RESEARCH REPORT

Teacher Mobility in Turnaround Schools: A Summative Report From the First Two Cohorts of Partnership

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INTRODUCTION

A stable workforce of effective teachers is critical for successful school improvement (e.g. Cucchiara et al., 2015; Malen & Rice, 2012; Strunk et al., 2016). In particular, the capacity to recruit, develop, and retain highly effective educators is vital for the success of turnaround interventions— and high rates of teacher mobility can undercut improvement efforts (Henry et al., 2020). In Michigan, teacher retention is a hallmark of the Partnership Model's Theory of Change, a central focus for school and district leaders undertaking turnaround, and a persistent challenge for these same leaders.

A robust teacher workforce for turnaround schools and districts has become even more critical in the wake of the COVID-19 pandemic, which wrought substantial interruptions to student learning in Michigan and across the nation (Cohodes et al., 2022; Kilbride et al., 2022; Kogan & Lavertu, 2021; Kuhfeld et al., 2020, 2022). The COVID-19 pandemic shed new light on teacher labor markets, as research from around the country showed increased teacher stress and burnout (Madigan & Kim, 2021; Pressley, 2021), teacher turnover ramped up after the 2021-22 school year following pandemic lows (Camp et al., 2023; Goldhaber & Theobald, 2023), and new concerns arose about the pipeline fueling teacher labor markets (Choate et al., 2021; Nguyen et al., 2022).

In this report, we examine teacher mobility in the first two cohorts of Partnership schools and districts from a pre-pandemic period through fall 2022, including two pre-pandemic intervention years (two for Cohort 1 and one for Cohort 2) and three years since the onset of the COVID-19 pandemic. While we present trends over the full time period, we largely focus here on teacher mobility following the 2021-22 school year. We point interested readers to the Partnership Year 2, 3, and 4 reports for more in-depth discussions of teacher turnover findings in earlier years.

BACKGROUND

The Partnership Model emerged in spring 2017 under the leadership of then-state Superintendent Brian Whiston. The goal of Partnership is to improve student outcomes in low-performing schools by building the capacity of these schools and the districts or charter organizations that run them. A key mechanism for those improvements in the Partnership Theory of Change is increased educator retention (see Chapter 1 of the Year 4 Partnership Report for a summary of the most recent Theory of Change).

As of the end of the 2021-22 school year, two implementation cohorts (three identification rounds) of Partnership schools had implemented and completed the full Partnership intervention. Round 1 Partnership schools, which were identified in spring 2017 and began Partnership implementation in the 2017-18 school year, were selected for Partnership because they had been identified as Priority schools, meaning they were in the bottom 5% of schools on Michigan's Top-to-Bottom index for three consecutive years from 2013-14 through 2015-16. Round 2 Partnership schools were identified in fall 2017 and began implementation in 2018-19. Michigan Department of Education (MDE) selected schools for Round 2 if they were low performing in 2015-16 and experienced continued low achievement in 2016-17. Round 3 schools were identified in spring 2018 and also started implementation in 2018-19. These schools were the bottom 5% of schools on the state's Every Student Succeeds Act (ESSA) index system that was first released for the 2017-18 school year. We examine these three identification rounds as part of two implementation cohorts, referring to Round 1 as Cohort 1 and Rounds 2 and 3 together as Cohort 2 because they implemented on the same timeline.

Though the Partnership Model was intended to be implemented over a three-year period (see the Year 1 and 2 annual reports for a description of the Partnership Model as intended), the COVID-19 pandemic affected implementation and assessment of Partnership districts' progress. Thus, the first two cohorts of Partnership districts agreed to remain in Partnership through the 2021-22 school year to continue receiving supports from the Office of Partnership Districts (OPD) as well as additional state funds to support turnaround. Cohort 1 schools, therefore, remained under Partnership Agreements for five years while Cohort 2 schools remained for four. Ultimately, 48 of these schools (62% of the 77 that remained in Partnership through 2021-22) would be reidentified for Round 4, either because they were in the bottom 5% on the state index system in 2021-22 school year or they had a graduation rate below the 67% state threshold, or both (Singer & Cullum, 2023).

SAMPLE, DATA, AND MEASURES

We draw on two data sources—statewide administrative data to measure teacher turnover and educator survey data to better understand the mechanisms underlying that turnover. We summarize these data sources in Table 1.

TABLE 1. Data Sources			
Data	**Outcomes of Interest**	**Sample Size**	**Subgroups**
Statewide administrative data			
Educator administrative records 2013-14 through fall 2022	Mobility out of school and district Exit from teaching profession	45,175 teacher-year-observations	Teachers in schools identified as Cohort 1, Cohort 2, and comparison schools
Survey data			
Teacher surveys[1] Fall 2018 Fall 2019 Spring 2021 Spring 2022	Perceptions and experiences in Partnership schools and districts	**Fall 2018:** 2,718 participants (38.3% response rate) **Fall 2019:** 3,224 participants (49.2% response rate) **Spring 2021:** 2,342 participants (38.5% response rate) **Spring 2022:** 1,846 participants (29.9% response rate)	All schools in Partnership districts Partnership schools and non-Partnership schools in Partnership districts Cohort 1 and 2 Partnership schools
Principal surveys[1] Fall 2018 Fall 2019 Spring 2021 Spring 2022	Perceptions and experiences in Partnership schools and districts	**Fall 2018:** 81 participants (28.6% response rate) **Fall 2019:** 88 participants (37.8% response rate) **Spring 2021:** 116 participants (46.6% response rate) **Spring 2022:** 71 participants (29.0% response rate)	All schools in Partnership districts Partnership schools and non-Partnership schools in Partnership districts Cohort 1 and 2 Partnership schools

[1]*Teacher and principal surveys were administered to teachers and principals in all schools in Partnership districts, regardless of individual schools' Partnership status.*

Administrative Data

We draw from eight years of statewide administrative data from 2014-15 through fall 2023 provided by MDE and the Center for Educational Performance and Information (CEPI). Figure 1 shows the years we observe teacher turnover in the context of Partnership identification and implementation. Specifically, we measure turnover that occurred up through the 2021-22 school year—the fifth year of Partnership implementation for Cohort 1, the fourth year of Partnership implementation for Cohort 2, and the third year in which teacher turnover was affected by the

COVID-19 pandemic. We observe two years of employee data prior to Partnership identification for Cohort 1 and three years prior to identification for Cohort 2.

