This study was unable to assess the effects of departmentalized instruction on student achievement and teacher retention. Other recent studies have found that students taught by departmentalized teachers had lower achievement than those taught by self-contained teachers, but those studies also had limitations.

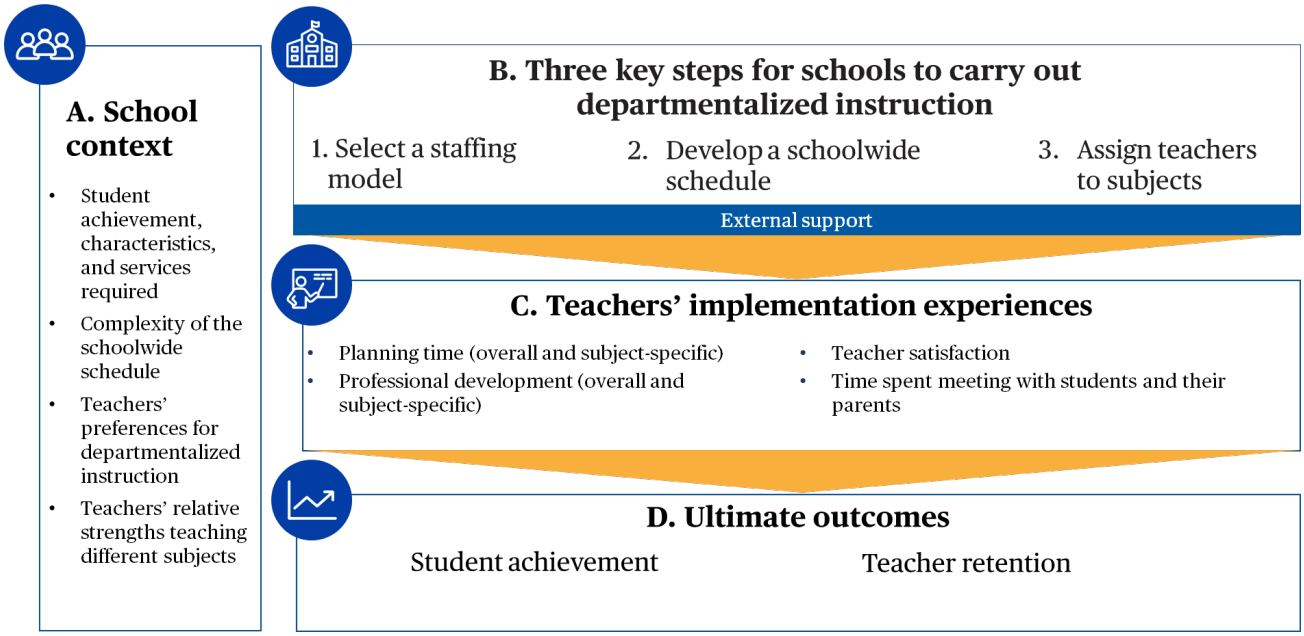
Schools that primarily serve students from low-income households need proven strategies to improve student achievement and teacher retention. By the upper elementary grades, the average academic achievement of students from families with low incomes lags several years behind that of students from families with higher incomes.[1] These schools also struggle to attract and retain teachers.[2] The COVID-19 pandemic exacerbated both these challenges, increasing the need for strategies to address them.[3]

Departmentalized instruction is one potential strategy to leverage teachers' strengths to improve these outcomes in elementary schools. Under this strategy, each teacher specializes in teaching specific subjects to several different classes of students, rather than the more traditional approach in which each teacher teaches all core

subjects to a single class (commonly referred to as self-contained instruction).[4] Organizing teachers by subject has been standard practice in middle and high schools across the country for decades. Over the past two decades, the percentage of 4th- and 5th-grade teachers using departmentalized instruction has doubled, from 15 percent in 1999–2000 to 30 percent in 2020–2021.[5]

Whether schools choose to departmentalize instruction, or implement it successfully, may depend on their context and ability to carry out three key steps to put it in place (Exhibit 1, Boxes A and B). For example, teachers' preferences and relative strengths at teaching different subjects may influence schools' decisions to departmentalize. The complexities of the schoolwide schedule and student needs may also affect schools' decisions. For example, a departmentalized school with many students who require support services may find it more challenging to schedule those services.

**Exhibit 1. How Departmentalized Instruction May Affect Teachers' Experiences, Student Achievement, and Teacher Retention**




If implemented well, departmentalized instruction could have several potential benefits, including improving instruction. Many teachers are more effective at teaching particular subjects.[6] Even teachers who are excellent at teaching all subjects are likely to be better at teaching some of these subjects than the others. If a school assigns each teacher in a grade to teach their strongest subjects and avoid their weakest subjects, students in that grade will generally receive higher-quality instruction in those subjects. Departmentalized instruction may also improve instruction by letting teachers spend more time planning and participating in professional development activities for the specific subjects they teach (Exhibit 1, Box C).

As an added benefit, departmentalized instruction could also improve teacher satisfaction (Exhibit 1, Box C). For example, teachers may have lighter workloads because they do not have to plan for classes and participate in professional development for subjects they do not teach. Even if teachers are spending more time preparing for the subjects they teach, they may still spend less time preparing overall because they teach fewer subjects. Additionally, if principals consider teachers' preferences when making assignments, departmentalized instruction may improve teacher satisfaction by allowing teachers to focus on the subjects they prefer.

However, departmentalization could pose challenges for teachers' relationships with students and their families. Some experts worry this could be particularly problematic for elementary school students, who may be especially likely to benefit academically from strong personal relationships with a single teacher in a self-contained class.[7] Because departmentalized teachers teach more students, it may be harder for them to build strong relationships with individual students or their parents. This could result in these teachers meeting less outside of class with students and parents, adversely affecting the amount of extra help they provide students, their understanding of students' needs, and their ability to adapt instruction to these needs (Exhibit 1, Box C). Depending on how these potential benefits and challenges play out, student achievement and teacher retention could improve, decline, or be unaffected (Exhibit 1, Box D).

To help participating schools implement departmentalized instruction well, the study provided light-touch support. Public Impact, an education consulting firm, conducted a 4-hour in-person design meeting in each study district in spring 2019 to help school leaders work through the three key steps (Exhibit 1, Box A).[8] In summer 2019, Public Impact held an hour-long webinar for each study district to provide principals with strategies to help teachers who are departmentalizing use collaborative planning time effectively. After schools began departmentalizing, schools could request one-on-one coaching calls with Public Impact for additional support, but most (74 percent) did not.

**Box 1. Overview of the Study Design**

### What questions did the study address?[9]

- How did schools implement the three key steps of departmentalized instruction, including selecting a staffing model, developing a schoolwide schedule, and assigning teachers to subjects?
- Were teachers' experiences implementing departmentalized instruction consistent with the potential benefits and challenges?

### Who participated?

- Schools: 90 elementary schools not already implementing departmentalized instruction in the 2018-2019 school year from 12 school districts; 89 percent were Title I schools, 50 percent were in the South, and 58 percent were in urban areas.
- Teachers: 571 4th- and 5th-grade teachers of core subjects (math, English language arts, social studies, and science). Teachers had an average of 11 years of teaching experience.

