

Boston Public Schools

Turnaround Using Increased Learning Time (TILT)

DID TILT IMPROVE EDUCATIONAL OUTCOMES?

Project Overview

THE PROBLEM: What Challenge Did the Program Try to Address?

Persistently low-performing middle schools struggle to prepare their students for rigorous high school work and advancement to and success in college. Of particular concern, research has shown that students' eighth grade academic achievement has a greater impact on their college and career readiness by the time of high school graduation than their academic results in high school. To help address this issue, Boston Public Schools received an i3 development grant¹ (2012-2015) to implement and evaluate Turnaround Using Increase Learning Time² in two of its low-performing middle schools, building on prior work indicating that increasing learning time can be a successful way for low-performing schools to accelerate student achievement and narrow achievement gaps.

THE PROJECT: What Strategies Did the Program Employ?

Turnaround Using Increased Learning Time (TILT) is an expanded learning time program which aims to improve educational outcomes for students by increasing the time students spend in school and receive instruction. The two implementing middle schools added 300 hours of instruction to the school year. The program evaluation (using a quasi-experimental design and comparative interrupted time series analysis) compared the two middle schools which implemented TILT with two other non-implementing middle schools that were similar on student and school-level characteristics. The student outcomes the study examined included achievement (math, English Language Arts [ELA], and science), attendance, behavior, and perception of school environment and learning engagement.

¹ Development grants provide funding to support the development or testing of novel or substantially more effective practices that address widely shared education challenges. All i3 grantees are required to conduct rigorous evaluations of their projects. The quality of evidence required to demonstrate a project's effectiveness depends on a project's level of scale or grant type.

² Boston Public Schools received an i3 development grant supported by the U.S. Department of Education's Investing in Innovation program through Grant Number U411C110112.

THE TILT MODEL

- **Core Academic Subjects.** Schools increased instructional time for all core subjects by creating longer math and/or ELA blocks, emphasizing science and social studies, and providing effective academic support classes that targeted individual student needs. This component included academic leagues, in-school intervention classes that met for several hours every week. Class sizes were smaller than core classes, with teachers closely monitoring student progress via frequent assessments. In addition, TILT provided further targeted support and differentiated instruction to meet the needs of special education students and English language learners.
- **Teacher Professional Development (PD).** Teachers met by grade-level or subject-area several times a week. All teachers also met twice a month for PD, which included the chance to provide and receive feedback on their teaching practices and participate in instructional coaching. In both of these types of meetings, teachers worked on several strategies, particularly using learning time effectively to individualize instruction, analyzing student data and work, building their expertise in content and instructional strategies, and communicating across teams and the school community.
- **Enrichment Activities.** Students could choose from several electives each year from a set of options developed via student and teacher input. The electives offered a progression of classes that culminated in a project exhibit or performance in front of the school community. These classes were taught by both teachers and specialists from partner organizations in the community.

Summary of Results

DID TILT IMPROVE EDUCATIONAL OUTCOMES?

According to the impact evaluation, TILT exhibited mixed results overall regarding student outcomes, with some improvement over the three years of the program. In the first year, impacts were small and mostly negative, particularly for math achievement. There were positive impacts on math and ELA achievement as well as student engagement in the second year. The third year included a positive impact on ELA achievement and a negative impact on school environment.

- **ACHIEVEMENT.** After the first year of the program, students in TILT schools performed worse on math achievement than students in non-TILT schools, a finding that was statistically significant. There was no statistically significant difference for ELA and science achievement. After the second year of implementation, TILT had a positive and statistically significant impact on both math and ELA achievement, though no impact on science achievement. After the third year, TILT students' ELA performance again demonstrated that the program had a positive and statistically significant impact compared to non-TILT students. There were no significant impacts on math and science.
- **BEHAVIOR.** In all three years of the program, there was a statistically significant decrease in the gap between the number of suspension days per student in TILT schools vs. non-TILT schools, indicating a relatively lower suspension rate for TILT students.
- **ATTENDANCE.** Throughout the program, there were no statistically significant differences in the changes in student attendance rates between TILT and non-TILT students relative to prior attendance rates overall.
- **SCHOOL ENVIRONMENT & LEARNING ENGAGEMENT.** After the second year of the program, there was a statistically significant decrease in the gap in student engagement between TILT and non-TILT students, indicating that TILT students were relatively more engaged. By the third year of the program, there was a statistically significant gap between TILT and non-TILT students' positive school environment ratings, with TILT students rating their school environments significantly lower compared to non-TILT students.

