

Executive Summary

HELPING STUDENTS MAKE THE TRANSITION INTO HIGH SCHOOL

**The Effect of Ninth
Grade Academies
on Students' Academic
and Behavioral
Outcomes**

Marie-Andrée Somers
Ivonne Garcia

June 2016

EXECUTIVE SUMMARY

Helping Students Make the Transition into High School

The Effect of Ninth Grade Academies on Students' Academic and Behavioral Outcomes

**Marie-Andrée Somers
Ivonne Garcia**

with

Janet Quint

June 2016



This study is funded by a research grant from the U.S. Department of Education's Institute of Education Sciences (Evaluation of State and Local Education Programs and Policies Grant #R305E090019).

The broader dissemination of MDRC publications is supported by the following funders that help finance MDRC's public policy outreach and expanding efforts to communicate the results and implications of our work to policymakers, practitioners, and others: The Annie E. Casey Foundation, Charles and Lynn Schusterman Family Foundation, The Edna McConnell Clark Foundation, Ford Foundation, The George Gund Foundation, Daniel and Corinne Goldman, The Harry and Jeanette Weinberg Foundation, Inc., The JBP Foundation, The Joyce Foundation, The Kresge Foundation, Laura and John Arnold Foundation, Sandler Foundation, and The Starr Foundation.

In addition, earnings from the MDRC Endowment help sustain our dissemination efforts. Contributors to the MDRC Endowment include Alcoa Foundation, The Ambrose Monell Foundation, Anheuser-Busch Foundation, Bristol-Myers Squibb Foundation, Charles Stewart Mott Foundation, Ford Foundation, The George Gund Foundation, The Grable Foundation, The Lizabeth and Frank Newman Charitable Foundation, The New York Times Company Foundation, Jan Nicholson, Paul H. O'Neill Charitable Foundation, John S. Reed, Sandler Foundation, and The Stupski Family Fund, as well as other individual contributors.

Opinions or points of view expressed in this document are those of the authors and do not necessarily reflect the official position of — or a position that is endorsed by — the Institute of Education Sciences or other MDRC funders.

For information about MDRC and copies of our publications, see our website: www.mdrc.org.

Copyright © 2016 by MDRC®. All rights reserved.

Overview

Ninth Grade Academies (NGAs) — also called Freshman Academies — have attracted national attention as a particularly intensive and promising approach for supporting a successful transition for high school freshmen. An NGA is a self-contained learning community for ninth-graders that operates as a school within a school. NGAs have four core structural components: (1) a designated separate space within the high school, (2) a ninth-grade administrator who oversees the academy, (3) a faculty assigned to teach only ninth-grade students, and (4) teachers organized into interdisciplinary teams that have both students and a planning period in common. The theory of action behind NGAs is that when these components are employed together, they interact to create a more personalized learning environment where ninth-grade students feel less anonymous and more individually supported. This, in turn, should help students succeed in school and stay on track to high school graduation. NGAs have shown promising results when employed as part of a whole-school reform model, but in these cases schools have received external support from a developer to create and sustain them. A growing number of schools and districts have been experimenting with NGAs on their own, but the little research that exists on their effectiveness is limited to anecdotal accounts.

This study, which is based on a quasi-experimental research design, examines the effect of NGAs on students' progress toward graduation, their academic achievement, and their behavior in several school districts in Florida. The sample for this study includes 27 high schools that created NGAs between 2001-2002 and 2006-2007, along with 16 comparison high schools that serve ninth-grade students with similar characteristics as students in the NGA schools. As context for understanding the impact findings, this study also looks at the extent to which the key features of the NGA model were implemented in the NGA schools in the study and how this differs from the structures and supports in the comparison schools.

The key finding is that the NGAs in this study do not appear to have improved students' academic or behavioral outcomes (credit earning, state test scores, course marks, attendance, suspensions, or expulsions). The findings also suggest that it can be difficult for schools to fully implement the components of the NGA model without expert assistance: Three years after their creation, only half the NGAs in the study had all four structural components of the model in place. Nationally, school districts continue to create NGAs, and recent efforts to implement them have incorporated various enhancements that are intended to strengthen and improve their implementation, but little is known about their effectiveness. Because students' experience in ninth grade is an important predictor of their future success, these efforts to create and improve NGAs should be examined in future studies.