### How was the study conducted?

- Districts in the study allowed their participating schools to volunteer either to implement departmentalized instruction or to maintain self-contained instruction for the 2019-2020 and 2020-2021 school years (Years 1 and 2).
- At the start of the study, 43 schools (about half of the participating schools within each district) volunteered to switch to departmentalized instruction. These schools received light-touch support from the study team (see Appendix Exhibit A.1). Schools could choose to departmentalize their 4th grade, 5th grade, or both. Across the 43 departmentalized schools, a total of 73 4th and 5th grades switched to departmentalized instruction.[10] The remaining 47 schools agreed to maintain self-contained instruction.
- The two groups of schools had similar characteristics at the start of the study, including student achievement, student and teacher demographics, and teachers' years of experience (see Appendix Exhibits B.6 and B.7).[11] However, principals from the two groups of schools had different attitudes about

factors related to departmentalized instruction. For example, principals of departmentalized schools were more likely to say that their school needed major changes to meet their student achievement goals (see Appendix Exhibit B.5).

- With support from the study team, departmentalized schools organized their 4th- and 5th-grade teachers into teacher teams—groups of core subject teachers that shared the same students.[12] The teachers in the departmentalized schools were organized into 97 teacher teams, typically with one team for each grade level.[13]
- Departmentalized teachers could teach math or English language arts, but not both. A teacher could teach as few as one core subject or as many as three (math or English language arts, plus social studies and/or science).

### What data were collected?

- Data on schools' implementation of departmentalized instruction came from systematic coding of principal interviews conducted during the 2019-2020 school year. All principals of the study's 43 departmentalized schools completed these interviews. Data also came from teacher value-added scores (a widely used measure of teacher effectiveness) from district administrative records. These scores were available for 75 percent of study teachers in the 2019-2020 school year. See Appendix Exhibits B.15-18 for more details.[14]
- Data on teachers' implementation experiences were gathered from surveys of departmentalized and self-contained teachers in study schools in spring 2021. Eighty-three percent of study teachers completed these surveys.

### How were the data analyzed?

- To describe how principals implemented the three key steps to departmentalize instruction and identify what these principals perceived as the approach's key challenges and benefits, the study systematically coded interview responses of principals of departmentalized schools and tabulated these responses into descriptive statistics such as counts and percentages.[15] These analyses were based on the full set of 43 departmentalized schools in the first year of the study.
- To assess whether teachers were assigned to subjects aligned with their relative strengths, the study calculated the percentage of departmentalized grades in which reassigning math and English language arts teachers to the other subject would result in higher value-added in at least one of the subjects without lowering value-added scores in the other subject.[16] These analyses were based on the 42 departmentalized grades in the first year of the study for which the study had the necessary data to assess teachers' relative strengths.
- To explore how departmentalized instruction might affect teachers' experiences, the study presents survey responses from the study sample of departmentalized teachers. These analyses were based on the 101 departmentalized teachers who responded to the survey at the end of Year 2.[17] To provide a benchmark for these responses, the study also presents survey responses from the 235 self-contained teachers who responded to the study's survey.

### What are the limitations of this study?

- This report presents information on teachers' experiences in the study's self-contained schools as one benchmark for those in departmentalized schools. However, these differences do not represent the effects of departmentalized instruction. Because schools chose whether to departmentalize, underlying

differences between the two sets of schools may have affected teachers' experiences. For example, because principals in departmentalized schools were more likely to say their school needed major changes to meet their student achievement goals, they may have made other changes that were unrelated to departmentalizing. These other changes could have influenced teachers' time for professional development and planning.

- The report presents scheduling challenges principals of departmentalized schools reported, but the study does not have comparable data from principals of self-contained schools. Therefore, the report is unable to describe how the challenges of departmentalized schools compare to those of self-contained schools.
- Information on teachers' relationships with students and their parents was based on teacher survey responses. The study did not collect data from students and their parents.
- The COVID-19 pandemic was highly disruptive to the study, and findings may not be applicable to a more typical school year. The pandemic began in the spring of the first study school year, causing all study schools to shut down for the rest of the year. This halted all study activities slated to occur that spring. In the summer before Year 2, 9 of the departmentalized schools switched to self-contained instruction and 12 departmentalized and 10 self-contained schools withdrew from the study entirely, largely due to health concerns related to the pandemic.[18] An additional two schools switched from self-contained to departmentalized instruction. Only 22 of the original 43 departmentalized schools (51 percent) and 35 of the original 47 self-contained schools (74 percent) remained in the study and maintained their original status through the end of Year 2. The final sample of teachers included 336 teachers who were in the remaining participating schools and completed the survey in Year 2 (59 percent of teachers from the original sample). This reduction in sample is substantial and likely not random. This limits the study's ability to generalize to both the original sample of schools and teachers in the study and to schools and teachers nationally. The pandemic was also highly disruptive to instruction, with schools navigating a mix of distance learning, hybrid, and in-person instruction.

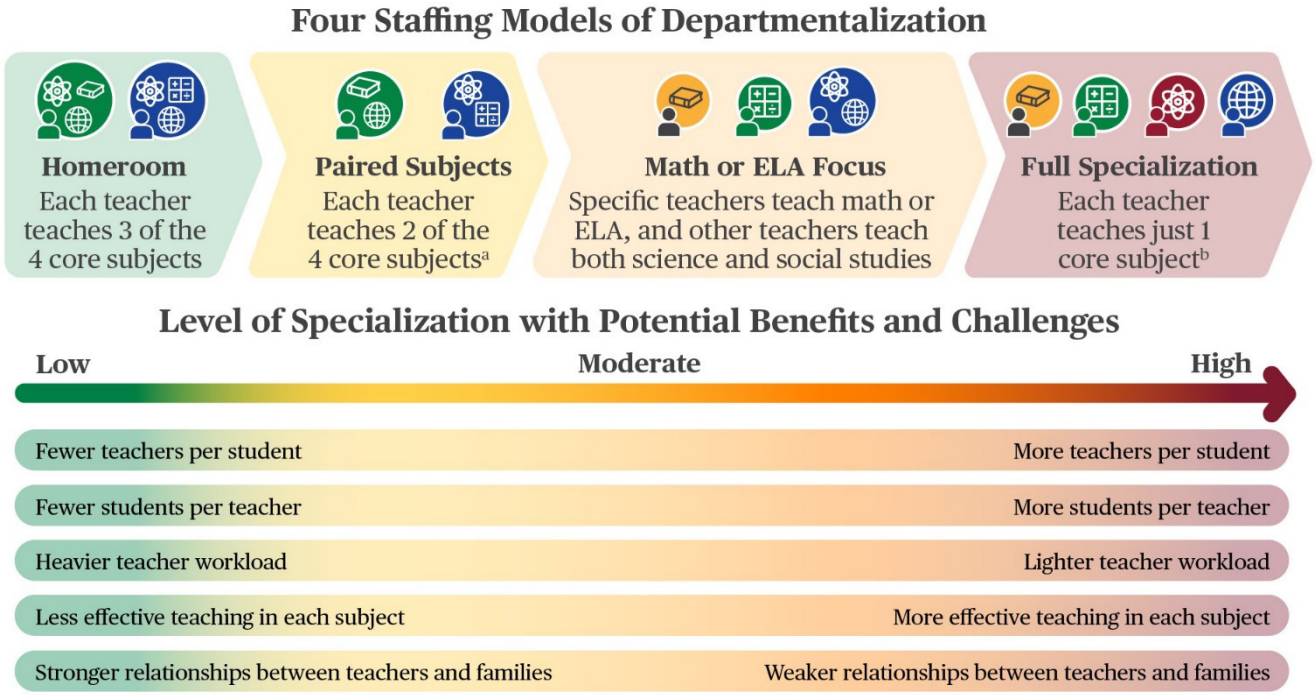
When launched, this study intended to fill the gaps in the limited evidence on the effects of departmentalized instruction and how it is implemented in elementary schools.[19] However, it was unable to assess departmentalized instruction's effects due to the COVID-19 pandemic and other factors.[20] Instead, the study examined the experiences of a set of schools that chose to implement departmentalized instruction in 4th and 5th grades, as well as their teachers' experiences with this strategy. To provide context for those findings, the report describes the experiences of 4th- and 5th-grade teachers in a set of schools in the same districts that chose to maintain self-contained instruction.[21] These exploratory findings can help generate hypotheses on the potential benefits and challenges of using departmentalized instruction in elementary schools. These findings may be useful for school or district leaders considering departmentalized instruction.