Please see Appendices B and C for information about the evaluation's design and the quality of the evidence, respectively.

SECONDARY FINDINGS

In addition to analyzing overall student outcomes, the impact evaluation examined TILT's impact on three at-risk/high need subgroups of students: English language learners (ELL), students with free or reduced-price lunch eligibility (FRL), and those with special education status (SPED).

- **SCHOOL ENVIRONMENT RATINGS BY ELL STUDENTS.** In the second year of the program, there was a statistically significant greater gap in ratings of positive school environment between ELL and non-ELL students in TILT schools relative to ELL and non-ELL students in comparison schools (ELL students rated their school environment less positively in both types of schools).
- **SPECIAL EDUCATION STUDENTS.** Following the first year of the program, there was a statistically significant increase in the gap between ratings of school environment between SPED and non-SPED students in intervention schools versus SPED and non-SPED students in comparison schools (SPED students rated their school environment less positively in both types of schools). After the second year of the program, there was a statistically significant increase in the math achievement gap between SPED and non-SPED students in TILT schools relative to the gap between SPED and non-SPED students in comparison schools (SPED students had lower scores in both types of schools).
- **STUDENTS ELIGIBLE FOR FRL.** Following the first year of the program, there was a statistically significant increase in the ELA achievement gap between FRL and non-FRL students in TILT schools relative to the gap between FRL and non-FRL students in comparison schools (FRL students had lower scores in both types of schools).

OTHER CONSIDERATIONS

The implementation study reported several elements of the TILT program that appeared to be particularly beneficial or helpful for students and teachers, as well as specific challenges the program encountered. The report authors offered a few specific recommendations based on these benefits and challenges.

- **BENEFIT: INSTRUCTION AND EXTRACURRICULARS.** In the last year of the program, teachers reported that one of its most positive elements was students' access to additional instruction. This instruction was mainly delivered through the academic leagues, with schools modifying the leagues over time to offer league courses earlier in the school day, assign grades for league courses, and offer more targeted interventions in ELA and math. The extracurriculars offered included options that students wouldn't otherwise have had access to. In particular, teachers pointed to the positive benefits of the apprenticeship programs, dance and performance activities, sports, and activities that promoted social and emotional learning.
- **BENEFIT: ORGANIZATION PARTNERSHIPS.** Both schools developed relationships with outside organizations to enhance program benefits. In the second year of implementation, both schools had fewer, more focused partnerships marked by greater collaboration than the prior year. This focus on fewer organizations decreased the management burden on the schools and improved the quality of outside services. The partner organizations also assisted with planning meetings and professional development.
- **CHALLENGE: CONTINUITY.** The program struggled with providing a continuous transition from the core school day to the extended portion of the day. Most teachers indicated students and staff still perceived a break between the main day and the extended portion. Some of the efforts to address this issue included teacher collaboration to try to provide a more seamless day of instruction and behavioral expectations.
- **BENEFIT: TEACHER GROUPS.** At each of the two implementing schools, a group of teachers formed a collaborative group to provide targeted, continuous instruction to their core day students during both the core and extended teaching periods. At one of the schools, the group was comprised of eighth grade teachers who focused on grade-level students. At the other school, a group of core content teachers joined together to provide academic league instruction to their core students, focusing on topics in math and ELA that were particularly difficult for their students.
- **CHALLENGE: ELL AND SPED.** The implementing schools had fewer certified teachers on-site during the expanded part of the day, meaning that the partner organizations were mostly responsible for providing instruction and additional supports for ELL and SPED students. However, the supports these organizations provided were much more limited and applied less consistently compared to the instruction and supports provided by certified specialists during the core day.
- **CHALLENGE: LIMITED TIME.** Teachers reported that there was still insufficient time for planning, collaborative meetings, and working with students outside of class. They also expressed concern that students had little time left for homework and very limited time for physical and social activity.
- **RECOMMENDATIONS.** To promote successful implementation of the TILT model, the report authors pointed to the need to build continuity by making the extended instructional time a seamless part of the school day, to give teachers time and support to collaborate so that they can make instruction between core and expanded classes consistent and cohesive, and to provide students with unstructured time so that they can socialize and move around.