Preface

Although graduation rates have improved in recent years, far too many students still do not complete high school. Numerous students stray off the path to graduation when they enter high school, which can be a challenging transition for students both academically and socially. New freshmen must find their way around an unfamiliar and typically much larger school than they are used to. Unlike in middle school, students are expected to manage their own behavior, and they are held less accountable for class attendance and the effort they put into their school work. As a result, the average student's course performance declines in ninth grade. Preventing this collapse is crucial to helping students succeed. Important work by the University of Chicago Consortium for School Research and others has shown that students who pass their ninth-grade classes are more likely to graduate from high school and attend college.

This report looks at the effect of an approach that has been adopted by many schools and districts in the country: Ninth Grade Academies (NGAs) — self-contained learning communities for ninth-graders that operate as small schools within larger high schools, with their own administrative leaders, faculty, space, and team organization. They strive to offer freshmen a more personalized, engaging, and responsive learning environment.

Most of the high schools in the study, located in several Florida school districts, created their NGAs in 2005 or 2006. Using a quasi-experimental evaluation, the study found that these NGAs do not seem to have succeeded at improving their students' academic and behavioral outcomes. But many of these schools were not able to implement the NGA model fully; only about half put in place all the model's core components. An earlier implementation study conducted by MDRC in Broward County — one of the districts in this study — found that an even smaller proportion of schools implemented the components as strongly as intended.

Despite these disappointing results, MDRC's study should not be the last word. The Talent Development Secondary model, which begins with an NGA as a core component, has produced positive effects in other studies. Moreover, schools and districts across the country have continued to create NGAs, and recent efforts have combined NGAs with different kinds of enhancements to improve their implementation. Because students' success in ninth grade is so important to their later success — and given how few interventions have been shown to help freshmen — there is a need for researchers and practitioners to continue to evaluate and strengthen NGAs so that they can fulfill their potential.

Gordon L. Berlin
President

Acknowledgments

This study was made possible by the vision and support of many individuals and organizations. It was funded by an Institute of Education Sciences (IES) program designed to promote the evaluation of state and local programs and policies. We would like to thank our IES program officer, James Benson, for his encouragement, support, and guidance.

There would be no findings without data, and for the data we are grateful to several people. We would like to thank staff at the Florida Department of Education for providing us with student records data and for answering our repeated queries. We would also like to thank the school administrators in our study districts who took the time to respond to our surveys and to provide information about the structures and supports that their high schools offer to ninth-grade students.

Numerous MDRC researchers and staff members have played an important role in this project leading up to the publication of this report. We thank Corinne Herlihy, Robert Ivry, James Kemple, and Alison Black for developing the original proposal and for serving as initial principal investigators. We thank Emma Alterman, Catherine Armstrong, Nicole Clabaugh, Cathy Corbin, Zeest Haider, Ashley Kennedy, Alma Moedano, Heilyn Paulino, Collin Payne, Zachary Pinto, Kelly Quinn, and Nicholas Sherefkin for their skilled support during data collection, analysis, and report production. We are also indebted to William Corrin, Nettie Legters, Leigh Parise, Shelley Rappaport, Susan Sepanik, Pei Zhu, Christopher Boland, and Joshua Malbin for helping us interpret the findings and reviewing drafts of the report. We also thank Jennie Kaufman, who edited this report and improved its clarity, and Stephanie Cowell and Carolyn Thomas, who prepared the report for publication.

Finally, we wish to thank the district leaders, high school principals, and teaching staff in the study schools for their efforts to improve students' ninth-grade experience and for their recognition of the importance of the ninth grade as a key transition point for keeping students on track to graduation.

The Authors

Executive Summary

The transition into high school is a volatile time for adolescents and a precarious point in the course of their education. Ninth-graders who successfully navigate this transition are far more likely to graduate from high school with their peers and attend college than those who experience failure their freshman year.¹ Growing awareness of the importance of the first year of high school for future success has prompted schools and districts across the country to develop forms of support and interventions designed specifically for ninth-graders.