## SCHOOLS IMPLEMENTED THREE KEY STEPS TO DEPARTMENTALIZE INSTRUCTION, BUT SOME FACED SCHEDULING CHALLENGES

Understanding how schools carried out the three key steps to departmentalize instruction can provide insight into how school leaders navigated the potential trade-offs that this strategy may involve (Exhibit 1, Box B). For example, in selecting a staffing model that determines how many subjects each teacher will teach and how many teachers each student will have (step 1), schools could choose between four main models that each offered different levels of specialization (Exhibit 2). Staffing models with more specialization—each teacher specializing in

fewer subjects—might offer greater benefits for instructional quality in the classroom and teacher satisfaction. However, under staffing models with more specialization, students have more teachers, which could affect the quality of student-teacher relationships. Developing a schoolwide schedule (step 2) could pose challenges for schools if departmentalized instruction increases the complexity of the scheduling process. Assigning teachers to the subjects they teach best (step 3) could improve the quality of instruction but may reduce teacher satisfaction if teachers are not assigned to the subjects they prefer. The findings summarize how study schools implemented the three key steps before and during the first year of departmentalized instruction, before schools had been affected by the COVID-19 pandemic.

**Exhibit 2. Description of the Four Staffing Models, Their Level of Specialization, and Potential Benefits and Challenges**




Notes: See Appendix Exhibit A.4 for more details about the potential benefits and challenges of greater specialization.

a Schools can only use this model if they are departmentalizing a team with an even number of teachers.

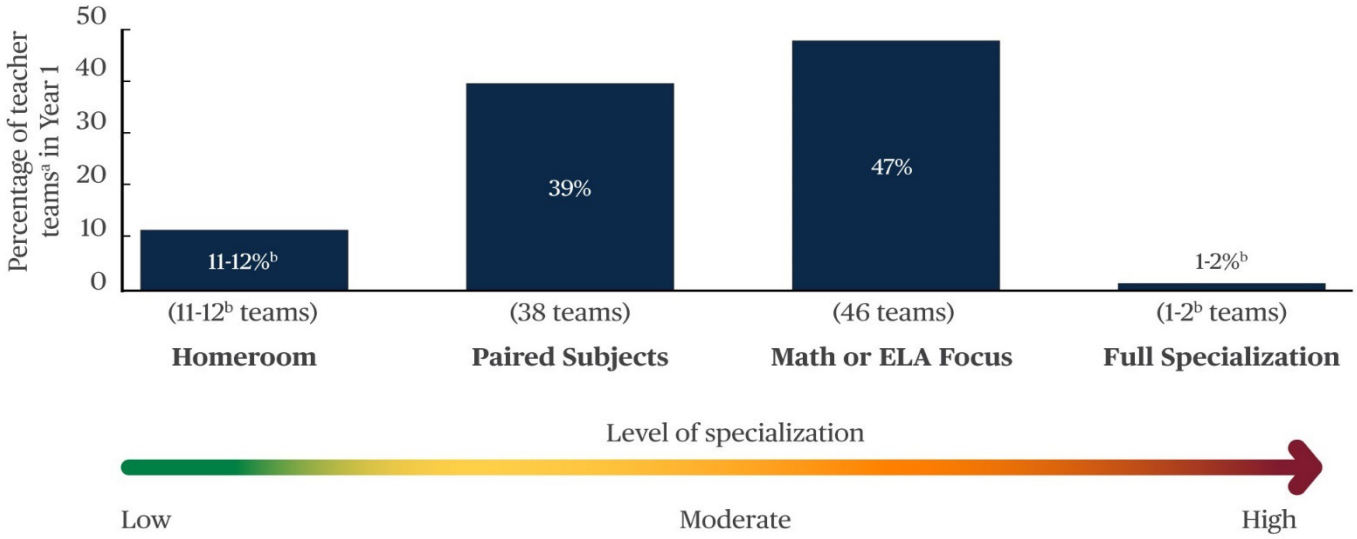
[b] Schools can only use this model if they are departmentalizing a team with four teachers.

ELA = English language arts.

- ***Schools generally selected staffing models with moderate levels of teacher specialization, which may balance the benefits and challenges of specialization.*** The first step for schools departmentalizing instruction is to decide how many and which core academic subjects (math, English language arts, science, and social studies) each teacher will teach. Most of the schools in the study used a staffing model with a moderate level of specialization.[22] Thirty-nine percent of teacher teams used the Paired Subjects model and 47 percent used the Math or English Language Arts Focus model (Exhibit 3). In both these models, teachers taught at most two core academic subjects rather than the four subjects teachers taught in traditional self-contained elementary school classrooms. In contrast, only 1-2 percent of teacher teams used the Full Specialization model, which had the highest level of specialization. In this model, each teacher taught a single core subject and students received instruction from four different teachers. Only 11-12 percent of teacher teams used the Homeroom model, which had the lowest level of specialization and was most similar

to a traditional self-contained elementary school classroom.[23] Thus, the majority of departmentalized schools chose staffing models that avoided the highest and lowest levels of specialization–that is, the models with the potential for the greatest benefits and challenges for teachers and students. For example, teachers are focusing on fewer subjects when planning (one of the potential benefits of specialization), but they are not focusing on just one subject. On the other hand, teachers have more students to build relationships with (one of the potential challenges), but not as many as they would have if they were teaching just one subject to four groups of students.

**Exhibit 3. Staffing Models Used in Departmentalized Schools**




Source: Principal interviews conducted in fall 2019, 97 teacher teams.

