

Over the Long-Haul: Examining the Long-Term Effects of School Turnaround

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Across the country, policymakers have made substantial investments into improving chronically low-performing schools through “turnaround” policies (Dee, 2012; Dragoset et al., 2017; Henry & Harbatkin, 2020; Strunk et al., 2016; Zimmer et al., 2017). These policies often include significant staff changes and additional funding aimed at improving low-performing schools, or turning the school over to a charter operator. Early research into these policies has been mixed (Dougherty & Weiner, 2017; Heissel & Ladd, 2017; Henry & Harbatkin, 2020; Schueler et al., 2017; Strunk et al., 2016; Zimmer et al., 2017), but these studies have generally focused on the short-term impact without considering the effects these interventions have on students after their time in the turnaround school. Examining the long-term effects of turnaround is consequential because some effects may only be realized in the long run. For example, remediating foundational reading comprehension skills may require several years before student test scores improve. At the same time, the disruptive nature of turnaround reforms could have negative long-term effects on students that negate short-term gains.

We provide new evidence on the long-term effects of school turnaround in Tennessee’s two primary turnaround models – the Achievement School District (ASD) and local Innovation Zones (iZones). Both models were designed to target and support the state’s lowest performing five percent of schools, called priority schools. The ASD was formed under Tennessee’s 2010 First to the Top Legislation and district iZones were later formed by districts to drive turnaround more from the local level. Both models began operating schools in the 2012-13 school year. When chosen for the ASD, priority schools were removed from their local district to be governed by the Tennessee Department of Education (TDOE), restarted under new management, and required to replace the principal and at least 50 percent of teachers. Most ASD schools were restarted under a charter management organization (CMO), though a few were directly managed by the ASD. Local iZones differed from the ASD primarily in that iZone schools remain part of their district and are placed into an intra-district network with other priority schools. Like the ASD, iZone schools must also replace the principal. Unlike the ASD, iZone schools are not required to replace teachers, but almost all iZone schools did replace at least 50 percent of teachers in the first year of reforms (Henry et al., 2017). Local iZones included in our analysis include Shelby County Schools (Memphis), Metro-Nashville Public Schools, Hamilton County Schools, and Knox County Schools.

Both the ASD and local iZones began in 2012-13 and include schools with different grade levels (i.e., elementary, middle, high schools). Tennessee is a highly informative context to study long-term outcomes because both models have been managing schools continuously for over seven years, a relatively long time compared to other turnaround models across the country. Earlier research found some short-term benefits for students attending iZone schools (Henry et al., 2020; Zimmer et al., 2017) and examined the effectiveness of student learning outcomes as both models matured (Pham et al., 2020). However, these analyses did not consider the long-term effects for students after they attended these schools. In this brief, we examine these long-term effects for students who attended either ASD or iZone schools.

Research Question:

To what extent did attending an ASD or iZone middle school between the 2012-13 and 2015-16 school years affect students' later achievement, attendance, disciplinary outcomes, graduation, and test scores in high school?

Key Findings:

- 1) For most of the outcomes we examined, students who attended ASD or iZone middle schools did not have improved high school outcomes compared to students attending similarly low-performing priority middle schools that received no turnaround interventions.
- 2) Compared to students attending similarly low-performing priority middle schools that received no turnaround interventions, students who attended ASD middle schools had some improvement in their high school disciplinary outcomes, but they averaged lower scores on their high school End of Course (EOC) exams in reading, math and science.
- 3) Compared to students attending similarly low-performing priority schools that received no turnaround interventions, students who attended iZone middle schools performed no better or worse on average in high school on most outcomes but received lower average EOC scores in reading.
- 4) In sum, compared to students attending similarly low-performing priority middle schools that received no turnaround interventions, students who attended either ASD or iZone middle schools did not experience improvements in high school on most outcomes.

Data and Research Approach

Data

Data for this analysis were provided by TDOE and managed by the Tennessee Education Research Alliance (TERA). The administrative datasets contain a rich set of student characteristics including gender, race, eligibility for free or reduced-price meals (FRPM), English language learner status (ELL) and special education eligibility (SPED). The data span 2006-07 to 2018-19, which includes seven years of schools under the auspices of the ASD and local iZones. In our analysis we focus on high school outcomes for students who attended an ASD or iZone middle school. By focusing on ASD and iZone middle schools rather than elementary schools, we are able to examine the effects of an educational experience proximate to the outcomes measured.

Using these statewide data, we make two primary restrictions to our sample. First, we restrict the analysis to students who attended priority middle schools and who can be observed in a Tennessee public high school. This restriction allows us to examine students who attended ASD or iZone middle schools with students who attended similarly low-performing priority schools that receive no turnaround interventions. (We refer to these as comparison middle schools.) Second, we restrict our primary sample to include only students who attended *all* grades offered at an ASD, iZone, or comparison middle school. This includes four cohorts of students that began middle school between 2012-13 and 2015-16. This restriction allows us to avoid bias from students who move and experience the effects of a different middle school. However, because of these restrictions, our analysis should be interpreted as applicable to students who were continuously enrolled at an ASD, iZone, or comparison middle school.

