



ELSEVIER

Contents lists available at [SciVerse ScienceDirect](#)

Economics of Education Review

journal homepage: www.elsevier.com/locate/econedurev

The effectiveness of extended day programs: Evidence from a randomized field experiment in the Netherlands[☆]

Erik Meyer^{*}, Chris Van Klaveren

Maastricht University, Top Institute for Evidence Based Education Research (TIER), P.O. Box 616, 6200 MD Maastricht, The Netherlands

ARTICLE INFO

Article history:

Received 31 August 2012

Received in revised form 3 April 2013

Accepted 15 April 2013

JEL classification:

I21

Keywords:

Extended day

Increased instructional time

Random assignment

Field experiment

ABSTRACT

Policies that aim at improving student achievement frequently increase instructional time, for example by means of an extended day program. There is, however, hardly any evidence that these programs are effective, and the few studies that allow causal inference indicate that we should expect neutral to small effects of such programs. This study conducts a randomized field experiment to estimate the effect of an extended day program in seven Dutch elementary schools on math and language achievement. The empirical results show that this three-month program had no significant effect on math or language achievement.

© 2013 Elsevier Ltd. All rights reserved.

1. Introduction

International comparative studies on student achievement, such as the OECD's *Programme for International Student Assessment* (PISA; OECD, 1999), are frequently designed to give governments insights into the relative performance of their education systems. Since today's students are tomorrow's labor force, such comparisons potentially offer a glimpse into a country's competitive position in tomorrow's knowledge-driven global economy. Under increasing pressure to compete internationally, governments worldwide are enacting policies to improve student achievement, especially in core subjects, such as math and language.

While not always explicitly mandated by these policies, instructional time allocated to core subjects is frequently

increased in order to improve achievement (Levin & Tsang, 1987). Well known examples of such policies are the *No Child Left Behind* act in the US (Bush, 2001), the *Future for Education and Care* program¹ in Germany (see section 'Development of All-Day School' in Freitag & Schlicht, 2009), and the *Extended School Times* project² in the Netherlands (OCW, 2009).

The empirical literature on the effects of extended school days on student achievement can be divided into three main categories. First of all, there are studies that relate instructional time differences to differences in student achievement (e.g. Fitzpatrick, Grissmer, & Hastedt, 2011; Lavy, 2010). Second, there are studies that exploit policy changes to examine how student achievement is affected by changes in instructional time. Bellei (2009), for instance, uses a difference-in-difference strategy to identify the effect of increasing instructional time from half a school day to a full school day on math and language achievement

[☆] We are grateful to Wim Groot, Henriëtte Maassen van den Brink, Hessel Oosterbeek, Erik Plug, Nienke Ruijs, and other colleagues for their comments and suggestions regarding earlier drafts of this paper.

^{*} Corresponding author. Tel.: +31 433884466.

E-mail addresses: e.meyer@maastrichtuniversity.nl (E. Meyer), cp.vanklaveren@maastrichtuniversity.nl (C. Van Klaveren).

¹ Provides funding for all-day schools, 'Ganztagsschulen'.

² Provides funds for summer schools, weekend schools and extended day programs.

for high school students in Chile. Bellei's (2009) results indicate that the policy had a small positive effect on language achievement. The estimated effect on math achievement, while also positive, was not robust to the specification of different control groups. Third, there are studies that evaluate the effect of specific programs that increase instructional time on student achievement. Programs can be extended day (or year) programs or out-of-school-time programs. Extended day programs are usually organized by the school, using school facilities, and during (extended) school hours. Out-of-school-time programs take place outside of school hours, and are commonly after-school programs or summer school programs. Furthermore, we can distinguish between randomized and non-randomized studies. For example, Zimmer, Hamilton, and Christina (2010) report on the evaluation of two out-of-school tutoring programs in Pittsburgh public schools; a supplemental education services (SES) program and an educational assistance program (EAP). Zimmer et al. (2010) use a fixed effects model to estimate the effect of these programs on math and reading achievement for participants. Their results indicate that participation in both programs or only in SES has a positive effect on math achievement, but not on reading. Participation in EAP results in a small gain for both math and reading.