FIGURE 1. Partnership Identification and Implementation Timeline
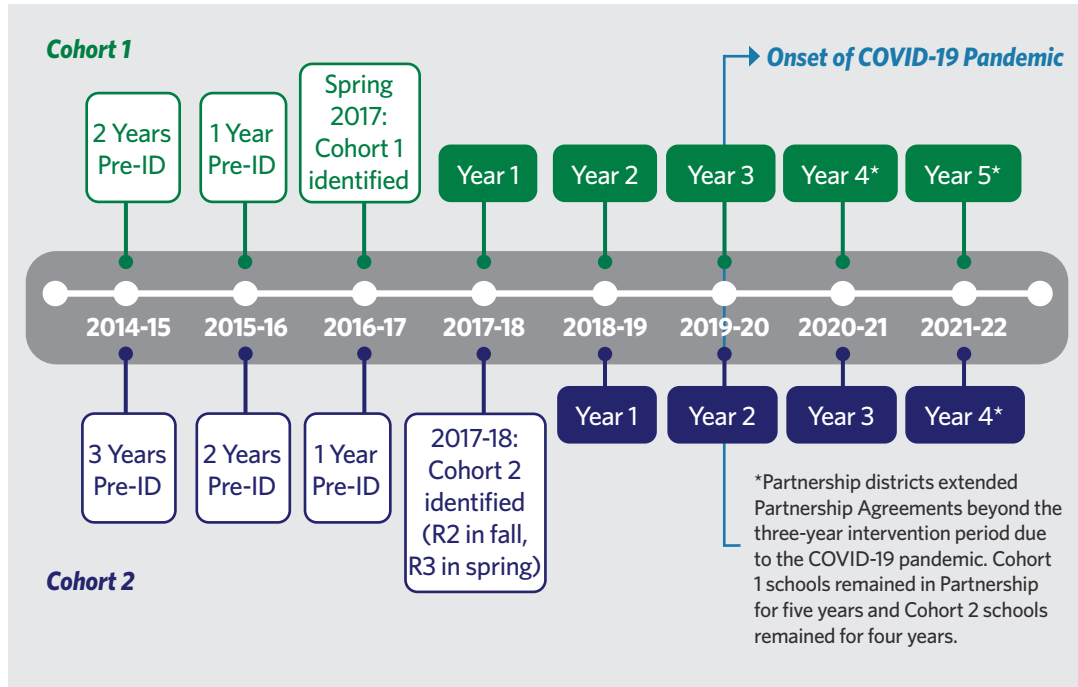
The analytic sample from the administrative data includes teachers in Partnership schools and a set of similarly low-performing near-selected schools that were not identified for Partnership in any of the three identification rounds. We generate our comparison group of near-selected schools as those that were low performing in the same timeframe as Partnership schools were selected but were not targeted for intervention. We include in the near-selected comparison group those schools that were: (1) in the bottom 5% on the state index system in 2015-16 but not selected for Partnership, and (2) in the 6th to 10th percentile on the state's ESSA index in 2016-17.

For the purposes of measuring teacher mobility, we restrict the sample to just teachers who have an assignment code as a teacher for at least 25% of the school year and work in only one school.[1] In total, the analytic sample includes 120 Partnership schools across 37 districts and 204 comparison schools in 133 districts, constituting 45,175 teacher-year observations representing 13,466 unique teachers in 323 unique schools.

Table 2 provides descriptive statistics on Partnership schools, comparison schools, and all other schools in the state from 2016-17, the year before the first cohort began implementation. The top panel provides teacher characteristics, highlighting that about half of teachers in Partnership schools are Black, compared with about 22% in comparison schools and less than 3% in other schools throughout the state. The bottom panel provides school-level student characteristics, underscoring that Partnership schools (and Cohort 1 in particular) serve a disproportionate share of the state's Black and economically disadvantaged students, respectively.

TABLE 2. Baseline Descriptive Statistics on Partnership Teachers and Schools				
	Cohort 1	**Cohort 2**	**Comparison**	**All other**
Teacher characteristics				
Black	0.498 (0.500)	0.470 (0.499)	0.217 (0.412)	0.029 (0.167)
Latino	0.017 (0.130)	0.016 (0.125)	0.027 (0.162)	0.012 (0.108)
American Indian, Asian, Pacific Islander, 2+ races	0.034 (0.183)	0.044 (0.206)	0.029 (0.167)	0.018 (0.132)
White	0.451 (0.498)	0.470 (0.499)	0.727 (0.445)	0.942 (0.235)
Male	0.227 (0.419)	0.195 (0.396)	0.218 (0.413)	0.237 (0.425)
School-level student characteristics				
Black	0.901 (0.146)	0.795 (0.242)	0.553 (0.357)	0.134 (0.225)
Latino	0.040 (0.084)	0.070 (0.144)	0.099 (0.174)	0.078 (0.109)
American Indian, Asian, Pacific Islander, 2+ races	0.028 (0.037)	0.050 (0.073)	0.059 (0.057)	0.079 (0.086)
White	0.031 (0.051)	0.085 (0.137)	0.290 (0.309)	0.709 (0.262)
Economically disadvantaged	0.858 (0.067)	0.876 (0.090)	0.813 (0.159)	0.510 (0.245)
English learner	0.024 (0.062)	0.060 (0.137)	0.101 (0.207)	0.061 (0.124)
Special education	0.198 (0.086)	0.178 (0.069)	0.145 (0.077)	0.180 (0.198)
Enrollment	477.5 (201.5)	425.2 (253.1)	404.5 (315.7)	444.23 (341.4)

Note: Descriptive statistics are from 2016-17, the year before the first cohort implemented. Cells contain means with standard deviations in parentheses. Teacher characteristics are at the teacher level and student characteristics are presented as school-level means.

We examine three dichotomous nested measures of teacher turnover: (1) leaving the school regardless of pathway out, (2) leaving the district, and (3) leaving the Michigan public education system entirely. We construct each of these measures for school year t based on where the teacher is observed in fall of school year $t+1$.

We include baseline covariates representing school-level characteristics of the student body, including the proportion of students by race/ethnicity, economic disadvantage, English learner status, special education status, and school enrollment. We also include covariates for teacher race/ethnicity (Black, Latino, other race, with White as the reference category) and gender (male, with female as the reference category).

Survey Data

A key component of EPIC's multi-year study of the Partnership Model is an annual survey of teachers and principals in Michigan's Partnership districts. To date, we have conducted four waves of educator surveys, in the late fall semesters in 2018 and 2019 and the early spring semesters in 2021 and 2022. In each of these waves, the aim was to survey all teachers and principals in Partnership districts about their experiences, perspectives, and opinions on what is happening in their schools and districts. Because an aim of the Partnership Model is for districts to direct their efforts and resources toward their lowest performing schools (that is, their Partnership schools), we survey those who work in identified Partnership schools as well as those who do not. This approach allows us to gain insight into the different experiences and perceptions of educators in Partnership and non-Partnership schools within a given year and over time.

This report draws only on teacher survey data from spring 2021 and 2022. Table 3 provides the number of teacher respondents and response rates for teachers in these past two years. For additional details on response rates by subgroup overall and over time, please refer to Section 2 of the Year Four Report.

TABLE 3. Partnership Survey Sample and Response Rates		
	Response rate	**Total responses**
Wave 3 (2020-21)	38.5%	2,342
Wave 4 (2021-22)	29.9%	1,844
Total across two years	34.2%	4,186

Note: Percentages exclude individuals who responded that they were not eligible (i.e., not classroom teachers or principals) or who opted out. Percentages represent the share of respondents with at least partial responses (i.e., answered at least one question beyond the introductory questions).

Finally, we also drew from teachers' open-ended responses on the Wave 4 survey. At the end of the survey, we asked, *"If you have any additional comments, please feel free to write them in the space provided below."* About 500 teachers (or about 27% of respondents) provided substantive comments. Table 4 compares observable characteristics of teachers who did and did not provide responses in this optional field. Black teachers were less likely and White teachers were more likely to provide an open-ended response. In addition, teachers who reported perceptions of greater pandemic-related challenges, more negative culture and climate, and more disruptions due to COVID-19 were somewhat more likely to provide open-ended responses than their peers who reported more positive perceptions on these measures. Open-ended responses should therefore be interpreted with caution, as they may disproportionately reflect the experiences and concerns of White teachers more than Black teachers and teachers who perceived less positive schooling conditions.