These data include our outcomes of interest, all measured when students are in high school. First, we use ACT scores (from the first time students take the ACT) and high school end-of-course (EOC) exams in reading, math, and science to measure student achievement.¹ Second, we examine students' attendance rate, measured as the number of days attended divided by the number of school days enrolled in the school. We also consider chronic absenteeism, defined as missing 10 percent or more of enrolled school days. Third, we examined whether any zero tolerance disciplinary actions were recorded for the student. Offenses include possessing and/or using drugs, possessing a firearm, staff battery, and bullying. We chose these zero tolerance actions because they are major offenses that would likely be recorded consistently in all schools. Finally, to measure educational attainment, we use an indicator for whether students received a high school diploma and whether they ever dropped out of school. Note that our analysis did not

¹ Due to testing complications, our analysis does not include any test scores from 2015-16.

include most outcomes in 2019-20 because of disruptions from the COVID-19 pandemic. When we include high school graduation outcomes from 2019-20, we reach the same conclusions as when using graduation outcomes up to only 2018-19.

Research Approach

We use an analytic approach called an instrumented difference-in-differences design. This approach relies on non-turnaround priority schools as a comparison group and allows us to simultaneously address differences at both the student and school level. If unaccounted for, these differences could lead to bias in our results. Bias at the student level could occur if students systematically choose to attend (or avoid) turnaround middle schools for reasons that could affect their outcomes. For example, parents may choose non-turnaround schools in order to shield their children from reform-induced disruptions. If these parents also tend to invest more resources in education such that their children are more likely to have better schooling outcomes, their choice to avoid turnaround schools could lead us to find a smaller (or no) effect of the reform. School-level selection bias could occur if schools chosen for either the ASD or iZone systematically differ from non-turnaround priority schools prior to implementing any reforms. For example, if schools chosen for turnaround reforms already have strong leaders who were selected because of their ability to effectively implement reforms, these pre-existing school-level differences could positively bias our estimate of long-term reform effects. Our estimate of the reform effect is a before-after reform difference in outcomes for students who attended turnaround middle schools relative to the same difference for students who attended comparison priority schools. Finally, to control for the possible effect of the high school itself, we restrict the analysis in a way to compare students from ASD or iZone middle schools with students in the same high school who attended comparison middle schools.

Results

Table 1 below shows descriptive characteristics for students our sample who attended ASD, iZone, and comparison middle schools in the years after turnaround reforms began. Most students in our sample are Black (94 percent in the ASD and 85 percent in the iZones) and eligible for free or reduced-price meals (82 percent in the ASD and 81 percent in the iZones). About 2 percent of students who attended ASD middle schools and 5 percent of students who attended iZone middle schools were English language learners, and about one in five were eligible for special education services. These descriptive data show that students who attended ASD, iZone, and comparison middle schools were demographically similar.

Table 1. Descriptive Characteristics of Students who Attended Comparison, ASD, and iZone Middle Schools After Reforms Began

	Non-Turnaround Priority	ASD	iZone
Female	0.49	0.50	0.46
FRPM	0.80	0.82	0.81
ELL	0.07	0.02	0.05
SPED	0.18	0.21	0.19
Asian	0.00	0.01	0.01
Black	0.85	0.94	0.85
Hispanic	0.14	0.04	0.09
White	0.01	0.01	0.04
Observations	1737	536	1465

