



Are all schools created equal? Learning environments in small and large public high schools in New York City[☆]



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ARTICLE INFO

Article history:

Received 16 June 2014

Revised 8 March 2016

Accepted 16 March 2016

Available online 26 March 2016

Keywords:

Small schools

Learning environment

School climate

New small and old small schools

ABSTRACT

Over the past two decades, high school reform has been characterized by a belief that “smaller is better.” Much of the expected academic benefit from attending small schools has been credited to their better learning environments. There is little empirical support for this claim, however, and the existing research fails to provide causal evidence. Moreover, recent studies in New York City have shown that students attending *newly created* small schools do better academically relative to students attending both large and *older* established small schools. Are these differences in academic outcomes also mirrored by differences in learning environments? In this paper, we address this question by exploring the impact of attending large compared to small high schools on students’ learning environments, considering the differences between small high schools formed in two different eras with different missions and resources. We use a unique data set of school and student-level data from New York City public high school students entering 9th grade in 2008–09 and 2009–10 to examine students’ attitudes about school learning environments along three dimensions: interpersonal relationships, academic expectations and support, and social behavior and safety. While OLS results show that students attending small schools (new and old) perceive better learning environments, instrumenting for selection into these schools challenges those results. In general, it is not clear that small schools provide better learning environments than large schools. Our results challenge the conventional wisdom that the higher academic performance of students in small schools is driven by a better learning environment.

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1. Introduction

Champions of small high schools see them as an effective way to improve student achievement. The Gates Foundation, a strong supporter of small schools, initially based most of its funding for education on the belief

that the “new three Rs” (rigor, relevance, and relationships) could best flourish in small environments (Kovacs, 2011). Moreover, in the last decade nearly every major urban district in the US implemented reforms to open new small high schools. The existing research supports claims of advocates and reformers: students in small schools accumulate more credits, receive higher test scores, and graduate at higher rates than comparable students in large schools (Bloom & Unterman, 2014; Schwartz, Stiefel, & Wiswall, 2013).

Behind the link between school size and academic outcomes is the belief that small schools provide a better

[☆] We thank Menbere Shiferaw for excellent research assistance and the New York City Department of Education for providing necessary data and support. We also thank Jessica Boccardo for her efforts on an earlier version of this paper. All conclusions are our own.

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learning environment than large schools, promoting safety, motivation, and a sense of connectedness that fosters student learning. A recent study of small high schools in New York City (NYC) concludes that much of the academic benefit from small schools derives from the academic rigor and better personal relationships in these schools (Bloom & Unterman, 2013). These findings are, however, based on interviews and focus groups from the most effective new small schools in NYC. Overall, aside from a few other correlational studies, there is little empirical evidence showing that small schools lead to better learning environments.

New evidence indicates that much of the academic advantage attributed to school size in NYC is driven by differences in the era in which small schools were formed. “Old” small schools, which opened prior to the reforms of the last decade, were charged with helping students stay in school. “New” small schools, which opened in 2003 or after, were provided with a bundle of supports and tasked with maintaining high academic standards.¹ Recent studies have found that students in new small schools perform better than those in large schools, but students in old small schools do not fare better academically than their counterparts in large schools (Kahne, Sporte, & Torre, 2006; Schwartz et al., 2013.) Are the better academic outcomes experienced in new small schools rather than in older small schools mirrored in their learning environment? Or does this academic excellence come at the expense of a nurturing and supportive environment, as suggested recently in a study of small school performance in Chicago (Barrow, Schanzenbach, & Claessens, 2015)?

We examine these questions by studying the differences in perceptions of learning environments for students attending large schools and old and new small schools in NYC. To our knowledge, this is the first attempt to address whether learning environments differ for small and large high schools using a rigorous research design that addresses the endogenous selection of students into different schools.

In this paper we examine three dimensions of the learning environment that are commonly assumed to be affected by school size: interpersonal relationships, academic expectations and support, and social behavior and safety (Brookover et al., 1979; Cotton, 1996; Gregory & Smith, 1987; Leithwood & Jantzi, 2009; Stolp & Smith, 1995). We use the NYC survey of student perceptions of their learning environments, the largest such student survey ever conducted in the US, which provides unusually rich information about how students experience school. Started in 2007, the survey asks a number of detailed questions on each of the three learning environment aspects. Moreover, as we discuss below, the survey data for NYC has been found to have high internal consistency and strongly correlates with external measures of learning environment (Rockoff & Speroni 2008, Charbonneau & Van Ryzin, 2012, The Research Alliance for NYC Schools, 2013). We combine the data on learning environment with demo-

graphic and academic records for each student and school-level data on school resources and characteristics from the NYC Department of Education.

Our empirical approach recognizes that student reports of the learning environment at their high school may be subject to important biases as student perceptions may reflect the past schooling experiences of the student and the particular kinds of students who attend these schools. We address the first source of bias by using a kind of “value-added” model that includes the student’s perception of his or her school’s learning environment in 8th grade, in order to eliminate fixed student-level factors influencing perceptions and thereby isolate the high school-level influences. We address the second source of bias by including a set of student level control variables and using an instrumental variable strategy to instrument for the type of high school attended.

Our use of instrumental variables for high school attended is motivated by the concern that there are some characteristics, unobserved to the researcher, which drive students to choose certain types of schools, and that are also related to how they experience their learning environment. For example, do certain schools cause students to feel a high sense of belonging and safety because of their particular learning environment or are these schools just better at attracting students who are more likely to feel connected and safe at *any* school? Ideally, randomly assigning students to high schools and then comparing their perceptions would provide unbiased estimates of each school’s learning environment. In the absence of random assignment, we turn to instruments that affect school choice but are plausibly uncorrelated with a student’s perceptions of the school environment.

Our instrumental variable strategy uses each student’s 8th grade residence to instrument for school choice. Since high schools of various sizes are not evenly distributed across the city, and students who live in the immediate vicinity of a small high school (especially relative to a large school) are more likely to attend a small school, we use as instruments the distance between the nearest small school and large school and the student’s home. Motivating our use of distance as an instrumental variable, the literature on school choice consistently finds that distance of a school relative to a student’s home residence is an important variable for students and parents in their choice of school (Burgess & Briggs, 2010; Hastings, Kane, & Staiger, 2006; Saporito & Lareau, 1999; Schneider & Buckley, 2002). In previous work using NYC data, we show that distance strongly predicts actual small school attendance, even after conditioning on student characteristics. In this paper, we also present several additional analyses that support the use of distance as an instrument for attending a small school.²

¹ In this paper, we refer to small schools formed pre-2003 as “old” and small schools formed in 2003 or after as “new,” but these labels should be understood to represent small schools with different missions and resources. We expand on these distinctions later in the paper.

² A similar instrumental variables framework has been used in an educational evaluation of Chicago schools (Cullen et al., 2005), an evaluation of small schools (Barrow et al., 2010) and charter schools (Booker et al., 2011) in Chicago, and an examination of the effect of college attendance on earnings (Card, 1995) and on health behaviors (Currie & Moretti, 2003). As this prior research has demonstrated in a variety of contexts, the likelihood of attending a school decreases as the distance to

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