TABLE 4. Differences Between Teachers Who Did and Did Not Provide Open-Ended Survey Responses		
	No open-ended	**Yes open-ended**
Demographics		
Female	78%	82%
Black	35%	23%***
Latino	3%	4%
White	58%	69%***
Other race	4%	5%
Grade level		
K-2	35%	33%
3-5	34%	33%
6-8	32%	34%
9-12	26%	23%
Culture/climate perceptions (% who agreed)		
Staff works to build relationships with parents	71%	68%
Students listen to staff	46%	38%***
High rate of staff turnover	34%	47%***
High rate of student mobility	43%	50%**
Staff share beliefs about central mission of school	65%	61%
COVID-19-related challenges (% who reported major/greatest challenge)		
Establishing emotional connections with students	10%	15%**
Building trust with students	9%	13%**
Maintaining instructional continuity	31%	38%**
Providing special education services	23%	26%
Educating students who don't consistently attend	65%	78%***
Classroom management	15%	23%***
Differentiating instruction	38%	50%***
Perceived effect of COVID-19 on students (% who agreed)		
Students are struggling with academic content	78%	83%*
Students are struggling with appropriate behavior	70%	79%***
COVID-19 interruptions (how often in past month)		
Individual student quarantines	30-47%	34-51%*
Whole-class quarantines	14-25%	14-25%
School closures due to staff illness absences	26-43%	31-48%***
School closures due to other staff absences	12-22%	13-23%
School closures due to COVID-19 outbreak	17-28%	19-29%

Note: Cell percentages reflect percent of respondents who did (first column) and did not (second column) enter text in the open-ended response question. Stars indicate statistical significance from t-test of differences between the two groups. ***p<0.001, ** p<0.01, *p<0.05

METHODS

We use econometric models to estimate the effects of Partnership on teacher mobility using the statewide administrative data and then run descriptive analyses on the survey data to unpack the mechanisms underlying those effects.

Administrative Data

To examine the effects of Partnership on teacher mobility before and during the COVID-19 pandemic, we estimate event study models examining the extent to which the probability of turnover deviates from pre-identification trends for Partnership schools relative to our set of near-selected comparison schools. To do so, we pool data from the two cohorts and the comparison group and create a series of year indicators centered at the identification year for each cohort and then estimate event study models with school and year fixed effects. Because there is evidence from prior research of heterogeneous effects by cohort (Burns et al., 2023), and because there is reason to expect differential effects before and during the COVID-19 pandemic (which initially affects the two cohorts in different implementation years), we estimate two-way Mundlak regressions (Wooldridge, 2021) allowing for separate effects in each of the cohorts before and during the COVID-19 years. For technical detail on our methods, please see Appendix A.

Intuitively, these event study estimates represent the difference in predicted probability of teacher turnover from what would be expected in the absence of Partnership—or the estimated effect of Partnership on teacher turnover. Thus, a positive estimate would suggest that Partnership *increased* turnover, while a negative estimate would suggest that Partnership *decreased* turnover. In the text, we characterize these as percentage point changes. For example, we would interpret a coefficient estimate of 0.10 as a 10 percentage point change.

For each outcome, we present event study plots showing estimated effects for each cohort of Partnership schools, respectively, in each year. In these plots, the vertical axis represents the coefficient estimate and the horizontal axis represents the year relative to the cohort's identification year. The school year is included in the relevant cohort's color (green for Cohort 1 and blue for Cohort 2) beneath the implementation year.

The markers denote the coefficient estimate and the spikes show the upper and lower bounds of the 95% confidence interval around that estimate. When the spikes intersect with the horizontal zero line, we cannot say with 95% confidence that the estimate is statistically different from zero. When both the upper and lower bounds are above the zero line, the estimate is statistically significant and positive. When both the upper and lower bounds are below the zero line, the estimate is statistically significant and negative.

We show pre- and post-implementation estimates. For post-implementation estimates to be interpreted as a causal effect of Partnership, the pre-intervention estimates should not be statistically significant. Evidence for this is reflected in the pre-intervention estimates on the

plots (all confidence intervals intersect with the zero line). Further evidence that the models meet necessary identification assumptions are provided in the regression estimates in Appendix B.

Survey Data

To better understand the mechanisms underlying our estimated effects, we calculate descriptive statistics over time from teacher and, where relevant, principal survey items. We weight all analyses using teacher and principal survey weights constructed separately by year. We calculate the sampling weight using the school-level coverage of our sampling frame and calculate the nonresponse weight as the inverse probability of response within school (for teachers) or district (for principals). We do so based on demographic characteristics (race/ethnicity, gender) for both teachers and principals, certification type (i.e., elementary, secondary) for teachers, and Partnership identification round for principals. We run weighted overall means by year, *t*-tests comparing Cohort 1 and 2 means in each year, and design-based *F*-tests comparing Cohort 1 and 2 on dichotomous outcomes.

Finally, we conducted a qualitative analysis of teachers' open-ended survey responses. We treat teachers' open-ended responses as a glimpse into the salient issues that they wanted to address. We analyze the responses with a two-step process. First, we use qualitative coding to categorize the responses into topical categories (e.g., accountability, COVID-19, culture/climate, staffing). We then wrote analytic memos to summarize the major themes in each category. Several themes emerged in teachers' responses, including concerns about the ongoing effect of the COVID-19 pandemic on teacher working conditions and students, persistent staffing and resource issues, pressure around student achievement and teacher evaluations, and low morale among educators. For this report, we synthesized findings across these themes to help explain the overall teacher mobility patterns.

FINDINGS

Finding 1: After Dipping to the Lowest Levels in Years, Turnover Increased More Sharply in Partnership and Other Low-Performing Schools Than in the Rest of the State

Teacher turnover from schools and districts increased statewide after the 2021-22 school year, with the largest increases in low-performing schools including Partnership schools (see Figure 2).[2] These increases were steepest in Partnership schools, which had experienced some of the sharpest declines in the state during the pandemic-affected 2019-20 and 2020-21 school years. By the end of the 2021-22 school year, school turnover in both cohorts of Partnership schools had climbed back up to about 20%—rates similar to comparison schools and lower than pre-pandemic and pre-Partnership years. District turnover had increased to about 12.5%—slightly lower than comparison schools and similar to rates immediately pre-pandemic, but still lower than pre-Partnership highs.

FIGURE 2. Average Teacher Turnover from School and District in Partnership Schools, Districts, and Comparisons
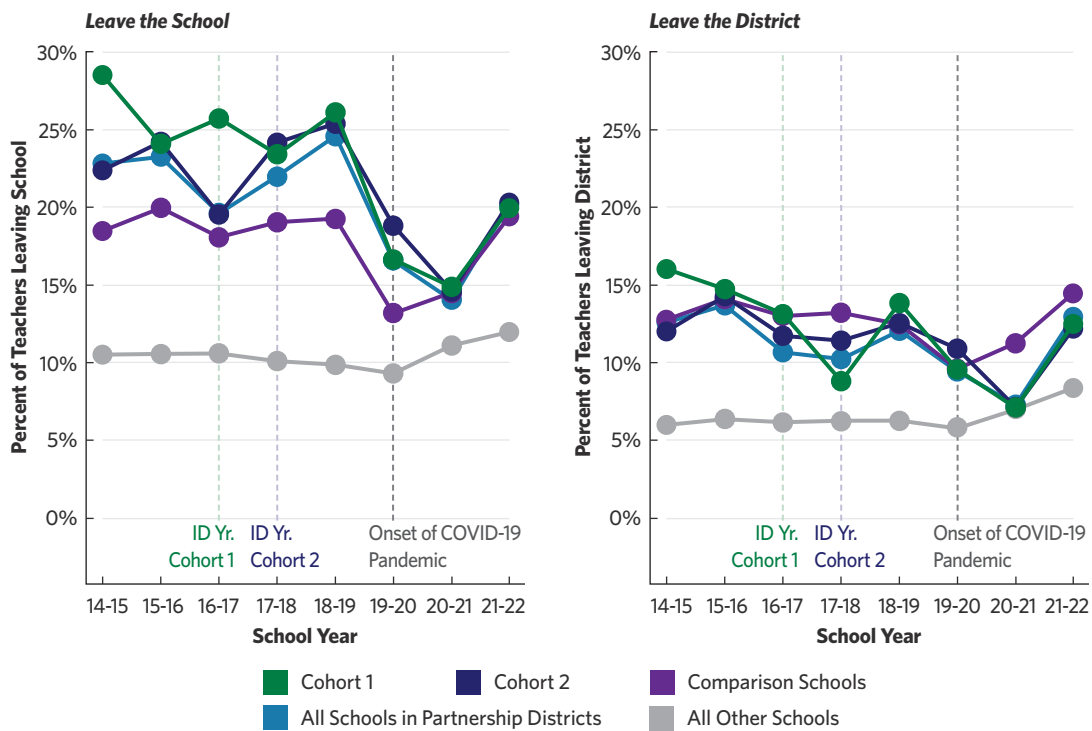
Note: Marker heights represent average turnover from school and district, respectively. Leaving the school is operationalized as leaving the school for any pathway out; it also includes teachers leaving the district and leaving Michigan public education entirely. Leaving the district also includes teacher leaving Michigan public education. The teacher sample is restricted to just those teachers assigned to a single school.