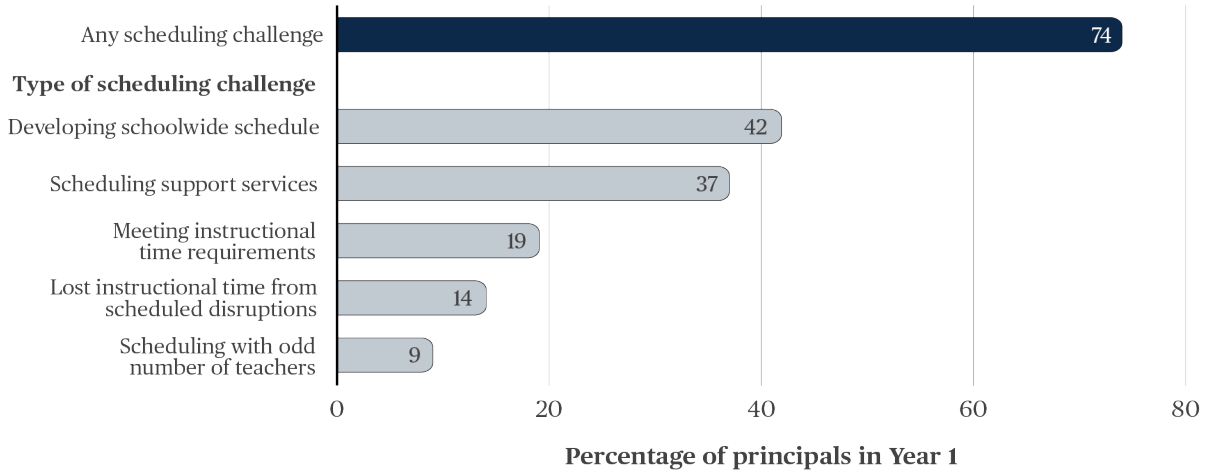
[a] The term "teacher team" refers to the set of core subject teachers who teach the same group of students. Core subjects are math, English language arts, science, and social studies.

[b] Exact percentage and number have been withheld to protect respondent confidentiality in accordance with National Center for Education Statistics statistical standards.

ELA = English language arts.

- ***Principals reported that developing the schoolwide schedule was a challenge.*** Many principals of departmentalized schools (74 percent) reported during interviews that switching to departmentalized instruction made scheduling challenging (Exhibit 4). The most common scheduling challenge (reported by 42 percent of principals from departmentalized schools) was developing a schoolwide schedule, which shows the schedule for all classes and teachers. Developing a schoolwide schedule may be more challenging for departmentalized schools because, for example, these schools ideally will schedule time for teachers of the same students to collaborate and coordinate instruction. In doing so, schools must avoid scheduling a departmentalized math teacher and a social studies teacher to provide instruction to the same students at the same time. In addition, over a third of principals (37 percent) reported it was challenging to schedule support services, such as those for English learner students and students receiving special education. Providing these services can be more challenging for schools using departmentalized instruction. For example, schools using self-contained instruction can have all 4th-grade teachers teach math in the morning when the 4th-grade pull-out math teacher is available. But with departmentalized instruction, a math teacher teaches multiple classes, so some students may have to take math in the afternoon. If a student needs to receive pull-out math instruction in the morning but their math class is in the afternoon, they will need to be pulled out of another class, like English language arts, which may negatively affect their learning in that subject.

**Exhibit 4. Scheduling Challenges Principals from Departmentalized Schools Reported**

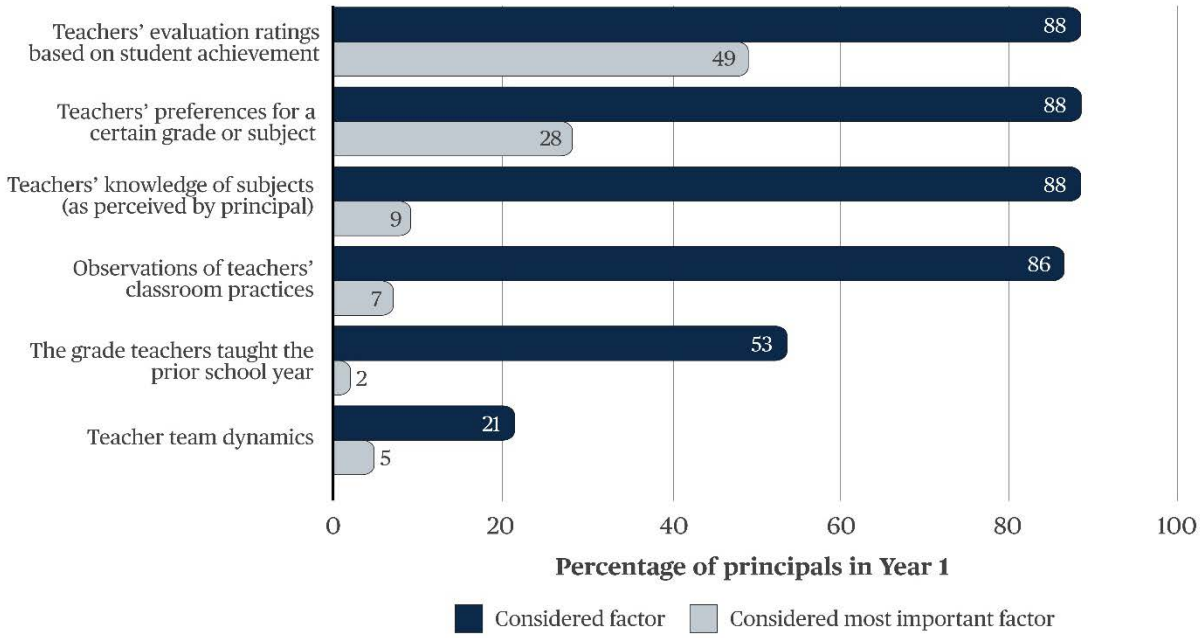



Source: Principal interviews conducted in fall 2019 and spring 2020, 43 principals of schools using departmentalized instruction.

- ***Schools with data on teachers' relative strengths usually assigned teachers to math and English language arts in ways aligned to teachers' strengths in each subject.*** For 83 percent of departmentalized grades with measures of individual teachers' "value-added"–a proxy for their effectiveness in raising student achievement in math and English language arts– subject assignments aligned with teachers' relative strengths.[24] That is, teachers who were relatively more effective in improving test scores in math taught math; and those who were relatively more effective in raising English language arts achievement taught English language arts. For the remaining 17 percent of the departmentalized grades, principals could have swapped the math and English language arts teachers to improve teacher value-added scores in one subject without reducing them in the other. Because value-added data were available for only 58 percent of the study's departmentalized grades, this unique way of examining assignments should be considered exploratory.

  Principals from departmentalized schools said they considered several factors when assigning teachers to subjects, including their value-added measures or other ratings based on student achievement. Other frequently cited factors included teachers' preferences for a grade or subject, principals' perceptions of teachers' knowledge of subjects, and principals' observations of teachers' classroom practice (Exhibit 5). When asked what they considered the most important factor, nearly half of principals (49 percent) cited teachers' evaluation ratings in each subject and about a fourth (28 percent) cited teachers' preferences.