- **IMPLEMENTATION: STUDENT ACTIVITIES.** The student activities were implemented with fidelity in each year of the program, with 100% of sites reaching high implementation in the second and third years.
- **LIMITATIONS.** One limitation to the study is the holistic nature of the intervention. Students with ID/A had opportunities to engage in academic classes, college social life, institutional supports, and employment alongside their peers. This approach made it difficult to determine which aspects of the intervention had the greatest impact, whether one aspect alone was sufficient, or if the holistic approach was necessary. In addition, the job skills and career readiness instruments were modified by the researchers and may not have captured the true impact of the intervention on these two outcomes. Other limitations included the small sample size and the fact that TCT and comparison students came from the same districts and were supported by the same staff members, so comparison students may have been exposed to aspects of the program.

For More Information

Evaluation Reports³

[Final Impact Evaluation Report](#) (AIR, March 2016)

[Final Implementation Evaluation Report](#) (AIR, March 2015)

³ The information and data for this result summary was collected from the most recent reports as of 01/30/2020: AIR (2016). *Boston Turnaround Using Increased Learning Time: Year 3 Student Outcomes Analysis*. Retrieved from <https://www.air.org/sites/default/files/Boston-TILT-Year-3-Student-Outcomes-Analysis-March-2016.pdf> and AIR (2015). *Implementation of the Turnaround With Increased Learning Time (TILT) Model: Final Evaluation Memo*. Retrieved from <https://www.air.org/sites/default/files/Implementation-of-TILT-Model-Boston-Final-Evaluation-Memo-March-2015.pdf>

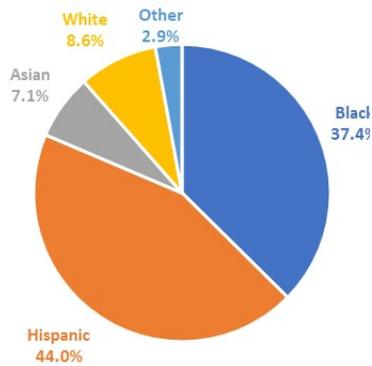
Appendix A: Students Served by the Project⁴

| GRADE(S) | | | | | | | | | | | | | |
|----------|---|---|---|---|---|---|---|---|---|---|----|----|----|
| PK | K | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |

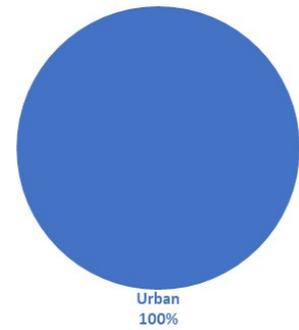
GENDER

Not Reported

RACE/ETHNICITY⁵



COMMUNITY



HIGH-NEED STUDENTSⁱ

| Free/Reduced-Price Lunch | English Learner | Students with Disabilities |
|--------------------------|-----------------|----------------------------|
| 82.9% | 46.7% | 27.4% |

⁴ These data reflect the entire student population served by the intervention, not just the evaluation sample used in the impact study.

⁵ Race/ethnicity pie chart is based on average figures across the three years of program implementation

Appendix B: Impact Evaluation Methodology⁶

RESEARCH DESIGN:

| | |
|----------------------|--|
| Design: | Quasi-Experimental Design |
| Approach: | <ul style="list-style-type: none"> The study used a comparative interrupted time series to compare student outcomes in TILT vs. non-TILT schools. The comparison schools were chosen prior to program implementation on the basis of their similarities to TILT schools in location, student demographics, and achievement. |
| Study Length: | Three years |