Qualitative data from open-response survey questions provide some insight into these increases in turnover. For many teachers in Partnership districts, 2021-22 was a transition back to in-person learning after a (mostly) virtual learning experience the prior year (Strunk et al., 2022). Even though 2021-22 was touted as a "return to normal," teachers described 2021-22 as a distinctly challenging school year due to heightened student needs and substantial challenges meeting those needs. In addition, teachers described a great deal of pressure and expressed frustration about how district leaders were making decisions. Finally, teachers described very low morale—both for themselves and amongst their colleagues; we provide more detail on this final issue in the next section.

A Challenging Return to School

Teachers frequently referenced the heightened academic needs of their students. They recognized the importance of addressing pandemic-induced interrupted learning but stressed that there were substantial challenges to doing so. Some teachers noted an increase in disruptive student behavior related to unmet social-emotional needs. For example, one teacher wrote, *"We came back to business as usual not accounting for the learning gaps and social emotional issues the students would be facing."* Another described how COVID-19 pandemic trauma permeated the four walls of the classroom, *"I am aware that many of my students have dealt with great trauma, but I don't know how I am supposed to support their needs and still teach them."*

Other teachers emphasized the disruptive effect of high rates of chronic absenteeism. For example, one teacher wrote, *"The largest challenge this school year has been student attendance. Whether COVID-19 related or not, students that don't come to school aren't getting adequate instruction time which makes it impossible to close the gaps we're seeing."*

In addition, teachers felt that their schools were understaffed and under-resourced, especially relative to the magnitude of the issues they faced coming out of the COVID-19 pandemic. One teacher, for example, wrote about the need for more robust staffing to provide academic and social-emotional supports in the wake of the COVID-19 pandemic's negative effects:

> *There are not enough people teaching, including certified teachers, but more importantly, assistants of any kind to do Tier II and III instruction, to meet with kids who need emotional and behavioral support. The needs of kids and families are greater than ever and there are less staff than ever to meet those needs. I don't care how much I get paid or how great our curriculum and materials are, or how great (or terrible) our leadership is, if there aren't actual adults to meet with kids to support them.*

Similarly, another teacher wrote, *"There is very little support with small groups that we need, and kids came in knowing even less than before since they were virtual."* These quotes first and foremost reflect the difficult circumstances for Partnership districts in the 2021-22 school year. The effects of the COVID-19 pandemic were particularly acute in these districts, from higher rates of illness and death to greater levels of educational disruption (Harbatkin et al., 2022; Strunk et al., 2022). The ongoing consequences for students—from interrupted learning to decreased attendance and increased social-emotional needs—meant a very difficult task for teachers even as students returned to in-person learning.

Pressure to Perform

The challenges that Partnership district teachers faced in the 2021-22 school year were exacerbated by a perceived pressure to perform. First, teachers expressed feeling a great deal of pressure from their schools and districts, especially around accelerating student learning to enable them to "catch up." One teacher wrote, *"My workload is huge, the pressure is unbelievable."* Another wrote, *"I feel a lot of pressure from the district, which transforms into severe anxiety and depression."*

In some comments, teachers made specific reference to teacher evaluations, which lawmakers had debated suspending for the 2021-22 school year due to the ongoing negative effects of the COVID-19 pandemic (Robinson, 2022). As one teacher explained, *"Teachers are stressed about the teacher evaluation process. Within our district, student's test scores account for 40% of their overall evaluation but attendance and other pandemic-related issues are a major cause of learning loss. We are teachers, not magicians."* Similarly, another teacher wrote, *"These evaluations are causing teachers stress, when teachers deal with enough stress working with students who have been victims of a lot of trauma."* In the context of learning interruptions due to the pandemic, non-academic challenges, and increasingly difficult working conditions, the pressure to boost student achievement and accountability via evaluation systems were even more stressful than in prior years.

Frustration With District Decision-Making

Throughout teachers' open-ended responses, they expressed a negative perception of district-level decision-making. As one teacher wrote, *"I feel like our district has ignored the pandemic and is doing 'business as usual'."* This frustration with district-decision making was often linked to what teachers characterized as a lack of voice in district decisions. As one teacher wrote, *"It was all administration driven with no teacher input…It is time to start listening to the educator that's in the classroom."* Teachers also expressed disappointment with poor communication from their administration. For example, one teacher wrote, *"Leadership does not communicate well with teachers and leadership within the school and district level does not seem to effectively communicate prior to things happening. We often find out critical information after things need to take place."* Teachers' negative view of district-level decisions and communication around those decisions thus may have further exacerbated their negative experiences.

In sum, increased teacher turnover in Partnership and other low-performing schools may have been driven by the difficult circumstances of the 2021-22 school year. Teachers recognized the urgency of addressing students' learning needs after the disruptions of the COVID-19 pandemic but expressed that their schools were unprepared to address new challenges related to student behavior and attendance. They also reported feeling understaffed and under-resourced for the level of academic support and intervention they were expected to provide. These stressors were exacerbated by a great deal of pressure from school and district leaders around instruction and by a sense that district-level decision-makers were not sensitive to their concerns or circumstances.
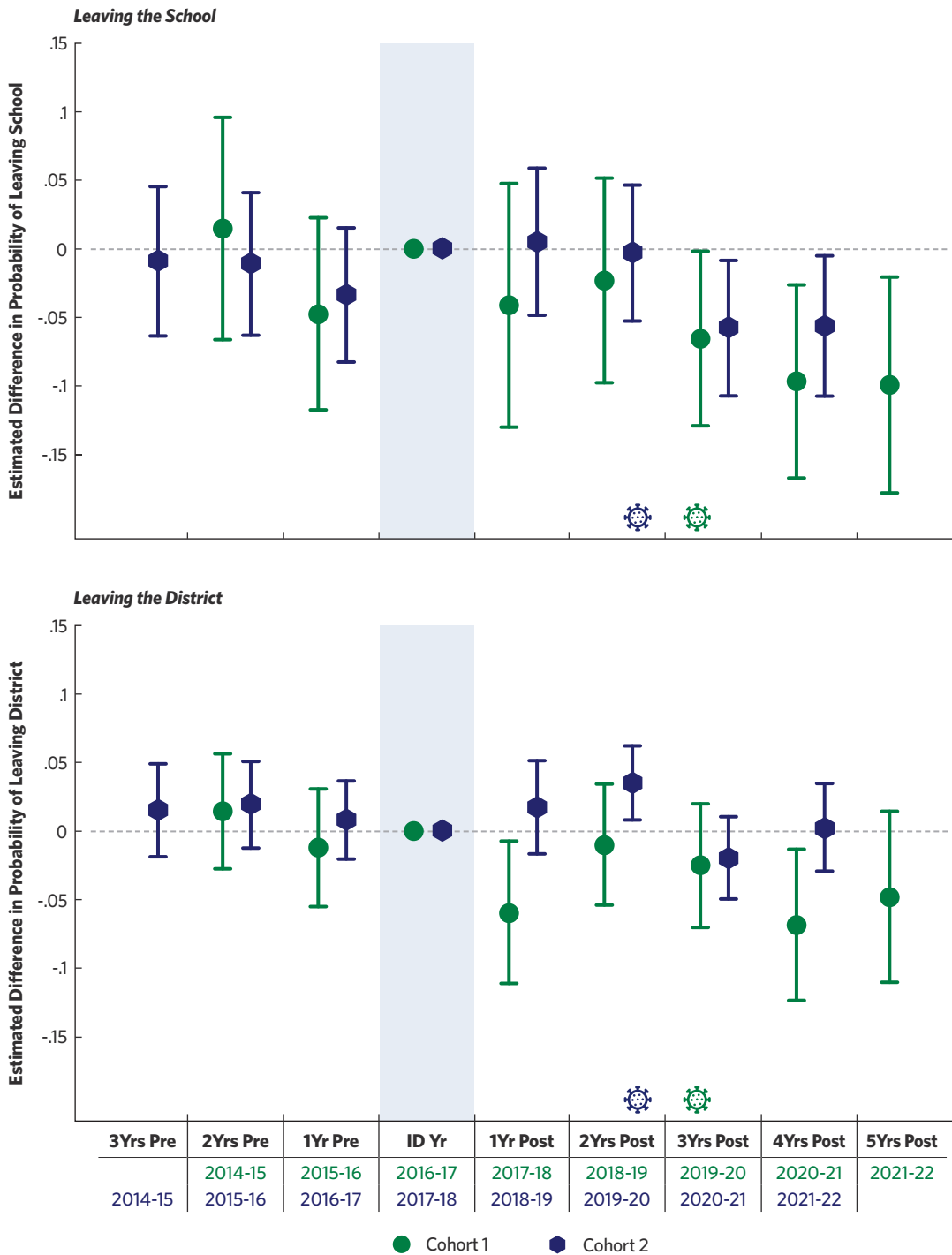
Finding 2: Though Turnover Increased from 2020-21 to 2021-22, Partnership School Teachers Were Less Likely Than Comparison Teachers to Leave Their Schools Coming Out of the COVID-19 Pandemic