**Exhibit 5. Factors Principals from Departmentalized Schools Reported Considering When Assigning Teachers to Subjects**



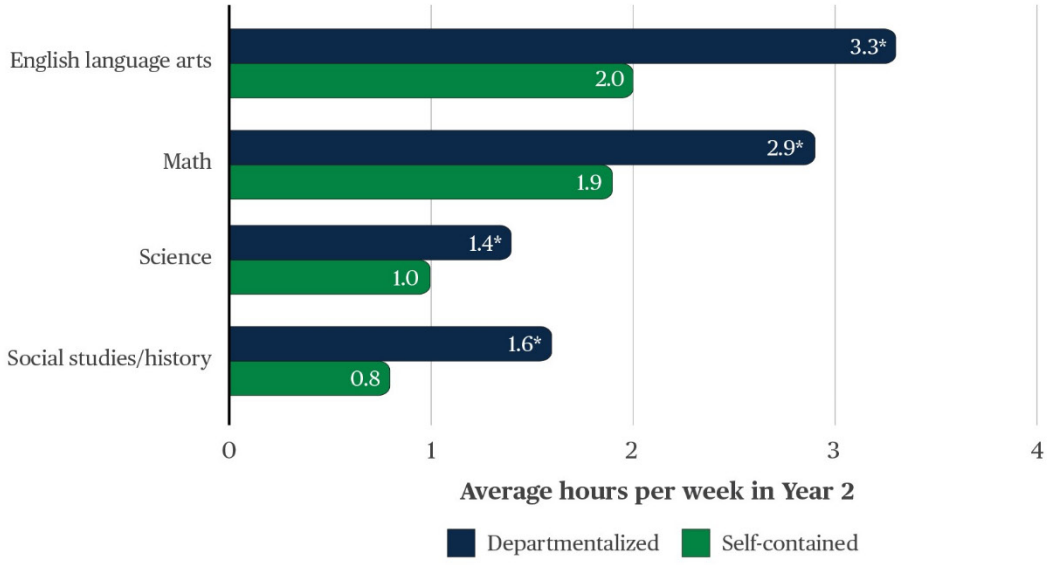

Source: Principal interviews conducted in spring 2020, 43 principals of schools using departmentalized instruction.

## DEPARTMENTALIZED TEACHERS' EXPERIENCES WERE CONSISTENT WITH SOME, BUT NOT ALL, OF THE POTENTIAL BENEFITS AND CHALLENGES OF THE STRATEGY

Teachers' experiences with departmentalized instruction and the extent to which their experiences aligned with the strategy's potential benefits and challenges can shed light on its potential to affect student achievement and teacher retention (Exhibit 1, Box C). If departmentalized instruction allows teachers to spend more time preparing for their assigned subjects and increases their satisfaction, it could improve student achievement and teacher retention. But if teaching more students weakens teachers' relationships with students and their families, it could decrease student achievement. One benchmark for assessing departmentalized teachers' experiences is the experiences of teachers in schools that chose not to departmentalize and instead continued with self-contained instruction, the more traditional staffing model.

- ***Consistent with a potential benefit of departmentalized instruction, departmentalized teachers spent more time planning for their assigned subjects than self-contained teachers.*** Departmentalized instruction could improve student achievement if specializing in specific subjects allows teachers to spend more time planning for instruction in those subjects, which might improve the instruction they provide. Departmentalized teachers reported spending about an hour more per week on average planning for each of the subjects they taught (Exhibit 6).[25] For example, departmentalized teachers who taught math or English language arts reported spending about 3 hours on average per week planning for those subjects, whereas self-contained teachers reported spending about 2 hours per week.

**Exhibit 6. Teachers' Reported Planning Time by Subject**



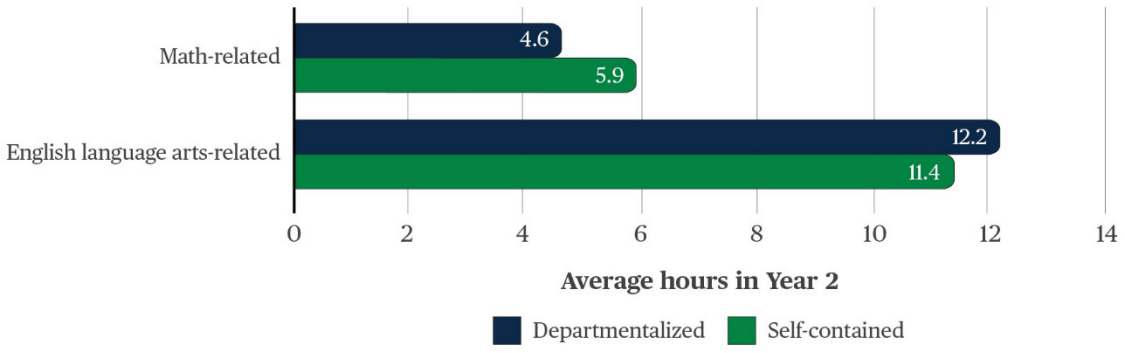

Source: Teacher survey administered in spring 2021, 270-286 teachers.

Notes: Subject-specific results are based on responses of teachers who taught those subjects.

* Statistically different from self-contained teachers at the 0.05 level.

- ***However, departmentalized teachers did not receive more subject-specific professional development, which was a potential benefit of departmentalized instruction.*** Departmentalized instruction could also improve student achievement if specializing in specific subjects allows teachers to spend more time on professional development for the subjects they teach, which might improve their instruction in those subjects.[26] However, departmentalized teachers who taught math or English language arts reported participating in a similar amount of professional development in the subject they taught as self-contained teachers. Both groups of teachers reported spending an average of about 11 to 12 hours on English language arts-related professional development during the year and about 5 to 6 hours on math-related professional development (Exhibit 7).[27]

**Exhibit 7. Teachers' Reported Hours of Professional Development in Math and English Language Arts**




Source: Teacher survey administered in spring 2021, 261-268 teachers.

Notes: Teachers were asked about the professional development they participated in during the 2020-2021 school year, including summer 2020. Subject-specific results are based on responses of teachers who taught those subjects. If a teacher taught the subject but did not participate in any professional development for it, their response was coded as 0 hours.

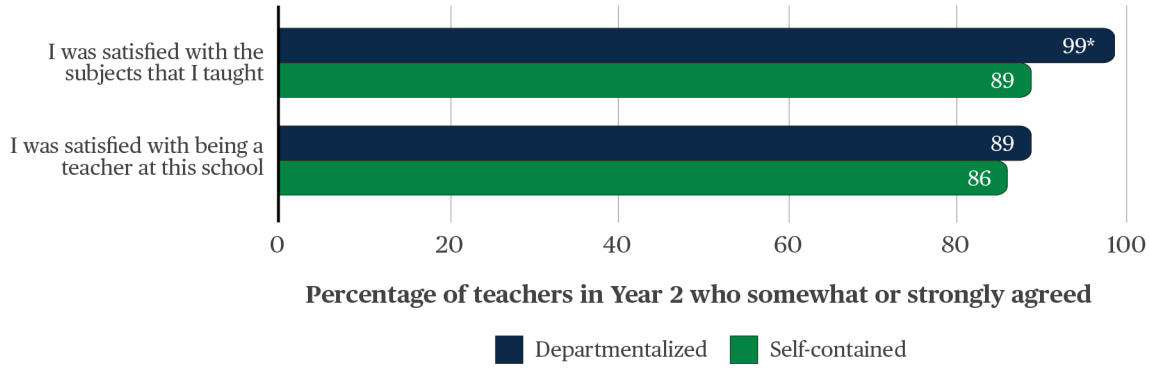
* Statistically different from self-contained teachers at the 0.05 level.

