



WWC Single Study Review

A review of the design and summary of findings for an individual study



March 2016

WWC Review of the Report “Association of a Full-Day vs Part-Day Preschool Intervention With School Readiness, Attendance, and Parent Involvement”^{1,2}

The findings from this review do not reflect the full body of research evidence on full-day preschool.

What is this study about?

The study authors examined whether students enrolled in a full-day preschool program scored higher on school readiness measures and had higher attendance rates than students enrolled in a part-day version of the same program. Both the full-day and part-day programs were part of the Midwest Child-Parent Center (CPC) Education Program in Chicago, a school-based program that provides education and family services.

This study focused on nearly 1,000 students enrolled in 11 schools that implemented both the full-day and part-day versions of the CPC program. Students in both the full-day and part-day programs attended school 5 days a week, but full-day students attended for 7 hours a day and part-day students attended for 2.75–3 hours a day. The principal at each school worked with the researchers to select students for full-day or part-day preschool, prioritizing full-day preschool enrollment for (1) children who were age 4 (as opposed to age 3); (2) families with a preference for full-day preschool based on logistical issues such as employment, schooling, transportation, or alternative day care options; and (3) families with children who had greater needs.

Study authors assessed the effectiveness of full-day preschool relative to part-day preschool by comparing student attendance and performance on school readiness measures of literacy, oral language, math, cognitive development, social-emotional development, and physical activity.³

WWC Rating

The research described in this report does not meet WWC group design standards

The study used a quasi-experimental design to compare students in full-day and part-day preschool programs in the same school. The analysis included statistical adjustments for demographic and achievement differences in the samples at baseline. However, the children in full-day preschool were 4.3 years old on average, and the children in part-day programs were 3.8 years old on average. Older students might have higher test scores than younger students even without the intervention, so the differences in their outcomes might represent the influence of both the intervention and their differences in age.

The WWC does not consider groups to be similar at baseline if a difference on a key characteristic is more than 0.25 standard deviations. Age is a key characteristic of participants in early childhood education programs, and the difference in age in this study is 5.8 months, or 0.96 standard deviations. Because the intervention and comparison groups are dissimilar in age, this study does not meet WWC group design standards.

What did the study find?

None of the analyses presented in this study meet WWC group design standards and therefore, the study findings are not presented in this report.⁴

Features of Preschools in the Midwest Child-Parent Center (CPC) Education Program

The CPC is a school-based public program that combines comprehensive education and family services, starting in preschool. The program operates in or near elementary schools and provides education, health, and social services to enrollees and their families. The CPC emphasizes the acquisition of basic skills in language and literacy, math, and socio-emotional development. The program also involves parents in preschool activities and provides them with education opportunities, home visits, and health and nutrition services.

Prior to 2012, the program had only been implemented with part-day preschool in ten schools in Chicago. In 2012, the program was expanded to six additional schools in Chicago and to schools in four other school districts. The expansion also added full-day preschool in 11 of the 16 Chicago sites. Full-day students attended preschool for 7 hours each day, whereas part-day students attended preschool for 2.75–3 hours each day.

In addition to the scale-up, the CPC also updated its practices related to teaching and serving families. The program previously emphasized instruction by certified teachers in small classes, collaborative leadership by the head teacher and family coordinators, and parent involvement and engagement. The update of the CPC in 2012 strengthened the focus on the original emphases and added three more principles: an aligned curriculum across grades, continuity and stability in the transitions across grades, and professional development.

Endnotes

¹ Reynolds, A. J., Richardson, B. A., Hayakawa, M., Lease, E. M., Warner-Richter, M., Englund, M. M., Ou, S. R., & Sullivan, M. (2014). Association of a full-day vs part-day preschool intervention with school readiness, attendance, and parent involvement. *JAMA*, *312*(20), 2126–2134.

² Single study reviews examine evidence published in a study (supplemented, if necessary, by information obtained directly from the authors) to assess whether the study design meets WWC group design standards and summarize the study findings following WWC conventions for reporting evidence on effectiveness. This study was reviewed using the single study review protocol (version 2.0). For additional information on outcome domains and baseline equivalence requirements, the review also referred to the Early Childhood Education review protocol (version 3.0). A quick review of this study was released in February 2015, and a revised version of the quick review was released in September 2015. This report is the follow-up review that replaces the assessment in the revised quick review. The WWC rating has not changed. The WWC rating applies only to the study outcomes that were eligible for review under the single study review protocol.

³ There were five outcomes included in the study that are not eligible for review, including two measures based on a composite score from the Teaching Strategies GOLD Assessment System and three measures of parental participation. The composite score is not eligible because no reliability information was presented. Measures of parental participation are not eligible because they are not child outcomes.

⁴ The study did not measure the effectiveness of the intervention for any subgroups. The WWC does not review or request information on findings not explicitly described in the manuscript.

Recommended Citation

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Glossary of Terms

Attrition	Attrition occurs when an outcome variable is not available for all participants initially assigned to the intervention and comparison groups. The WWC considers the total attrition rate and the difference in attrition rates across groups within a study.
Clustering adjustment	If intervention assignment is made at a cluster level and the analysis is conducted at the student level, the WWC will adjust the statistical significance to account for this mismatch, if necessary.
Confounding factor	A confounding factor is a component of a study that is completely aligned with one of the study conditions, making it impossible to separate how much of the observed effect was due to the intervention and how much was due to the factor.
Design	The design of a study is the method by which intervention and comparison groups were assigned.
Domain	A domain is a group of closely related outcomes.
Effect size	The effect size is a measure of the magnitude of an effect. The WWC uses a standardized measure to facilitate comparisons across studies and outcomes.
Eligibility	A study is eligible for review if it falls within the scope of the review protocol and uses either an experimental or matched comparison group design.
Equivalence	A demonstration that the analytic sample groups are similar on observed characteristics defined in the review area protocol.
Improvement index	Along a percentile distribution of individuals, the improvement index represents the gain or loss of the average individual due to the intervention. As the average individual starts at the 50th percentile, the measure ranges from -50 to +50.
Multiple comparison adjustment	When a study includes multiple outcomes or comparison groups, the WWC will adjust the statistical significance to account for the multiple comparisons, if necessary.
Quasi-experimental design (QED)	A quasi-experimental design (QED) is a research design in which study participants are assigned to intervention and comparison groups through a process that is not random.
Randomized controlled trial (RCT)	A randomized controlled trial (RCT) is an experiment in which eligible study participants are randomly assigned to intervention and comparison groups.
Single-case design (SCD)	A research approach in which an outcome variable is measured repeatedly within and across different conditions that are defined by the presence or absence of an intervention.
Standard deviation	The standard deviation of a measure shows how much variation exists across observations in the sample. A low standard deviation indicates that the observations in the sample tend to be very close to the mean; a high standard deviation indicates that the observations in the sample are spread out over a large range of values.
Statistical significance	Statistical significance is the probability that the difference between groups is a result of chance rather than a real difference between the groups. The WWC labels a finding statistically significant if the likelihood that the difference is due to chance is less than 5% ($p < .05$).
Substantively important	A substantively important finding is one that has an effect size of 0.25 or greater, regardless of statistical significance.

Please see the [WWC Procedures and Standards Handbook \(version 3.0\)](#) for additional details.



Intervention
Report



Practice
Guide



Quick
Review



Single Study
Review

A **single study review** of an individual study includes the WWC's assessment of the quality of the research design and technical details about the study's design and findings.

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