Though school and district turnover increased in 2020-21, the Partnership Model may have had a protective effect on teacher retention in both cohorts of Partnership schools during the COVID-19 pandemic. Figure 3 presents our event study estimates (for explanation of interpretation refer to the earlier Methods section). The first panel shows that relative to comparison schools, Cohort 1 experienced decreased school turnover in each of the three years since the onset of the pandemic and Cohort 2 experienced decreased school turnover in each of the past two years. Specifically, in each of the past two years, we find that relative to pre-intervention trends, school turnover decreased by about 10 percentage points in Cohort 1 and 6 percentage points in Cohort 2. The decrease for Cohort 1 began in the 2019-20 school year, dropping by nearly 7 percentage points.

The second panel shows differences in Partnership effects on district turnover between the two cohorts. In the pre-pandemic implementation years, we find evidence of *decreased* district turnover among Cohort 1 teachers but *increased* turnover among Cohort 2 teachers. Specifically, district turnover from Cohort 1 schools decreased by about 6 percentage points in the first Partnership year before returning to pre-Partnership levels in the second year. In Cohort 2's only pre-pandemic Partnership year, we do not find the same decrease; in fact, district turnover increased by about 2 percentage points (though this was not a statistically significant increase).

Then, in each pandemic year, Cohort 1 district turnover decreased, though the estimate was only statistically significant in 2020-21. Cohort 2 district turnover increased in the first pandemic year and then dropped back into pre-intervention trends in each of the past two years.

FIGURE 3. Event Study Estimates of the Effect of Partnership on School and District Turnover

Leaving the School

Leaving the District

	3Yrs Pre	2Yrs Pre	1Yr Pre	ID Yr	1Yr Post	2Yrs Post	3Yrs Post	4Yrs Post	5Yrs Post
		2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	

● Cohort 1   ⬢ Cohort 2

Note: Circular and hexagonal markers denote coefficient estimates from extended two-way fixed effects Mundlak event study models and spikes denote 95% confidence intervals. The COVID-19 markers along the horizontal axis denote the onset of the COVID-19 pandemic (i.e., during the 2019-20 school year, or in green at "3Yrs Post" for Cohort 1 and in blue at "2Yrs Post" for Cohort 2).

Finding 3: Effective School Leaders May Have Helped to Retain More Teachers in Cohort 1 Schools; Sense of Inadequate Pay and Demanding Workload May Have Induced More Turnover in Cohort 2

We turn next to understanding why Partnership appeared to have a more positive effect on teacher retention in Cohort 1 than Cohort 2. Figure 4 displays the extent to which teachers reported that five factors played into their plans to stay in their school (left panel) or leave their district for any pathway out (right panel) by cohort across the 2020-21 and 2021-22 school years.[3]

About 60% of Cohort 1 teachers citing plans to stay reported that school leadership was a major or primary factor in those plans.
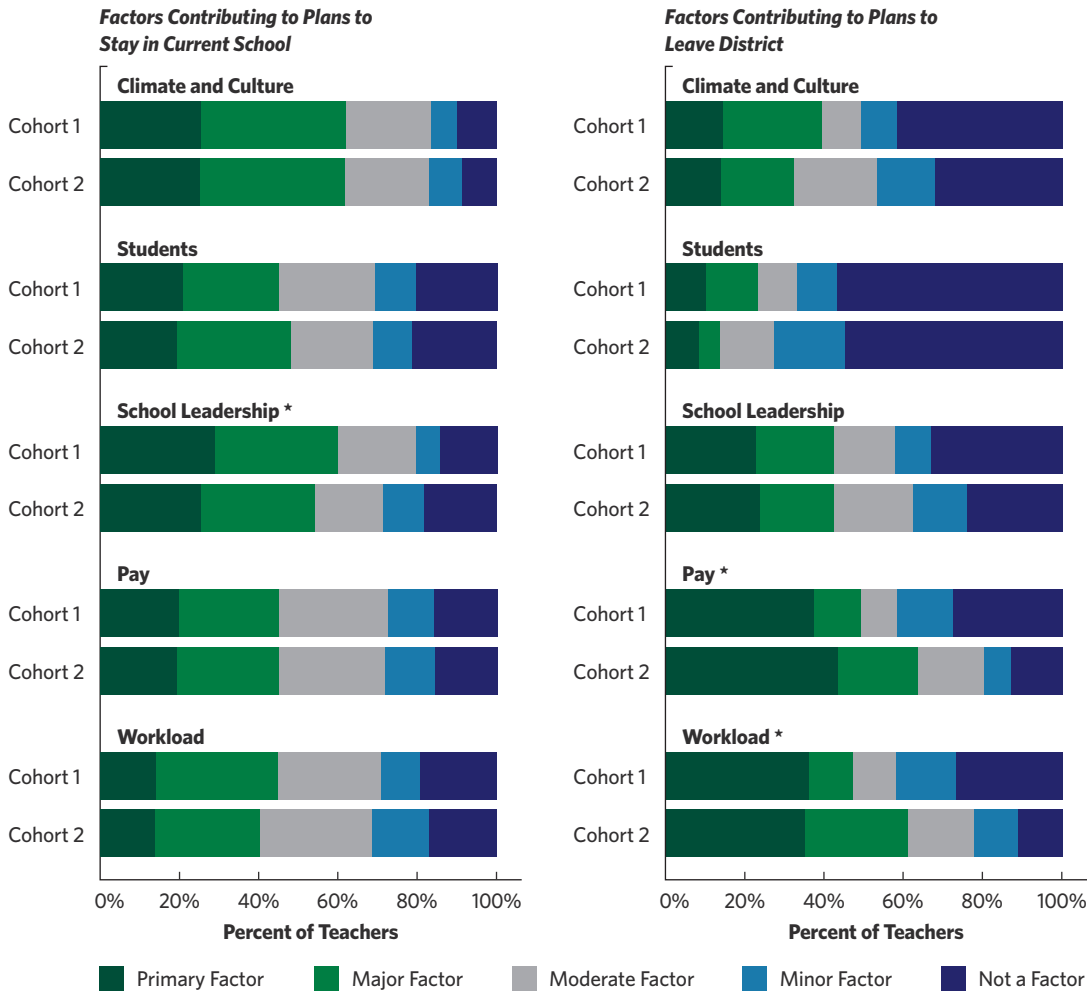
Some of the most salient cohort differences are in school leadership. In particular, the left panel shows that about 60% of Cohort 1 teachers citing plans to stay reported that school leadership was a major or primary factor in those plans, compared with about 50% of Cohort 2 teachers. Meanwhile, only about 20% of Cohort 1 teachers reported that school leadership was a minor factor or less in their plans to stay, compared with about 30% of Cohort 2 teachers. The right panel shows that there was no difference between cohorts in the share of teachers saying school leadership contributed to plans to leave their district; 42% of intended leavers in both cohorts, respectively, said that school leadership was a major or primary factor. On the other hand, more intended leavers in Cohort 1 (one-third) than Cohort 2 (about 23%) reported that school leadership was *not* a factor.