Ninth Grade Academies (NGAs) — also called Freshman Academies — have attracted national attention as a particularly intensive and promising approach for supporting a successful transition for high school freshmen. An NGA is a self-contained learning community for ninth-graders that operates as a school within a school. With its own administrative team, faculty, and space, an NGA is designed to offer ninth-graders a more personalized, engaging, and responsive learning environment and, by extension, to help students stay on track to high school graduation. NGAs are a core element in several comprehensive high school reform models, such as High Schools That Work and Talent Development Secondary. In addition, a growing number of schools and districts have been experimenting with NGAs themselves, without external or specialized assistance.²

This study, which is based on a quasi-experimental research design, examines the effect of NGAs on students' progress toward graduation, their academic achievement, and their behavior in several school districts in Florida.³ As context for understanding the impact findings, this study also looks at the extent to which the key components of the model were implemented in the study schools that created an NGA and how these features differ from the structures and support services in a group of similar comparison high schools.

What Are Ninth Grade Academies and Why Evaluate Them?

An NGA is a self-contained small learning community in which a group of administrators and teachers work exclusively with ninth-grade students to create a school within a school that is responsive to the academic and social needs of incoming and repeating freshmen. NGAs have four core structural components: (1) a designated separate space in the high school, (2) a ninth-grade administrator who oversees the academy, (3) a faculty assigned to teach only ninth-grade students, and (4) teachers organized into interdisciplinary teams that have both students and a

¹Roderick, Kelley-Kemple, Johnson, and Beechum (2014).

²Kennelly and Monrad (2007); Chmelynski (2004); Kilanski, Smerdon, Legters, and Evan (2012).

³This study is funded by a research grant from the U.S. Department of Education's Institute of Education Sciences (Evaluation of State and Local Education Programs and Policies Grant #R305E090019).

planning period in common. In addition to these structural components, NGAs incorporate supportive practices that can include a “summer bridge” program for rising freshmen; a curriculum to help students who are behind catch up and close achievement gaps; extra academic help outside of school hours; and a curriculum focused on career and college awareness. NGAs can also be paired with data-driven progress monitoring and positive behavior incentive systems.⁴

The theory of action behind NGAs is that when the core structural components of the NGA model are put in place together, they interact to foster a more personalized learning environment where ninth-grade students feel less anonymous and more individually supported. In a well-implemented NGA, ninth-grade students are located in a *separate space*, which promotes an environment where students and teachers can get to know each other and interact more regularly. *NGA teachers work exclusively with ninth-grade students*, so students have a consistent group of adults who are accountable for their success and are aware of their specific social and academic needs. In a well-implemented NGA, *interdisciplinary teaching teams* are important: Ninth-grade teachers from different content areas meet regularly to coordinate their course work and their instructional and behavioral management practices to better serve their students and maintain students’ academic effort and engagement. During these meetings, teachers also identify students who need extra help and are especially at risk of dropping out, and strategize about how to connect them with specialized support services. A well-implemented NGA is also *overseen by a dedicated administrator*, who coordinates all other components of the model so that ninth-grade students’ needs are met. Together, the structural components of the NGA model are intended to create a more personalized learning environment for students — one where students are less anonymous and more accountable, where they feel a greater sense of community, and where they receive individual help. Ideally, these changes in students’ ninth-grade experience should lead to improvements in their behavior and their academic achievement in ninth grade, and ultimately their progress toward high school graduation.

Unfortunately, there is little rigorous empirical research on the effectiveness of NGAs. What research exists has focused on the effect of the comprehensive reform models that include NGAs, as opposed to the effect of NGAs in isolation. In general, these studies have found that NGAs — when implemented as part of a whole-school reform model — appear to improve student outcomes. A quasi-experimental study published by MDRC in 2005 investigated the impact of the Talent Development Secondary high school model — which includes NGAs as a core component — in five high schools in Philadelphia. Each of the high schools in the study received intensive, on-site support from facilitators at Johns Hopkins University, where the model was developed. The study found that the Talent Development Secondary model appeared

⁴Southern Regional Education Board (2002); Cook, Fowler, and Harris (2008).

to produce significant and substantial positive effects during students' first year of high school in attendance, academic course credits earned, and promotion rates.⁵

Though promising, these findings reflect the effects of NGAs for schools that received external support from a developer to create and sustain their NGAs. Yet many schools and districts have been experimenting with NGAs by themselves, without external or specialized assistance.⁶ Whether NGAs implemented in this context are effective is limited to anecdotal accounts that reflect mixed experiences and results.⁷

Therefore, an important and policy-relevant question is whether it is feasible to try to implement strong, effective NGAs in the absence of a whole-school reform approach and without external support from a developer. Accordingly, this study examines the effects and the characteristics of 27 NGAs that were created in several school districts in Florida from 2001 to 2006, during their first three years of implementation.