- ***Consistent with potential benefits, departmentalized teachers were more satisfied than self-contained teachers with the subjects they taught; however, they were not more satisfied with their jobs overall.*** Departmentalized instruction could improve teacher retention if it increases teacher satisfaction by allowing them to specialize in the subjects they prefer. Almost all departmentalized teachers (99 percent) were satisfied with the subjects they taught, compared to 89 percent of self-contained teachers (Exhibit 8). This may not be surprising given that most principals of departmentalized schools (88 percent) reported that they considered teachers' preferences for teaching a certain grade or subject when making teacher assignments, as noted earlier.

  Departmentalized instruction might also improve teacher retention if teaching fewer subjects reduces teachers' workload by allowing them to spend less time overall on planning and attending professional development activities.[28] Departmentalized teachers reported spending about an hour less per week on planning across all the subjects they taught than self-contained teachers and about 8 fewer hours per year attending professional development activities (Exhibit 9).

  Although departmentalized teachers were more satisfied with the subjects they taught and the strategy may have reduced their overall workload, departmentalized teachers were not more satisfied with being a teacher at their school than self-contained teachers. High percentages of both groups (more than 85 percent) reported being satisfied with being a teacher at their school (Exhibit 8).

**Exhibit 8. Teachers' Reported Satisfaction with Teaching**

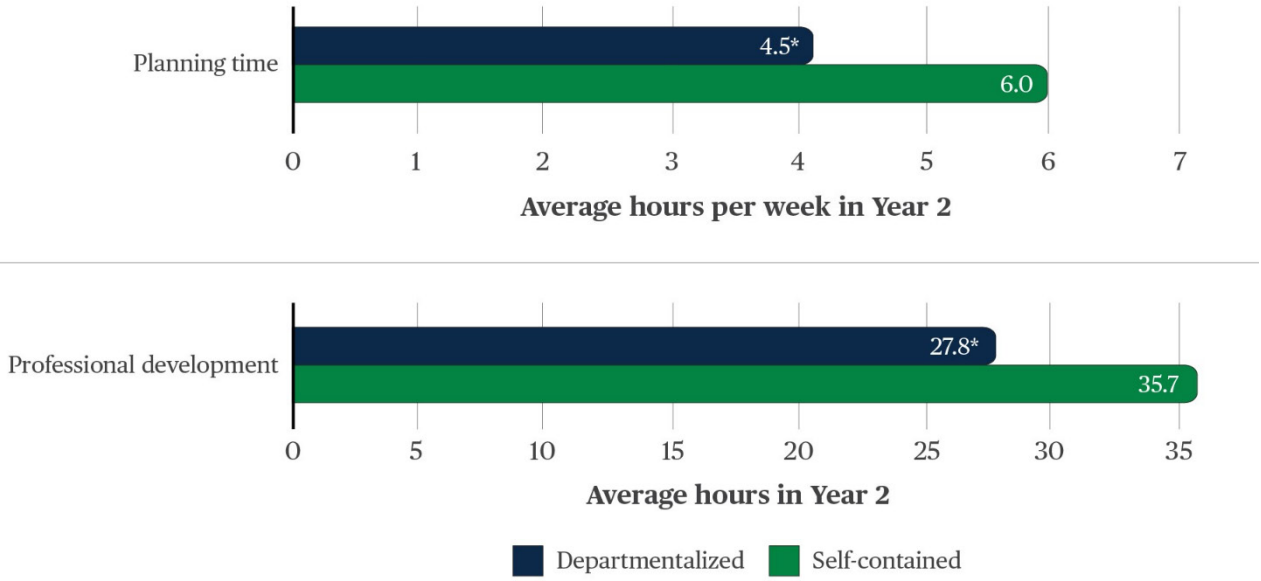



Source: Teacher survey administered in spring 2021, 329–334 teachers.

* Statistically different from self-contained teachers at the 0.05 level.

- ***Departmentalized teachers spent less time meeting with students and parents than self-contained teachers, perhaps due to developing weaker relationships with students—a potential challenge of the strategy.*** Departmentalized instruction could reduce student achievement if teachers experience the potential challenges associated with the approach. In particular, if teachers' relationships with their students are weaker because they have more students, they may spend less time meeting with students and their parents outside of class. This, in turn, could make it harder for departmentalized teachers to identify or understand students' needs and tailor their instruction accordingly.[29] Departmentalized teachers reported spending an average of 5 hours per month meeting with their students outside of the classroom for academic purposes, compared to 7 hours for self-contained teachers (Exhibit 10). Departmentalized teachers also reported meeting with students' parents an average of 2 hours a month, compared to 4 hours for self-contained teachers. Similarly, departmentalized teachers also reported meeting less frequently with a typical student's parents to discuss their child's progress (Appendix Exhibit C.18).

**Exhibit 9. Teachers' Reported Total Planning Time and Professional Development**




Source: Teacher survey administered in spring 2021, 329–334 teachers.

* Statistically different from self-contained teachers at the 0.05 level.

**Exhibit 10. Teachers' Reported Time Spent Meeting with Students and Parents**

Source: Teacher survey administered in spring 2021, 329–332 teachers.

* Statistically different from self-contained teachers at the 0.05 level.

## THE EFFECTS OF DEPARTMENTALIZED INSTRUCTION ON STUDENT ACHIEVEMENT AND TEACHER RETENTION REMAIN UNCLEAR

The successes and challenges schools and teachers experienced implementing departmentalized instruction for this study raise some questions about the ease with which schools can adopt the strategy and whether it is likely to yield the potential benefits. Given its *potential* benefits and the continued urgent need to simultaneously improve student achievement and boost educator retention (Exhibit 1, Box D), more information on the strategy's effectiveness is needed.