This aligns closely with previous reports showing that Cohort 1 teachers have consistently reported having more effective school leadership than their Cohort 2 peers (see Figure 7.27 of the Year 4 Partnership Report for details). Together, these findings suggest that Cohort 1 teachers perceived their principals more positively than Cohort 2 teachers, were more likely to report plans to stay because of their principals, and were less likely to report plans to leave because of their principals.

The right panel also highlights that Cohort 2 teachers reporting plans to leave their district were more likely than Cohort 1 teachers to cite pay and workload as major or primary contributors to that decision. In particular, about six in 10 Cohort 2 teachers reported that pay and workload, respectively, were major or primary factors in their plans to leave their district—compared with just under half of Cohort 2 teachers.

FIGURE 4. Reported Factors Contributing to Plans
to Stay in School and Leave District

*Factors Contributing to Plans to
Stay in Current School*

*Factors Contributing to Plans to
Leave District*

Primary Factor   Major Factor   Moderate Factor   Minor Factor   Not a Factor

Note: Data are from 2020-21 and 2021-22 teacher surveys. Left panel includes 1,464 teachers (525 Cohort 1 and 939 Cohort 2) reporting plans to stay in their school, either in their current position or in another role. Right panel includes 218 teachers (74 Cohort 1 and 144 Cohort 2) reporting plans to leave their district for any pathway out. Asterisks indicate that the difference in the distribution of responses between cohorts is statistically significant (p<0.05).

Finding 4: Teacher Exits From the Michigan Public School System Increased Sharply in Partnership Schools—Escalating to Pre-Partnership Levels in Cohort 2

Along with school and district turnover, exits from the profession also increased after the 2021-22 school year. Figure 5 shows that exits have followed similar patterns to school and district turnover in each of the past two years, with declines continuing in the 2020-21 school year in Partnership schools and districts even as they ticked upward in comparison schools and the rest of the state, followed by a sharp upswing in Partnership schools and districts in 2021-22.[4]

These findings suggest that any protective effect Partnership may have had on school and district turnover did not appear to extend to keeping teachers in the profession. To the extent that exits from the profession continue to climb, low-performing schools like Partnership schools are likely to experience the most damaging effects of weakened labor markets given existing recruitment challenges (see prior annual Partnership reports for the details).

FIGURE 5. Average Teacher Turnover from Michigan Public School System in Partnership Schools, Districts, and Comparisons
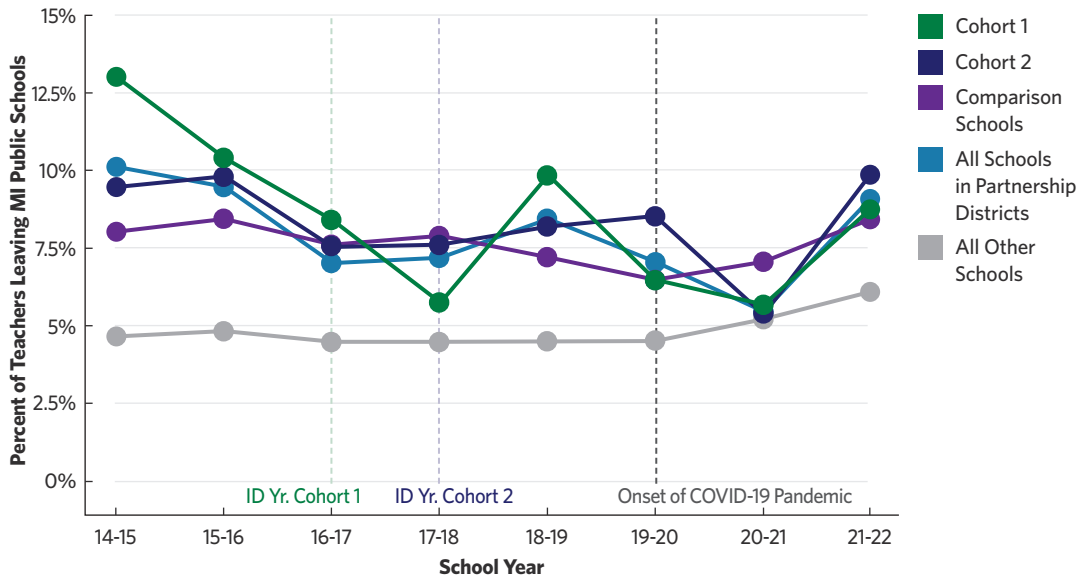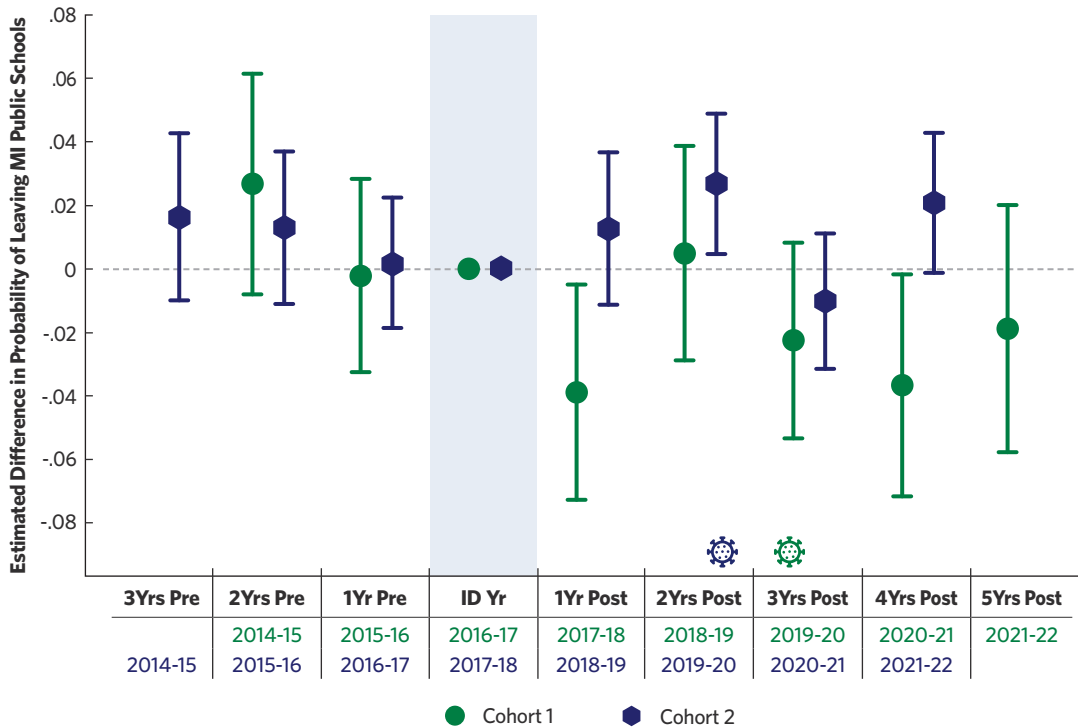

Note: Marker heights represent average turnover from Michigan public education. The teacher sample is restricted to just those teachers assigned to a single school.

