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"Double-dose" English as a strategy for improving adolescent literacy: Total effect and mediated effect through classroom peer ability change



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ABSTRACT

"Double-dose" coursework has become an increasingly popular strategy to assist low-performing students succeed in academic coursework. Chicago implemented a "double-dose" English policy in 2003. This policy not only provided additional instructional time to struggling readers, but also intensified skill-based sorting in English classes. I use policy-induced variation to infer the policy effect on students' reading achievement and the effect mediated by classroom peer ability change. Results show very weak, but positive effects of taking double-dose English for students with average skills. However, potential benefits of doubled instructional time are likely to be offset by negative effects of declines in classroom peer ability. Students with very weak skills experienced minimal change in classroom peer ability, and two-period coursework is likely to benefit these students.

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1. Introduction

Advancing the literacy skills of adolescents has been a pressing issue on the nation's education policy agenda for the past decade. US students' literacy skills lag behind particularly during secondary school years. According to the Program for International Student Assessment (PISA) although U.S. students are among the highest performing students in the world in 4th grade, their performance is lower in 8th grade and ranks among the lowest by Grade 10 (Carnegie Council on Advancing Literacy, 2010). The National Assessment of Education Progress (NAEP) also shows that the trend in reading scores of 13 and 14 year olds has been relatively flat for the last four decades, while scores of 9 year old students have risen and reached their highest point ever in 2008 (Rampey et al., 2009).

Past policies primarily focused on improving literacy skills during the early years; however, a lack of improvement at the secondary level has raised concern that not enough effort has been made to improve literacy skills among adolescents (e.g., the National Governors Association, 2005). Researchers have also pointed out that even excellent third-grade readers will fall behind in academic tasks in later grades if the teaching of reading is neglected in secondary grade levels (Biancarosa and Snow, 2006).

Improving adolescent literacy skills is particularly important in this current era, calling for a "college preparatory curriculum for all". Most recently, the Common Core Standards attempts to strengthen an academic curriculum across the board. With increasingly demanding high-school coursework, struggling readers are likely to face even greater challenges as they progress grade levels; poor reading skills can prevent them from mastering content knowledge in other academic subjects, which involve difficult texts with complex narratives and increasingly difficult vocabulary.

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Improving literacy is crucial in urban school districts as many students enter high school with literacy skills well below grade level, and they often struggle to navigate through academic coursework and graduate from high school (Joftus and Maddox-Dolan, 2003). In Chicago, where this study is based, nearly 35% of entering 9th graders in neighborhood high school have literacy skills below the 25th national percentile. Each year, half of students fail at least one core course in 9th grade, and nearly 30–40% of students leave high school before graduation.¹

To assist students with weak academic skills, a popular district-wide strategy today is to provide "double-dose" coursework, in which all students are required to take college preparatory coursework, but students with weak skills are provided with extended instructional time. Currently, programs like "double-dose" are in place in nearly half of US urban districts (Council of Great City Schools, 2009). Chicago adopted a double-dose policy in 2003, which required all 9th graders with reading skills below the national median (i.e., the 50th percentile) to enroll in a support English course in addition to English I. Using the cut-score based assignment rule, this study employs an RDD design to examine the effect of double-dose English on student's reading achievement.

One critical aspect of this policy is that it induced skill-based sorting on the basis of the cut-score as schools tended to put students with above average skills into the regular English class, while students with below-average skills took double-dose English together. As discussed below, the degree to which schools complied with the cut-score based assignment and the degree to which schools created skill-based sorting on the basis of the cut-score varied considerably across schools. Taking advantage of this between-school variability in implementation, this study applies an RDD design to estimate the independent effect of the double-dose English and classroom peer ability.

However, results of the RDD analysis are not likely to be generalizable to students away from the cut-score. Thus, to supplement the RDD analysis, this study also conducts a difference-in-differences (DID) analysis, using schools unaffected by the policy as a comparison group, to see whether the policy effect differed by students' initial skills. As discussed below, some schools were not affected by the policy because they had already offered supplemental English instruction to many of their students prior to the policy, and their practice did not change when the policy was introduced. In this analysis, we are particularly interested in understanding the effect on very low ability students who are often the target of this type of supplemental instruction. Thus, the DID analysis compares the outcomes of students in the bottom two quartiles between schools that are affected by the policy and schools not affected by the policy.

2. Prior research on extended instructional time and peer academic composition effects

Historically, a double-dose strategy was used in Catholic high schools where students with weak skills were enrolled in two periods of English or math. This was often combined with other strategies, such as slower-paced instruction and tutoring activities, intended to help underperforming students succeed in a college-preparatory curriculum (Bryk et al., 1993). Bryk et al. (1993) reported some success in these efforts; in schools using double-dose coursework, the number of students in need of remediation halved by the 11th grade and almost all students reached the college-preparatory level by their senior year.

While the above study does not separate the effect of instructional time from the effect of other instructional supports, other research shows the benefit of increased instructional time to learning. This includes research on summer learning loss (Cooper et al., 1996), the impact of snow days (Marcotte and Hemelt, 2008), the association between charter school effectiveness and instructional time (Dobbie and Fryer, 2011; Hoxby et al., 2009), and other studies linking student achievement to hours spent learning (Lavy, 2010; Fitzpatrick et al., 2011) or instructional time (Anderson, 1984; Millot, 1995). However, another strand of research suggests that extending instructional time alone may not necessarily lead to more learning. For example, Goodman (2012) showed little impact of snow days on achievement, Angrist et al. (2013) showed little relationship between instructional time and charter school effectiveness, and Checkoway et al. (2011) showed little effect of an intervention that substantially increased schools' instructional time.

Differences in the effect of extended instructional time may be explained by differences in how well the time is spent for learning, how well schools implement a policy of expanding instructional time, and/or alternative conditions if extended time is not provided. Rivkin and Schiman (2013) suggest that the benefit of extended instructional time is likely to depend on the quality of instruction and classroom learning environment, and the benefit of extended instructional time also exhibits diminishing returns. Thus, this body of research suggests that simply increasing instructional time may provide no guarantee of better student outcomes if such time is not well spent.

The approach taken in Chicago is different from an approach that adds overall instructional time to each school day or extends school days, which likely requires additional resources, school staff, and substantial change for schools and teachers to implement. In Chicago, an additional period of support instruction was provided to struggling students without impacting the total number of courses these students need to take to graduate, but support coursework replaced elective coursework (Cortes et al., forthcoming). Thus, this study adds to the current literature on providing an extra period of literacy instruction for struggling students without extending overall school hours or school days.

Importantly, few studies have examined the effectiveness and possible unintended consequences of the current policy of providing double-dose coursework to a large number of struggling students in large urban high schools. As this study

¹ Graduation rate in Chicago increased considerably over time for the last 15 years from 47% in 1999 to 69% in 2014.

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