How Was the Effect of NGAs Evaluated in This Study?

This study uses a comparative interrupted time series design (CITS) to evaluate the effect of NGAs.⁸ In the CITS design, two groups of schools are studied: those that implemented an intervention (program schools) and those that did not (comparison schools). The first step in the CITS design is to look at the trend in student outcomes for the program and comparison schools during the school years *before* the intervention was launched (baseline trends). The second step is to gauge by how much the program and comparison schools “deviated” from their baseline trend *after* the intervention was launched. The two groups of schools are then compared not directly on their outcomes but on deviations from their baseline trends. In the present study, the effect of NGAs is examined by looking at whether high schools that implemented NGAs experienced larger and more positive deviations from trend than a group of matched comparison schools, with respect to their ninth-grade student outcomes (such as percentage of core credits earned by students). The CITS design is more rigorous than many other quasi-experimental designs because it combines data collected at several time points with data from a matched comparison group. This combination makes it more plausible that estimated effects from a CITS design can be attributed to the effect of NGAs, because when the match is strong it can eliminate many alternative explanations for why deviations from trend would be different for the

⁵Kemple, Herlihy, and Smith (2005).

⁶For example, in the 2013-2014 school year, the DC Public Schools also decided to launch NGAs in nine high schools (District of Columbia Public Schools, 2013).

⁷Kennelly and Monrad (2007); Chmelynski (2004); Kilanski, Smerdon, Legters, and Evan (2012).

⁸For a discussion and history of CITS designs, see Shadish, Cook, and Campbell (2002). For a discussion of these designs in the context of education research, see Bloom (2003).

NGA schools and the comparison schools.⁹ The CITS design has been shown to be able to reproduce the results of a randomized experiment in those circumstances when the criteria for a well-implemented design can be met (which they appear to have been in this study).¹⁰

The sample for this study includes 27 high schools in Florida that created NGAs. These NGAs were launched between 2001-2002 and 2006-2007 in eight urban school districts (Brevard, Broward, Duval, Hillsborough, Lee, Orange, Palm Beach, and Pinellas). The study sample also includes 16 comparison high schools whose trends in ninth-graders' outcomes and whose school characteristics were similar to those of the NGA schools before NGA implementation.¹¹ Various sensitivity tests suggest that the comparison schools provide a credible reference point for what would have happened to the NGA schools had they not implemented the academies. This, in turn, increases this study's ability to evaluate whether the NGAs *caused* any changes in ninth-grade student outcomes.

Were the NGA Schools Able to Implement the Structural Features and Support Services of the NGA Model?

This study examines the extent to which the 27 high schools were able to put in place the components of the NGA model. As discussed earlier, some components are not unique to the NGA model, so this study also examines whether elements of the NGA model were being used in some of the comparison schools as well. Information for this analysis comes from a survey that was sent to the administrators of all high schools in the eight study districts in spring 2011, asking them to report on whether they were implementing the different structural components and support services associated with an NGA, and if so, in what year they started implementing them. The key findings are as follows:

- **Many of the NGAs in the study were unable to implement all four structural components.** Three years after their creation, only half the NGAs in the study had implemented all four components of the NGA model.
- **Some of the features of the NGA model were also part of the ninth-grade experience in the comparison schools.** The comparison high schools in this study, for example, provide different kinds of support services to their ninth-grade students, and a substantial percentage of them have a dedicated ninth-grade faculty.

⁹Corrin and Cook (1998).

¹⁰St. Clair, Cook, and Hallberg (2014); Somers, Zhu, Jacob, and Bloom (2013); Fretheim et al. (2013).