While Figure 5 illustrates descriptive trends over time, event studies provide the estimated effect of Partnership on the probability of exiting the profession, relative to similarly low-performing comparison schools. Figure 6 shows these results (for explanation of interpretation refer to the earlier Methods section). Consistent with the descriptive findings, after a year of decreased exits in Cohort 1 in 2020-21, we do not detect a protective effect of Partnership on keeping teachers in the profession in 2021-22. In Cohort 2, we find that teachers were about 2 percentage points *more* likely ($p<0.10$) to leave the profession in 2021-22 relative to teachers in comparison schools.

The survey results we presented earlier, under Finding 3, may help to explain some of these cohort differences. In particular, of the 136 teachers reporting plans to leave Michigan education (either to retire or shift to another field) in the past two years, those in Cohort 2 were more likely to cite pay and workload, respectively, as a major or primary factor in that decision than those in Cohort 1 ($N=46$). Though not shown here, there were small but statistically significant differences across cohorts in job satisfaction over the past two years, with 66% of Cohort 1 teachers compared with 62% of Cohort 2 teachers agreeing that they were satisfied in their job. Together, these findings suggest that working conditions may have contributed more to decisions to leave Michigan public schools among Cohort 2 relative to Cohort 1 teachers.

Our qualitative findings above may help to explain some of the factors contributing to increased teacher exits in Partnership schools and districts. Additionally, increases in exits from the profession may stem from diminishing teacher morale.

FIGURE 6. Event Study Estimates of the Effect of Partnership on Exits From Michigan Public Schools

	3Yrs Pre	2Yrs Pre	1Yr Pre	ID Yr	1Yr Post	2Yrs Post	3Yrs Post	4Yrs Post	5Yrs Post
		2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	

● Cohort 1   ⬢ Cohort 2

Note: Circular and hexagonal markers denote coefficient estimates from extended two-way fixed effects Mundlak event study models and spikes denote 95% confidence intervals. The COVID-19 markers along the horizontal axis denote the onset of the COVID-19 pandemic (i.e., during the 2019-20 school year, or in green at "3Yrs Post" for Cohort 1 and in blue at "2Yrs Post" for Cohort 2).

Low Educator Morale

Teachers described low morale, both for themselves and among their colleagues. Although teachers expressed a love for and commitment to teaching, they simultaneously reported feeling overworked and under-supported. The following quote, for example, reflects how teachers connected the challenging working conditions to their professional sense of self:

> It feels like every day is an uphill battle that I am fighting alone. I have never been one
> to quit anything, and teaching is my passion, but this is not teaching. This is hours
> of endless paperwork, this is social work, this is counseling, this is parenting, this is
> babysitting, this is coaching, this is everything but teaching. The districts in Michigan
> need to truly rethink how we have our education system. It is not an accident that we
> have no teachers, and the numbers are declining. It is not an accident that districts
> like mine are being left behind…I truly can't imagine myself doing anything other
> than teaching, but this year I have made myself sick with the stress and anxiety of

> *everything extra put on us. I love my job, but my job doesn't love me and without*
> *change, I will have to seek other career opportunities.*

In addition to these kinds of personal expressions of low morale, teachers also expressed concerns about their colleagues. As one veteran teacher wrote, *"I only have a couple of years until retirement, so I can hang in there, but I am so depressed when I think about where education is headed. If I was younger, I would definitely be looking for a career change."* Again, teachers connected concerns about their colleagues' morale to working conditions as well as to pay level. As one teacher wrote:

> *I fear that we will face long-term staff shortages [due to] the toll and demands of the*
> *job, in addition to pay that does not compensate the work... [we] simply cannot lure*
> *candidates, let alone exceptional candidates which is what our students deserve.*

These findings on low teacher morale echo those from national research on teacher stress and well-being (Steiner et al., 2022). Difficult working conditions, dissatisfaction with district leadership, and low morale—all of which were salient in our open-ended survey data—help to explain the increase in teacher turnover in Michigan, especially in Partnership and other low-performing districts.

POLICY IMPLICATIONS

Partnership May Help to Decrease Teacher Turnover

Together, our findings suggest that Partnership may have had a protective effect on teacher turnover since the onset of the COVID-19 pandemic. This finding is promising for these first two cohorts of Partnership schools as well as the third cohort, identified in 2023. However, Partnership's positive effects on teacher retention largely emerged after the pandemic struck. It is therefore unclear whether the Partnership Model can improve teacher retention in more typical times. Cohort 3 Partnership implementation will need an explicit focus on teacher retention, including taking steps to raise teacher job satisfaction, improve culture and climate, and reduce workload.

Improvement Efforts Should Focus First on Recruiting and Training Strong Turnaround Principals

Through this longitudinal study, we have found that school leadership is a major reason why teachers report plans to stay in or leave their schools. Teachers have consistently reported more effective principals in Cohort 1 than Cohort 2, and our findings suggest that these perceptions contributed to teacher employment decisions. In turn, Cohort 1 schools have been more effective than Cohort 2 schools in retaining teachers in both their schools and districts throughout the intervention. Together, these findings—echoing a large literature (see, e.g., Dodman, 2014; Duke, 2004; Duke & Salmonowicz, 2010; Meyers & Hambrick Hitt, 2017)—point to effective school leadership as an important lever for teacher retention in school turnaround.

Teachers in Partnership Schools Need Support to Reduce Workload

While we do not have the data to quantify teacher workload, survey data show that teachers' perceptions of workload are consistently a major reason they report plans to leave their schools, districts, and the profession. Schools and districts may be able to reduce teacher turnover through a focus on reducing workload. While there is no panacea to do so, existing research points to strategies such as increased planning time, clear and distinct roles and responsibilities, and a schoolwide focus on a coherent and stable set of reforms (Butt & Lance, 2005; Jerrim & Sims, 2021; Le Floch et al., 2016).

State and District Leaders Will Need to Shore Up the Teacher Pipeline to Avert Amplified Recruitment Challenges in the Lowest Performing Schools

Descriptive trends show that teacher exits from Michigan public education climbed upward for a second straight year and that increases were especially steep in Partnership schools and districts. Because an extensive literature shows that staffing challenges are most salient for high-poverty schools and those serving large shares of students of color, the effects of weakened teacher labor markets are likely to be felt most severely by Partnership schools and districts. Thus, policy makers will need to continue to work to shore up the pipeline of new teachers and induce existing teachers to remain in the profession. At the district level, leaders can also build pipelines, for example through grow-your-own programs, which evidence suggests can be effective at increasing enrollment in teacher preparation programs, certifications, and ultimately the number of teachers (Edwards & Kraft, 2023; Gist et al., 2019; Muñiz, 2020) (see the Year Two Report for details on existing programs).

ENDNOTES

1. In order to generate a straightforward measure of teacher mobility, this sample of teachers is more restrictive than in prior Partnership reports that also estimated mobility for teachers assigned to multiple schools. Specifically, we only measure mobility out of a school for teachers assigned to just one school, and only measure mobility out of a district for teachers assigned to just one district.

2. Figures for the "all other schools" group vary somewhat from EPIC's Michigan Teacher Shortage Study (Kilbride et al, 2023) because (a) we use a more restrictive definition of teacher, and (b) teachers in multiple schools are assigned to schools differently in the two approaches.

   With respect to (a), we restrict to those with teaching FTE of at least 0.25 while the Teacher Shortage Study includes teachers with lower FTE. We also include only classroom teachers, while the shortage report also includes school counselors and library media specialists.