Zimmer et al. (2010) note that, ideally, a randomized design would be used to examine program effects on achievement. Cook (2002) emphasizes that although randomized experiments provide both a more efficient and unbiased estimate of the causal program effect than quasi-experiments, educational evaluators rarely use them. Indeed, reviews indicate that the literature on extended day programs is plagued by a lack of peer-reviewed studies and that many studies do not properly control for selection and composition effects, such that the reported estimates may be biased (Cooper, Charlton, Valentine, & Muhlenbruck, 2000; Lauer et al., 2006; Scott-Little, Hamann, & Jurs, 2002). In the decade since Cook's (2002) examination however, policies seem to have encouraged more rigorous evaluations, as an increasing number of programs is evaluated using a research design that focuses on measuring the causal program effect, such as randomized experiments, natural experiments, and regression-discontinuity designs. It is worth discussing the results of James-Burdumy et al. (2005) and Robin, Frede, and Barnett (2006) in more detail because the research question, sample population, research design, and outcome measures of these studies are similar to those of the current study. Both studies conduct a randomized experiment to estimate the effects of increased instructional time on academic outcomes for the US. The first is a final report on the evaluation of the 21st Century Community Learning Centers (21st CCLC) program (James-Burdumy et al., 2005), where impacts in grades K through 6 are estimated. The second is a working paper that estimates the effect of a full-day compared to half-day preschool program (Robin et al., 2006; also available in Robin, 2005).

James-Burdumy et al. (2005) randomly assigned 1748 elementary school students at 26 centers to a treatment and a control group. Treatment students participated in the 21st Century program, while control students could not participate in the 21st Century program but were

otherwise free to participate in other after-school programs. During their two year evaluation period, centers were open 3 h a day, four or five days a week, and treatment students spent an average of 81 days at the center within the two year period. Students spent 1 h on homework, one hour on another academic activity, and 1 h on recreational or cultural activities. James-Burdumy et al. estimated intent-to-treat (ITT) impacts, where participants assigned to the program were compared to those assigned to the control group (regardless of actual participation), as well as the local average treatment effect (LATE) to control for non-participation in the program group (8%) and cross-over from the control to program group (16%). The ITT estimates were similar to the LATE estimates, and both estimates showed that neither the effects on teacher assigned grades in math and English, nor on standardized reading test scores were significant. The direction of effects differed by subject, and the effect sizes seemed to be small, even though they were not reported and could not be calculated from information that was reported. Subgroup estimates of ITT impacts suggested that the program may have improved English grades (but not reading test scores) for students with low initial reading test scores. For reasons that were not specified, subgroup estimates of LATE were not reported such that it remains unknown how these estimates were affected by non-participation and cross-over. Summarizing, the results suggest that the 21st Century Community Learning Centers program did not significantly impact academic outcomes at the participating centers.

Robin et al. (2006) evaluated a preschool program with both an extended day and an extended year. They followed two cohorts of students, starting the program in 1999 and in 2000, during preschool, kindergarten, and first grade (only the 1999 cohort). Admission to the extended day program was based on a lottery: 77 students were randomly assigned to the program group (i.e. full-day preschool), and 217 students to the control group (i.e. half-day preschool). The full-day program operated for 8 h a day, five days a week, ten months a year, while the half-day programs operated for two and a half to 3 h a day, five days a week, nine months a year. Both groups used the High/Scope curriculum (described in Schweinhart, 2003), best known from the Perry preschool study. Robin et al. (2006) used a growth curve model to estimate treatment effects on growth in test scores over time, and OLS to estimate treatment-control differences at the end of different grade levels. Using the growth curve model, they found that students gained 0.40 standard score points a month in vocabulary score on average, and that program students gained an additional 0.21 standard score points a month compared to control students (i.e. a treatment by time interaction effect). The average gain in math score was estimated at 0.35 standard score points a month, and program students gained an additional 0.35 standard score points a month. In addition to the growth curve model, program effects were estimated cross-sectionally, at the end of each year, by means of OLS. They controlled for pre-program baseline test scores, as well as a number of demographic characteristics. At the end of each year, the program had a significant effect on vocabulary score, and effect sizes increased from 0.12 standard

Download English Version:

<https://daneshyari.com/en/article/6840913>

Download Persian Version:

<https://daneshyari.com/article/6840913>

[Daneshyari.com](https://daneshyari.com)