¹¹One comparison school was selected for each NGA school. However, the total number of unique comparison schools is less than the total number of NGA schools, because some comparison schools were selected as the match for more than one NGA school. Statistical hypothesis tests are adjusted to account for the fact that some comparison schools are included in the analysis multiple times.

- **The main difference between the NGAs and the comparison schools is with respect to space, leadership, and teaching teams.** The NGAs in the study are much more likely than the comparison schools to report having a dedicated space for ninth-grade students, a dedicated administrator watching over the ninth grade, and teaching teams.

An important finding to emerge from this study is that some of the features of the NGA model, particularly support services and dedicated faculty, are also part of the ninth-grade experience in the comparison schools. This practical reality confirms that what distinguishes the NGA model is not its individual components, but rather the idea that when the components are put in place together, they should interact to promote an environment where adults make a concerted effort to be aware of and responsive to student needs. Unfortunately, it was not possible in this study to measure how *well* the components of the NGA model were implemented in the study schools — only whether the components were present or absent.¹² Therefore, even though the NGA schools and the comparison schools do appear to differ structurally, it is unclear whether these differences were sufficient to have created a more personalized learning environment for ninth-grade students in the NGA schools.

Did the NGAs in the Study Improve Student Outcomes?

This study next examines whether the NGAs were able to achieve their ultimate goal: to improve ninth-grade student outcomes. Outcomes in three domains are explored: *school progress* (as measured by credits earned in core subject areas),¹³ *academic achievement* (as measured by students' proficiency on state tests in English language arts and math, and their grade point average in core subject areas), and *student behavior* (as measured by average attendance rates, in- and out-of-school suspensions, and expulsions). These outcomes were measured using student-level data for multiple cohorts of ninth-grade students, provided by the Florida Department of Education. A ninth-grade cohort is defined as a group of students who enter a high school in the same school year. The effect of NGAs is estimated for the first three cohorts of ninth-grade students to enroll in the study schools, corresponding to the first three years of NGA implementation. Table ES.1 summarizes the findings for the third year of implementation.

¹²Measuring implementation quality would have required conducting site visits to observe the teachers and ninth-grade students in the NGAs. This was not possible because the study is retrospective (it is based on a sample of ninth-grade students who were in the NGAs before the start of this research study).

¹³The core subject areas are English language arts, math, science, and social studies.

Table ES.1
Estimated Effect of NGAs on Student Outcomes in Ninth Grade,
Third Year of NGA Implementation

Outcome	Deviations from Baseline Trend			P-Value for
	NGA Schools	Comparison Schools	Estimated Effect	Estimated Effect
<u>Progress toward graduation</u>				
Credits earned in core subjects (as % needed to graduate)	-3.24 †††	-1.92	-1.31	0.397
<u>Academic achievement</u>				
Proficient on ELA state test (%)	2.47 ††	0.82	1.65	0.409
Proficient on math state test (%)	-3.44 ††	-1.29	-2.15	0.307
GPA in core subject areas (out of 4.0)	-0.06	-0.09 †	0.03	0.619
<u>Behavior (%)</u>				
Attendance rate	-2.14 †††	-1.76 †	-0.38	0.748
Received an in-school suspension	-1.17	2.04	-3.21	0.448
Received an out-of-school suspension	2.49	4.62 †††	-2.13	0.423
Were expelled	-0.02	0.05	-0.06	0.155
Number of schools (total = 43)	27	16		

SOURCE: Student records from the Florida Department of Education.

NOTES: ELA = English language arts; GPA = grade point average.

The findings in this table represent the estimated effect of NGAs for the third cohort of students who entered the study schools after the NGAs were launched. A ninth-grade cohort is defined as a group of students who enter a high school in the same school year. Ninth-grade outcomes are measured in students' first year of high school.

The values in the columns labeled "NGA Schools" and "Comparison Schools" are the estimated deviations from baseline trend. Rounding may cause slight discrepancies in calculating sums and differences.