- ***Recent studies suggest that students taught by departmentalized teachers may have lower achievement than those taught by self-contained teachers.*** Two studies published since the current study began compared the test scores of students for a given teacher before and after departmentalizing. Both found that those taught by teachers when they were departmentalized had lower math and English language arts achievement.[30] One of these studies found that these negative relationships were more pronounced for English learners, students with low achievement, and students receiving special education services. Neither study examined teacher retention. These studies speculated that their negative findings may be due to departmentalized teachers being less aware of individual students' needs, instructional time lost to student transitions between teachers, and weaker student-teacher relationships. However, only one of the two studies suggested that teachers were, in fact, assigned to the subjects they taught best, which is considered a key component in departmentalized instruction's potential success. In addition, it isn't clear whether either study fully accounted for differences before and after departmentalization that could have explained the findings.
- ***Due in part to the effects of the pandemic, this study could not determine how departmentalized instruction affected student achievement and teacher retention.*** This study planned to compare student achievement and teacher retention in schools that chose to departmentalize instruction with similar schools that did not departmentalize (see Box 1 and Appendix B). This would have provided suggestive evidence of the effectiveness of departmentalized instruction. However, the COVID-19 pandemic disrupted the study's plans for this analysis. Schools closed in March 2020 and student academic assessments for that year were canceled. Even after schools reopened, concerns about the pandemic affected participation in the study. Nine schools that had planned to use departmentalized instruction switched to self-contained instruction, and an additional 15 schools dropped out of the study (Exhibit B.9). Only 22 of the 43 schools used departmentalized instruction for the full two years of the study, resulting in a sample that was too small to reliably examine effectiveness.[31]

**Lessons learned and looking forward**

Departmentalized instruction has become increasingly common in elementary schools. Some experts believe it may lead to improved student achievement, but others have expressed concerns about the benefits for elementary school students and the potential for it to harm these students' academic outcomes.[32] This study was unable to confirm or refute the experts' beliefs. However, it did document implementation challenges and teachers' experiences that raise important questions for elementary schools and districts considering departmentalized instruction.

- **What might school leaders consider when deciding whether to implement departmentalized instruction?** Schools might consider several factors when assessing whether their students and teachers are well-suited for departmentalized instruction. Scheduling support services for English learner students and students receiving special education was a common challenge in study schools, so schools with many of these students may find it particularly difficult to departmentalize instruction. The extent to which departmentalized instruction may improve student achievement depends, in part, on school leaders assigning teachers to the subjects they teach best. Therefore, schools may wish to consider the quality of the data available to assess teachers' relative strengths and whether they can accurately assign teachers to subjects in which they are strongest.

- **What might elementary schools that departmentalize instruction consider doing to address potential challenges?** Schools implementing departmentalized instruction may want to consider adopting strategies to address potential scheduling challenges, promote deeper subject expertise, and foster strong student-teacher relationships. For example:
  - *Schools may want to start planning for departmentalized instruction early, such as in winter of the prior school year.* This may provide enough time to assess data to assign teachers to subjects they teach best, and to develop the schoolwide schedule. Starting early may also give principals time to get input from others, including teachers, administrators, and families, in their school and other elementary schools that have used departmentalized instruction. Districts may consider providing additional training or support to help principals navigate scheduling challenges.
  - *Schools or districts may want to consider providing more subject-specific professional development.* Although one potential benefit of departmentalized instruction is that teachers can receive more professional development in their assigned subjects, that was not the case for departmentalized teachers in this study. Providing more professional development opportunities may allow departmentalized teachers to deepen their expertise in their assigned subjects.
  - *Schools may want to support teachers' relationships with students and parents more intentionally.* Given the reduced time departmentalized teachers spent meeting with students and parents, schools may want to take steps to increase their interactions. For example, schools may ask teachers to reach out to parents regularly and hold office hours after school for students.
- **Should departmentalized instruction continue to be viewed as a promising strategy for improving student achievement and teacher retention?** This study does not provide evidence on the effects of departmentalized instruction, and the existing evidence base is too limited to draw definitive conclusions. More research is needed to understand how departmentalized instruction might affect student achievement and teacher retention.

## ENDNOTES

[1] Duncan and Magnuson 2011.
[2] Simon and Johnson 2015.
[3] Kuhfeld et al. 2022; Bacher-Hicks et al. 2023; Camp et al. 2022.
[4] Core subjects include math, English language arts, science, and social studies.
[5] The study calculated these statistics using data from the 1999–2000 Schools and Staffing Survey and the 2020–2021 National Teacher and Principal Survey from the U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics.
[6] Condie et al. 2014; Fox 2016; Goldhaber et al. 2013.
[7] Chang et al. 2008; McPartland and Braddock 1993.
[8] All schools implementing departmentalized instruction must complete these three key steps. In the design meetings, Public Impact provided school leaders with a packet of resources that covered the three key steps. Public Impact staff also described the four types of departmentalized staffing models, reviewed the trade-offs of each, and helped school leaders use the resources to design their approach to departmentalize instruction. (See Appendix A.2 for more information on the study's implementation support.)
[9] Appendix Section B.5 discusses the samples, data, measures, and analyses used to address each research question. Specifically, Exhibits B.15–B.17 describe the samples, data, measures, and analyses used to address research question 1 on implementing the three key steps of departmentalized instruction, and Exhibit B.18 describes the samples, data, measures, and analyses used to address research question 2 on teachers' experiences.
[10] In a few cases, schools departmentalized across 4th and 5th grades, with teachers teaching students from both grades. The study counted these cases as a single departmentalized grade. In other cases, schools had dual-language and English-only classes within the same grade, and schools could not reassign teachers from one group to the other. The study counted these cases as two separate departmentalized grades.
[11] Departmentalized and self-contained teachers who responded to the teacher survey in spring 2021 also had similar characteristics (Appendix Exhibit B.19).
[12] A teacher team, for example, may include a math teacher, an English language arts teacher, and a teacher who teaches science and social studies.
[13] Each grade could have one or more teams. For example, a grade with four teachers could have two teams in which each team has one teacher who teaches English language arts and social studies and another teacher who teaches math and science. Most (77 percent) of the participating grades in study schools had a single team, and the remaining grades (23 percent) had two or three teams.
[14] Value-added scores are a measure of teachers' estimated contribution to student achievement growth. Districts frequently use them as a measure of teacher effectiveness. See Appendix Section B for information on how this study calculated value-added scores.
[15] Appendix Section B provides more information about the interview data collection, coding, and analyses.
[16] The study team used an approach to assessing teacher assignments that recognizes that schools have different priorities. For example, a school that prioritizes English language arts achievement might assign its teacher with the highest English language arts value-added score to teach English language arts, even if the total value-added scores across math and English language arts could be increased by the teacher being assigned to teach math. See Appendix Section B for more details on how this study assessed teacher assignments.
[17] The study identified departmentalized teachers in the survey data by their self-reported status (departmentalized or self-contained) as of the end of Year 2.

[18] Self-contained instruction was a recommended approach at the time for containing the virus by reducing the number of contacts between students and teachers (U.S. Department of Education 2021).