DATA COLLECTION AND ANALYSIS

| | |
|--|---|
| Study Setting: | Middle schools in Boston |
| Final Sample Size: | <ul style="list-style-type: none"> <i>Intervention Group</i>: two participating TILT middle schools <i>Comparison Group</i>: two non-participating middle schools |
| Intervention Group Characteristics: | <ul style="list-style-type: none"> Free/reduced-priced lunch: Y1, 80.5%; Y2, 88.1%; Y3, 80.2% Black: Y1, 37.2%; Y2, 38.1%, Y3, 37.0% Hispanic: Y1, 45.0%; Y2, 42.5%, Y3, 44.5% Asian: Y1, 5.5%; Y2, 7.3%, Y3, 8.5% White: Y1, 9.5%; Y2, 9.1%, Y3, 7.2% Other: Y1, 2.8%; Y2, 3.0%, Y3, 2.8% English language learners: Y1, 46.6%; Y2, 47.2%, Y3, 46.4% Special education status: Y1, 26.3%; Y2, 26.8%, Y3, 29.1% |
| Comparison Group Characteristics: | <ul style="list-style-type: none"> Free/reduced-priced lunch: Y1, 81.4%; Y2, 85.3%, Y3, 72.2% Black: Y1, 51.6%; Y2, 49.1%, Y3, 42.2% Hispanic: Y1, 29.7%; Y2, 32.9%, Y3, 38.0% Asian: Y1, 7.8%; Y2, 7.9%, Y3, 8.6% White: Y1, 8.0%; Y2, 7.2%, Y3, 8.4% Other: Y1, 2.9%; Y2, 2.9%, Y3, 2.8% English language learners: Y1, 40.6%; Y2, 43.9%, Y3, 48.0% Special education status: Y1, 25.0%; Y2, 23.1%, Y3, 26.1% |
| Data Sources: | <ul style="list-style-type: none"> Student Assessments Student Records Survey |
| Key Measures: | <ul style="list-style-type: none"> Student Achievement - Massachusetts Comprehensive Assessment System (MCAS) for Math and ELA from 2012-2014 and Science from 2012-2015; Partnership for Assessment of Readiness for College and Careers (PARCC) for Math and ELA in 2014-2015 Attendance: Student records Perception of School Climate & Engagement: Researcher survey Student Behavior: Student records (suspensions) |

⁶ These data reflect only the evaluation sample in the impact study, not the entire population served.

Appendix C: Quality of the Evidence

WHAT WORKS CLEARINGHOUSE REVIEW⁷

| STUDY | RATING |
|-------------------------------|--------|
| Not reviewed as of 01/30/2020 | N/A |

EVIDENCE FOR ESSA REVIEW⁸

| STUDY | RATING |
|-------------------------------|--------|
| Not reviewed as of 01/30/2020 | N/A |

NATIONAL CENTER ON INTENSIVE INTERVENTIONS REVIEW⁹

| STUDY | RATING |
|-------------------------------|--------|
| Not reviewed as of 01/30/2020 | N/A |

⁷ <https://ies.ed.gov/ncee/wwc/FWW>

⁸ <https://www.evidenceforessa.org/>

⁹ <https://intensiveintervention.org/>

Investing in Innovation (i3) Grantee Results Summary

Development, 2012-2015

The [*Investing in Innovation Fund \(i3\)*](#), established under section 14007 of the American Recovery and Reinvestment Act of 2009, is a Federal discretionary grant program at the U.S. Department of Education within the Office of Elementary and Secondary Education (OESE). i3 grants help schools and local education agencies work in partnership with the private sector and the philanthropic community to develop and expand innovative practices that improve student achievement or student growth, close achievement gaps, decrease dropout rates, increase high school graduation rates, and/or increase college enrollment and completion rates for high-need students.

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ⁱ “High-need student” refers to a student at risk of academic failure or otherwise in need of special assistance and support, such as students who are living in poverty, attend high-minority schools, are far below grade level, who have left school before receiving a regular high school diploma, at risk of not graduating with a diploma on time, who are homeless, in foster care, have been incarcerated, have disabilities, or who are English learners. For more information see: [*Applications for New Awards; Investing in Innovation Fund-Development Grants, 81 FR 24070 \(April 25, 2016\)*](#).