A two-tailed t-test was applied to estimated deviations and estimated differences between NGA schools and comparison schools. The statistical significance of estimated deviations is indicated as: ††† = 1 percent; †† = 5 percent; † = 10 percent. The statistical significance of estimated effects is indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

- **Overall, there is no conclusive evidence that the NGAs in this study improved ninth-grade students' outcomes.**

After the NGAs were created, ninth-grade students in the NGA schools actually performed worse than predicted (relative to their schools' baseline trends) on a range of different

academic and behavioral outcomes. So did students in the comparison schools. This suggests that external factors unmeasured in this study (such as a new statewide accountability system) may have caused a general decline in student outcomes in all the study schools, and that creating NGAs did not help schools avoid this decline.

For example, Figure ES.1 shows the trend in credits earned in core subject areas in ninth grade (as a percentage of core credits required for graduation). In the years before the NGAs were created, credit earning was on the rise in both the NGA schools and the comparison schools. But after the NGAs were launched, the NGA schools' deviations from their baseline trend were statistically negative for this outcome, which indicates that ninth-grade students in the follow-up cohorts earned *fewer* credits than would have been predicted based on earlier cohorts' credit earning. Ninth-grade students in the comparison schools also performed worse than expected. Although the NGA schools deviated from their baseline trend by a slightly greater (more negative) amount than the comparison schools on the percentage of credits earned, the difference in their deviations from trend is not statistically significant (estimated effect = -1.31 percentage points and p-value = 0.397 in the third year of implementation). The conclusion is that the NGA schools did not improve the percentage of credits earned by ninth-grade students, whether in absolute terms or relative to the comparison schools.

- **Nor is there any conclusive evidence that the subgroup of NGA schools that implemented all four core structural components had an effect on ninth-grade students' outcomes.**

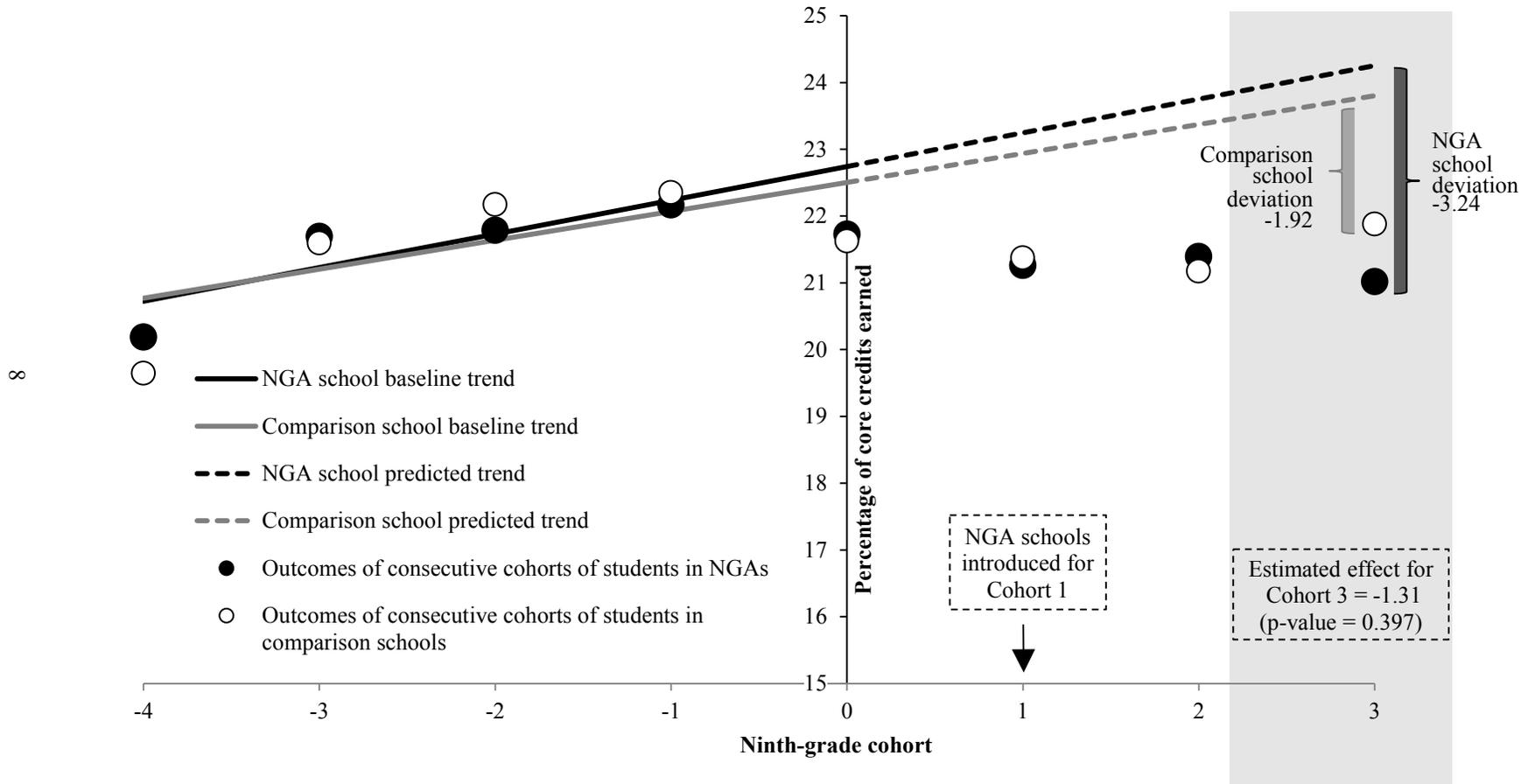
The effect of NGAs was separately examined for the 14 NGA schools that implemented all four core structural components during the follow-up period (dedicated space, dedicated administrator, dedicated faculty, and teaching teams). The hypothesis is that by doing so, these schools were able to set up an organizational structure more conducive to creating a personalized learning environment for ninth-grade students. However, estimated effects on student outcomes for these 14 NGA schools are similar to the results for the full sample.