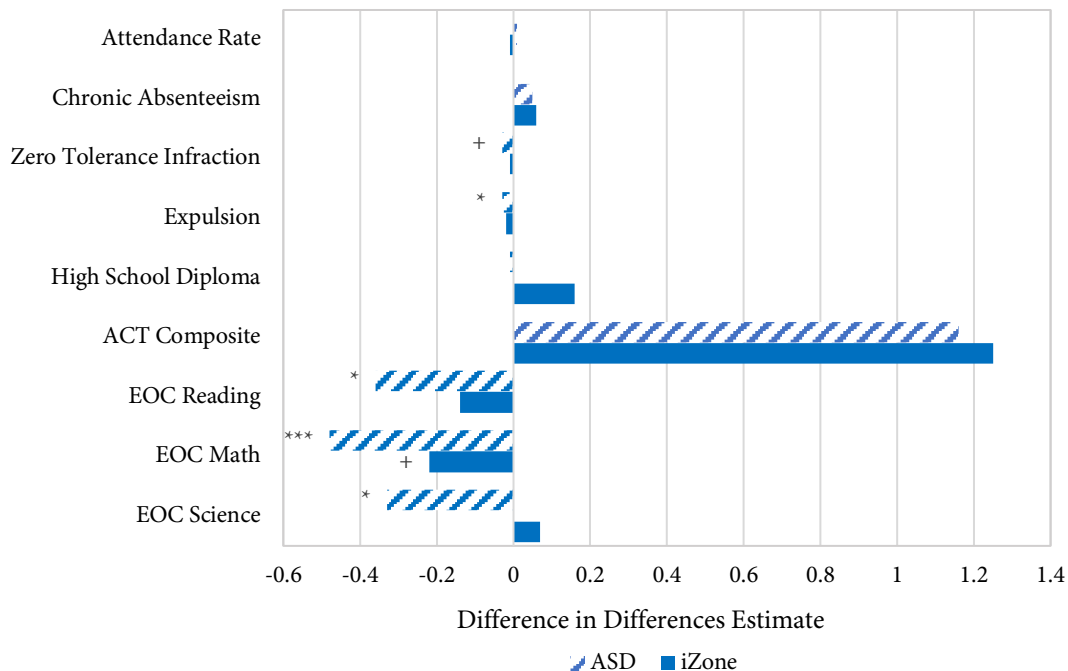
Note. FRPM is eligible for free or reduced price meals. ELL is English Language Learner status. SPED is eligibility for special education services.

Figure 1 shows results from our instrumented difference-in-differences models. The figure separates effects for students who attended ASD middle schools (striped bars) relative to students who attended iZone middle schools (solid bars). The effects graphed in the figure are interpreted as the pre-post difference for students who attended ASD or iZone middle schools minus the same pre-post differences for students who attended comparison middle schools. Any estimate left of zero suggests that students who attended an ASD or iZone middle school averaged lower scores on the outcome when compared with students who attended a comparison priority middle school. Any estimate to the right of zero suggests students attending either ASD or iZone middle schools had higher values of the outcome when compared with students who attended a

comparison priority middle school. However, only estimates statistically significant from zero should be interpreted as either a positive or negative effect of attending an ASD or iZone school.

Overall, the results shown in Figure 1 do not support positive long-term effects for either the ASD or iZones. For most of the outcomes we examined, the effect for students attending either ASD or iZone middle schools was not statistically different from zero, and the estimates that were statistically significant suggested primarily adverse effects. Specifically, we find marginally significantly negative effects on math EOC scores for students who attended iZone middle schools. Students who attended ASD middle schools performed worse on high school EOC exams than students who attended comparison middle schools. Disciplinary outcomes were the one area where we found evidence for beneficial effects. Students who attended ASD middle schools had a modestly lower probability of receiving a zero-tolerance disciplinary action and a lower probability of being expelled, relative to students who attended comparison middle schools.

Figure 1. Long-Term Effects for Students Attending All Years at an ASD or iZone Middle School



Note. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Conclusions

In past reports, we examined the performance of both ASD and iZone schools (Pham et al., 2019; Zimmer et al., 2017). In the short run, ASD schools did not produce either positive or negative effects on student achievement in any subject, year, or cohort, whereas iZone schools produced positive and significant effects over multiple years. However, these previous analyses have all targeted the effect of ASD and iZone reforms on students' outcomes measured while they were attending the turnaround school. In this research brief, we focus on an important, but unexamined, effect of turnaround reforms on students after they leave a turnaround school. We examined a wide range of high school outcomes including attendance, disciplinary actions, graduation, drop out, ACT score, and EOC scores for students who attended turnaround middle schools. Our results suggest that most of the long-term effects of turnaround are indistinguishable from zero, but in some instances, the effects were negative.

Students who went to ASD middle schools were modestly less likely to be receive negative disciplinary actions but also posted moderate to large negative results on high school EOC exams in all three subjects. This result contrasts with our previous analyses which found primarily no effect of ASD reforms on student test scores. We do not have sufficient data to definitively examine why ASD students fare worse than comparison students in high school, but part of the reason for this negative effect may be because the disruptive ASD reforms adversely affected student achievement in ways that lasted into high school.

Turning to students who attended iZone middle schools, our previous analyses found overall positive effects on student achievement. However, after students leave the iZone school, we find no evidence that the effects last. We find no significant positive effects on EOC student achievement and even observe a marginally significant negative effect in math. Again, while we do not have definitive evidence to explain these effects, a potential explanation is that iZone reforms may have brought about short-term student achievement gains but these gains were not sustained over the longer term.

Under the Every Student Succeeds Act (ESSA), new schools across Tennessee have already been identified for comprehensive support and improvement. These school improvement efforts are even more important now considering the system-wide interruptions from the COVID-19 pandemic, which likely had a disproportionately negative effect on vulnerable students in the state's lowest-performing schools. The state's current reform efforts under ESSA and the ongoing need means that policymakers must think carefully about how to best support students' long-term outcomes in the state's lowest-performing schools moving forward.

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