[19] Studies that have examined the relationship between departmentalized instruction and student achievement generally find that the two are unrelated or negatively related (Fryer 2018; McGrath and Rust 2002; Taylor-Buckner 2014; Bastian and Fortner 2018; Hwang and Kisida 2022; Baroody 2017). By contrast, the only study that examined the relationship between departmentalized instruction and teacher retention found a positive relationship (Bastian et al. 2023). However, each study has limitations. Fryer (2018) randomly assigned schools in Houston by lottery to switch to departmentalized instruction or maintain self-contained instruction. Random assignment should create two groups of schools that are similar, so any differences in student achievement between the two can provide strong evidence on the effects of departmentalized instruction. However, teachers were not notified of the switch to departmentalized instruction until they returned to school after summer break, giving them no time to prepare. Thus, the study might not shed light on the potential effects of departmentalized instruction if implemented with adequate preparation time or other supports. Bastian and Fortner (2018), Bastian et al. (2023), and Hwang and Kisida (2022) used data across multiple years to compare a given teacher's effectiveness or retention before and after departmentalizing. These studies were each based on data from a single state and may not have fully accounted for other changes occurring when teachers departmentalized. McGrath and Rust (2002), Taylor-Buckner (2014), and Baroody (2017) each examined the relationship between departmentalized instruction and student achievement by comparing schools or teachers that were already departmentalized to those that were not. These studies also may not have fully accounted for differences between the schools that departmentalized and those that did not. None of the studies examined how schools implemented departmentalized instruction.

[20] Under the original plan, the study would have randomly assigned participating schools by lottery to implement departmentalized instruction or maintain self-contained instruction. This approach would have ensured that schools implementing departmentalized instruction and those maintaining self-contained instruction were similar, on average, before the study began. Comparing outcomes of departmentalized and self-contained schools would have allowed the study to assess the effects of departmentalized instruction on student achievement and teacher retention. The study team contacted more than 500 school districts and conducted screening calls with over 250 during the 2017–2018 school year. However, too few schools were willing to participate in the random assignment study to allow the study to reliably examine the effects of departmentalized instruction. The study then shifted to a revised approach, where participating schools could decide whether to continue using self-contained instruction or switch to departmentalized instruction in 4th and 5th grades. The study team was able to recruit enough schools (90) with this revised approach, but the pandemic affected many schools' decisions to continue participating in the study and implementing departmentalized instruction. This limited the ultimate sample size for the analysis and the reliability of the findings.

[21] As an additional benchmark, the study also compared the sample of departmentalized teachers to a national sample of 4th- and 5th-grade teachers using self-contained instruction in the 2020–2021 school year. This comparison used data from the Institute of Education Sciences' National Teacher and Principal Survey (see Appendix Exhibit B.18).

[22] The term "teacher team" refers to the set of core subject teachers who teach the same group of students. For example, a teacher team may include a math teacher, an English language arts teacher, and a teacher who teaches science and social studies. Each grade could have one or more teams. For example, a grade with four teachers could have two teams in which each team has one teacher who teaches English language arts and social studies and another teacher who teaches math and science. Most (77 percent) of the participating grades in study schools had a single team, and the remaining grades (23 percent) had two or three teams.

[23] Teams with an odd number of teachers departmentalizing had fewer staffing model options than teams with an even number. However, regardless of whether they had an even or odd number of teachers departmentalizing, teacher teams typically chose a model that had a moderate level of specialization (Appendix Exhibit C.1). Teams with an odd number of teachers departmentalizing could have chosen the Math or English Language Arts Focus model with a moderate level of specialization or the Homeroom model with a low level of specialization. All these teams chose to use the Math and English Language Arts focus model. Teacher teams with an even number of teachers could have chosen the Homeroom model, Paired Subjects model, or Math or English Language Arts Focus model. Additionally, teacher teams with a number of teachers divisible by four could choose from all four models, including the Full Specialization model.

[24] To assess whether teachers were assigned to subjects aligned with their relative strengths, the study team calculated the percentage of departmentalized grades in which reassigning math and English language arts teachers to the other subject would result in higher value-added in at least one of the subjects without lowering value-added in the other subject. This analysis required value-added scores for all teachers in a departmentalized grade who taught math or English language arts. Of the 73 departmentalized grades, 42 (56 percent) had the necessary value-added scores. Therefore, the study was unable to assess the assignments for 44 percent of the departmentalized grades. See Appendix Section B for more details on how this study assessed teacher assignments.

[25] In addition, departmentalized teachers who were more specialized spent less total time planning for their subjects than departmentalized teachers who were less specialized. Departmentalized teachers who taught just one subject spent approximately 3 hours individually planning each week, whereas departmentalized teachers who taught two or three subjects spent approximately 5 hours individually planning across all their subjects (Exhibit C.12).

[26] Although departmentalized instruction may improve instruction, one concern is that it might reduce instructional time because schedules need to build in additional time for students to transition between classrooms and teachers. Instructional time could also be lost if students lose focus before or after these transitions. Departmentalized and self-contained teachers reported instructing students for a similar amount time in three of the four core subjects. However, departmentalized teachers reported spending less time instructing students in English language arts than self-contained teachers (5.2 versus 6.8 hours on average per week, Appendix Exhibit C.10). Whether this was in part a result of time lost to students transitioning between classrooms, though, is unclear. Departmentalized and self-contained teachers reported students spent a similar amount of time, about 14 minutes per day, transitioning between classes. Other reasons for this difference in instructional time could be lost time due to students settling in at the beginning of class, teachers having less flexibility to shift time between subjects, or principals of departmentalized schools scheduling less time for English language arts instruction.

[27] Unlike the amount of subject-specific planning time, the amount of subject-specific professional development did not increase with teacher specialization. Departmentalized teachers who taught just one subject reported participating in similar average hours of professional development in the subject they taught as departmentalized teachers who taught two or three subjects (Exhibit C.14).

[28] For example, Strohl et al. (2014) note that "departmentalized teachers plan for fewer subjects than self-contained teachers, decreasing the amount of time spent preparing and completing other non-teaching tasks, which was shown to decrease stress and increase job satisfaction." Their study finds that departmentalized teachers "experienced higher morale, lighter workload, and increased overall job satisfaction in comparison to self-contained teachers in the same school."

[29] To explore how departmentalized instruction may affect teachers' relationships with students and their parents, the study examined how much time departmentalized and self-contained teachers met with them. The study did not have a direct measure of student-teacher relationships.

[30] Bastian and Fortner 2020; Hwang and Kisida 2022. Bastian and Fortner examined teachers who switched from self-contained to departmentalized instruction or vice-versa in North Carolina, from 2012–2016. The study compared the achievement of students taught by these teachers when they were "generalists" (taught all four core subjects) to that of students taught by these same teachers when they were "specialists" (taught up to two of the four core subjects). A strength of this design is that because it compares the same teachers using both approaches to instruction, any differences in outcomes between departmentalized and self-contained classrooms are not due to differences between teachers. However, a limitation of this design is that the decision for a teacher to switch from generalist to specialist may be influenced by other factors that also influence their effectiveness in a given school year. For example, a school may decide to switch a teacher to a specialist after the teacher has gained experience and become highly effective in a particular subject, so comparisons of their students' achievement before and after the switch might overstate the benefits of specialization. Unlike their findings for math and reading achievement, Bastian and Fortner found a positive relationship between departmentalized instruction and science achievement. Hwang and Kisida used the same approach with data from Indiana from 2010–2017.

[31] Achievement in the departmentalized schools would have to differ from that in self-contained schools by more than a year's worth of learning to have a highly likelihood of being detected in this study– a far greater difference than is reasonable to expect from this kind of staffing change.

[32] Chang et al. 2008; McPartland and Braddock 1993.

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