Discussion

The findings from this study suggest that creating effective Ninth Grade Academies can be difficult. The NGAs in this study do not appear to have improved ninth-grade students' progress toward graduation, their academic achievement, or their behavioral outcomes. Even among the subgroup of NGA schools that implemented all four core structural components, student outcomes do not seem to have improved. One hypothesis for this pattern of results is that the core NGA components may not have been implemented as intended in the study schools, and that as a result, staff members were not able to create the anticipated personalized ninth-grade experience.

Figure ES.1

Baseline Trends and Deviations from Baseline Trend in the Percentage of Core Credits Earned in Ninth Grade



SOURCE: Student records from the Florida Department of Education.

NOTE: The estimated effect of NGA schools is equal to the estimated deviation from baseline trend for the NGA schools minus the estimated deviation from baseline trend for the comparison schools. The estimated effect of NGA schools shown in this figure is not statistically significant at the 10 percent level.

In recent years, districts and comprehensive reform models using NGAs have been strengthening their academies with additional elements aimed at improving their implementation — such as monitoring systems to identify students at risk of dropping out, mentoring by near peers, and communities of practice that bring together NGA staff members to receive training, share their experiences, and learn from each other. Because students' experience in ninth grade is an important predictor of their future success, these efforts to create and improve NGAs should be examined in future studies. In order to provide the most rigorous evidence of their effectiveness, it would also be of benefit to the field for researchers to partner with districts that would be willing to randomly select which high schools will implement new NGAs; as of yet all studies of NGAs have been based on quasi-experimental research designs. Future studies should also measure how well the NGA components are being implemented and whether they create a more personalized learning environment, so that the NGA theory of action can be fully understood and tested.

References for the Executive Summary

- Bloom, Howard S. 2003. "Using 'Short' Interrupted Time-Series Analysis to Measure the Impacts of Whole-School Reforms: With Applications to a Study of Accelerated Schools." *Evaluation Review* 27, 3: 3-49.
- Chmelynski, Carol. 2004. "Ninth-Grade Academies: Keep Kids in School." *Education Digest: Essential Readings Condensed for Quick Review* 69, 5: 48-50.
- Cook, Carrie, Holly Fowler, and Ty Harris. 2008. *Ninth Grade Academies: Easing the Transition to High School*. Raleigh: North Carolina Department of Public Instruction.
- Corrin, William, and Thomas D. Cook. 1998. "Design Elements of Quasi-Experiments." Pages 35-58 in Albert J. Reynolds and Herbert J. Walberg (eds.), *Advances in Educational Productivity*. Bingley, UK: Emerald Group.
- District of Columbia Public Schools. 2013. "DCPS Establishes Ninth Grade Academies to Support Incoming Freshmen." Press release. Website: <http://dcps.dc.gov>.
- Fretheim, Atle, Stephen B. Soumerai, Fang Zhang, Andrew D. Oxman, and Dennis Ross-Degnan. 2013. "Interrupted Time-Series Analysis Yielded an Effect Estimate Concordant with the Cluster-Randomized Controlled Trial Result." *Journal of Clinical Epidemiology* 66, 8: 883-887.
- Kempe, James J., Corinne M. Herlihy, and Thomas J. Smith. 2005. *Making Progress Toward Graduation: Evidence from the Talent Development High School Model*. New York: MDRC.