   With respect to (b), here, teachers are counted in a school if they are coded as a teacher in that school at any point in the fall semester. Then, our fall-to-fall turnover measure excludes teachers who are in more than one school in the fall by this approach. In the Teacher Shortage Study referenced above, teachers are only counted in a school if they were actively employed as a teacher in that school as of the official fall count day, which is the first Wednesday of October. There, the fall-to-fall turnover measure excludes fewer teachers because it only excludes those who were employed in multiple schools as of the official fall count day—not those who were employed in multiple schools at any point in the fall.

3. We show these five factors because teachers in our sample most commonly cite them as the reasons that contribute to their employment plans. Teachers have consistently reported that culture and climate, their students, and school leadership were the top three reasons they planned to stay in their schools. By contrast, pay and workload were the top reasons teachers have cited for leaving, along with school leadership.

4. As with the trends for school and district turnover, trends for the "All other schools" group differ somewhat from EPIC's Michigan Teacher Shortage Study (Kilbride et al, 2023). This is largely for two reasons. The first aligns with (a) in endnote 2 above, that the two products use slightly different definitions of teachers. The second reason here is our analysis excludes teachers in multiple schools while the Teacher Shortage Study measures exits for all unique teachers in Michigan public schools regardless of the number of school assignments. In our case, we need to assign teachers to schools in order to place them in one of our subgroups, but the Teacher Shortage Study is focused on statewide figures and therefore does not need to make the same restrictions.

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APPENDIX A. METHODS

To examine the effects of Partnership on teacher mobility before and during the pandemic, we estimate event study models examining the extent to which the probability of turnover deviates from pre-identification trends for Partnership schools relative to our set of near-selected comparison schools. To do so, we pool data from the two cohorts and the comparison group and create a series of year indicators centered at the identification year for each cohort and then estimate event study models with school and year fixed effects. Because there is evidence from prior research of heterogeneous effects by cohort (Burns et al., 2023), and because there is reason to expect differential effects before and during the COVID-19 pandemic (which initially affects the two cohorts in different implementation years), we estimate two-way Mundlak regressions (Wooldridge, 2021), allowing for separate effects in each of the cohorts before and during the COVID-19 years. These models take the form:

$$Turnover_{ijct} = \sum_{k=-3}^{4} \sum_{c=1}^{2} \tau_k 1(t=t_s^*+k) \times PartnershipCohort_c + \rho(\mathbf{X}'_{jt=2016} \times Year_t) + \gamma \mathbf{Z}'_i + \alpha_j + \theta_t + \varepsilon_{ijct}$$

where Turnover$_{ijct}$ is a dichotomous variable representing one of the three turnover outcomes for teacher t in school j in implementation cohort c in school year t. The term $1(t=t_s^*+k)$ represents a set of indicators for the years pre- and post-Partnership implementation, with t_s^* denoting the year in which school s adopted Partnership spanning from three years prior to Partnership identification through four years of implementation. $PartnershipCohort_c$ takes a value of 1 for schools that were included as part of each of the two implementation cohorts, and zero otherwise. $\mathbf{X}$ is a vector of school-level covariates measured in 2016 (Cohort 1's identification year) as described above, interacted with a linear time trend, denoted as $Year_t$. $\mathbf{Z}$ is a vector of teacher covariates described above. Each model includes school fixed effects (α_j), year fixed effects (θ_j), and an idiosyncratic error term (ε) clustered at the school level.

The coefficients of interest are those represented by τ_k, which provide the estimated effect of Partnership for Cohort c in the kth year of implementation. We measure the effects relative to the year of Partnership identification ($k=0$), so τ_{-3} through τ_{-1} are the difference between Partnership and comparison schools in the years prior to Partnership and τ_1 through τ_4 are the estimated effects in the years of Partnership implementation.

The τ_k estimates are relative to remaining in the school for the school turnover model, remaining in the district for the district turnover model, and remaining in the Michigan public education system in any capacity for the model predicting leaving the profession. Because these are linear probability models, the estimates can be interpreted as the difference in the probability of turnover for teachers in Partnership schools in a given cohort relative to teachers in comparison schools in relative year k.

We do not present τ_k estimates with the two cohorts pooled together (e.g., Partnership implementation year 1, Partnership implementation year 2, etc.) because the pandemic struck at different implementation years for the two cohorts; to that end, we present each cohort's τ_k estimates separately. For Cohort 1 schools, which were identified for Partnership in 2016-17 and first implemented in 2017-18, we observe two pre-identification and four implementation years, with years 3 and 4 directly affected by COVID-19 pandemic. For Cohort 2 schools, which were identified for Partnership in 2017-18 and first implemented in 2018-19, we observe three pre-identification years and three implementation years, with years 2 and 3 directly affected by COVID-19 pandemic.

There are two important identifying assumptions. The first is that the two cohorts of Partnership schools jointly followed a pre-identification trajectory parallel to that of the comparison schools, conditional on covariates. The second is that there was no anticipatory effect of Partnership, again conditional on covariates. The event study plots that we show provide visual evidence about these assumptions, and we present tables of regression estimates in Appendix B.

APPENDIX B. REGRESSION RESULTS

Table B-1. Event Study Estimates From Mundlak Models			
	(1)	**(2)**	**(3)**
	Leave school	**Leave district**	**Leave MI ed**
Cohort 2 t-3	-0.009 (0.028)	0.015 (0.018)	0.016 (0.014)
Cohort 1 t-2	0.015 (0.042)	0.015 (0.022)	0.027 (0.018)
Cohort 2 t-2	-0.011 (0.027)	0.019 (0.017)	0.013 (0.013)
Cohort 1 t-1	-0.048 (0.036)	-0.012 (0.023)	-0.002 (0.016)
Cohort 2 t-1	-0.034 (0.025)	0.008 (0.015)	0.002 (0.011)
Cohort 1 Year 1 (2017-18, pre-COVID)	-0.041 (0.046)	-0.059* (0.027)	-0.039* (0.018)
Cohort 2 Year 1 (2018-19, pre-COVID)	0.005 (0.028)	0.018 (0.018)	0.013 (0.013)
Cohort 1 Year 2 (2018-19, pre-COVID)	-0.023 (0.038)	-0.010 (0.023)	0.005 (0.017)
Cohort 2 Year 2 (2019-20, COVID Y1)	-0.003 (0.026)	0.035* (0.014)	0.027* (0.012)
Cohort 1 Year 3 (2019-20, COVID Y1)	-0.066* (0.033)	-0.025 (0.024)	-0.022 (0.016)
Cohort 2 Year 3 (2020-21, COVID Y2)	-0.058* (0.026)	-0.019 (0.016)	-0.010 (0.011)
Cohort 1 Year 4 (2020-21, COVID Y2)	-0.097** (0.036)	-0.068* (0.029)	-0.037* (0.018)
Cohort 2 Year 4 (2021-22, COVID Y3)	-0.057* (0.026)	0.003 (0.017)	0.021+ (0.012)
Cohort 1 Year 5 (2021-22, COVID Y3)	-0.099* (0.041)	-0.048 (0.032)	-0.019 (0.020)
N	45,175	45,175	45,175
$F_{(1, 322)}$ on pretreatment coefficients	F=0.72 (p=0.395)	F=0.61 (p=0.435)	F=1.73 (p=0.190)
Adjusted R^2	0.042	0.050	0.019
Within R^2	0.007	0.006	0.004

Note: Estimates from two-way Mundlak models. All models include year fixed effects, baseline school covariates, and teacher demographics. School covariates measured in 2016 and interacted with a linear time trend include the proportion of students by race/ethnicity, economic disadvantage, English learner status, special education status, and school enrollment. Teacher characteristics include teacher race/ethnicity (Black, Latino, other race, with White as the reference category) and gender (male, with female as the reference category).

F-test on pretreatment coefficients tests whether the pretreatment coefficient estimates for both cohorts together are jointly significantly different from zero. Here, an insignificant estimate provides evidence for the conditional parallel trends assumption.

RESEARCH WITH CONSEQUENCE