- Kennelly, Louise, and Maggie Monrad. 2007. *Easing the Transition to High School: Research and Best Practices Designed to Support High School Learning*. Washington, DC: National High School Center.
- Kilanski, Kristine, Becky Smerdon, Nettie Legters, and Aimee Evan. 2012. "From Sticks to Carrots to Getting It Done: How Converging Visions and Common Action Are Generating New Standards of Practice for American High Schools." Pages 189-218 in Becky Smerdon and Kathryn Borman (eds.), *Pressing Forward: Increasing and Expanding Rigor and Relevance in America's High Schools*. Charlotte, NC: Information Age Publishing.
- Roderick, Melissa, Thomas Kelley-Kemple, David W. Johnson, and Nicole O. Beechum. 2014. "Preventable Failure: Improvements in Long-Term Outcomes When High Schools Focused on the Ninth Grade Year — Research Summary." Chicago: Consortium on Chicago School Research.
- Shadish, William R., Thomas D. Cook, and Donald T. Campbell. 2002. *Experimental and Quasi-Experimental Designs for Generalized Causal Inference*. Boston: Houghton Mifflin.
- Somers, Marie-Andrée, Pei Zhu, Robin Tepper Jacob, and Howard S. Bloom. 2013. "The Validity and Precision of the Comparative Interrupted Time Series Design and the Difference-in-Difference Design in Educational Evaluation." Working paper. New York: MDRC.
- Southern Regional Education Board. 2002. *Opening Doors to the Future: Preparing Low-Achieving Middle Grades Students to Succeed in High School*. Atlanta: Southern Regional Education Board.
- St. Clair, Travis, Thomas D. Cook, and Kelly Hallberg. 2014. "Examining the Internal Validity and Statistical Precision of the Comparative Interrupted Time Series Design by Comparison with a Randomized Experiment." *American Journal of Evaluation* 35, 3: 311-327.

About MDRC

MDRC is a nonprofit, nonpartisan social and education policy research organization dedicated to learning what works to improve the well-being of low-income people. Through its research and the active communication of its findings, MDRC seeks to enhance the effectiveness of social and education policies and programs.

Founded in 1974 and located in New York City and Oakland, California, MDRC is best known for mounting rigorous, large-scale, real-world tests of new and existing policies and programs. Its projects are a mix of demonstrations (field tests of promising new program approaches) and evaluations of ongoing government and community initiatives. MDRC's staff bring an unusual combination of research and organizational experience to their work, providing expertise on the latest in qualitative and quantitative methods and on program design, development, implementation, and management. MDRC seeks to learn not just whether a program is effective but also how and why the program's effects occur. In addition, it tries to place each project's findings in the broader context of related research — in order to build knowledge about what works across the social and education policy fields. MDRC's findings, lessons, and best practices are proactively shared with a broad audience in the policy and practitioner community as well as with the general public and the media.

Over the years, MDRC has brought its unique approach to an ever-growing range of policy areas and target populations. Once known primarily for evaluations of state welfare-to-work programs, today MDRC is also studying public school reforms, employment programs for ex-offenders and people with disabilities, and programs to help low-income students succeed in college. MDRC's projects are organized into five areas:

- Promoting Family Well-Being and Children's Development
- Improving Public Education
- Raising Academic Achievement and Persistence in College
- Supporting Low-Wage Workers and Communities
- Overcoming Barriers to Employment

Working in almost every state, all of the nation's largest cities, and Canada and the United Kingdom, MDRC conducts its projects in partnership with national, state, and local governments, public school systems, community organizations, and numerous private philanthropies.