



Memphis Teacher Residency: Teacher Effectiveness in 2021–22

Prepared by the Department of Research & Performance Management

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Key Findings

- Among Memphis–Shelby County Schools (MSCS) teachers **in their first three years of teaching**, those who trained with Memphis Teacher Residency (MTR) outperformed their non-MTR counterparts in 2021–22 on the following two measures:
 - TEM (Teacher Effectiveness Measure) observation scores
 - TEM professionalism scores
- However, the two groups did not perform significantly differently from one another on these two measures:
 - TVAAS (Tennessee Value-Added Assessment System) growth scores
 - TEM student-perception scores
- Among MSCS teachers **with four to 12 years of teaching experience**, MTR-trained teachers outperformed their non-MTR counterparts in 2021–22 on:
 - TEM observation scores
 - TEM student-perception scores
- However, the two groups performed similarly to one another on:
 - TVAAS growth scores
 - TEM professionalism scores
- **A review of the previous eight MTR evaluations** shows that MTR-trained teachers—especially those in the early years of their teaching career—have consistently outperformed their district counterparts on TVAAS and TEM measures over the years.
- Beyond being more effective teachers, MTR-trained teachers were shown to be more likely than their non-MTR counterparts to remain teaching in the district during the first three years of their career (the period during which teacher turnover is generally highest).
- The review of past evaluations also shows that MTR has consistently recruited top-performing teachers to mentor their residents over the years—likely a major contributing factor to the teaching effectiveness exhibited by the MTR graduates.

Introduction

Beginning not long after its establishment in 2009–10, Memphis Teacher Residency (MTR) has received an annual evaluation of its program from its primary partner, Memphis–Shelby County Schools (MSCS). MTR and MSCS were partners in a state-administered, federally funded grant from 2011–12 to 2013–14, which funded the evaluation for those years. Ever since the grant ended, MTR has hired MSCS to continue evaluating the effectiveness of MTR-trained teachers working in MSCS. That arrangement continued until the COVID-19 pandemic interrupted state testing and disrupted the normal course of instruction in 2019–20 and 2020–21. This report is the first since the pandemic-induced pause of the annual MTR evaluations. It presents the evaluation of MTR teacher effectiveness in MSCS for 2021–22, the year when schooling started to normalize (though without fully returning to pre-pandemic conditions).



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Memphis Teacher Residency

MTR is a teacher recruitment and training program working in collaboration with a local university (originally Union University, currently Christian Brothers University). Those accepted into the MTR program first complete a residency year, during which their tuition and housing are fully paid for and they receive a monthly living stipend. The residency year consists of a summer of intensive coursework, followed by a school year of apprenticing under an experienced mentor teacher in a high-need Memphis public school (regular or charter) every Monday through Thursday, and attending classes Fridays and some weekday evenings.

Upon successful completion of the residency year, each MTR resident is awarded a master's degree and teaching licensure. In exchange, MTR residents commit to teaching for three years in an MTR partner school. MTR currently has 34 partner schools, 29 of which are located in the five neighborhoods where MTR focuses its efforts. In almost all of the partner schools, more than 50% of the students are classified as economically disadvantaged. Twenty of the schools are district-managed, eight are MSCS charter schools, and six are charter schools affiliated with either the Achievement School District or the Tennessee Public Charter School Commission. MTR graduates continue to receive formal and informal support and professional development throughout their three-year teaching commitment in an MTR partner school.

MTR requires graduates who do not fulfill their three-year teaching commitment to reimburse MTR in the amount of \$8,000 for each unfulfilled year—for a potential total of \$24,000. This provides strong incentive for MTR graduates to enter the teaching profession and remain in it for at least three years.

For most of its existence, MTR did not have a formal, codified partnership with MSCS, even though the two organizations have worked with one another since MTR's inception. Beginning with the 2019–20 school year, however, MSCS started paying MTR \$5,000 per year for each graduate who teaches at an MSCS-managed school, for the first three years of their post-residency teaching career. This helps offset the amount (currently well over \$50,000) that MTR invests to train and support a resident over the four years of residency plus graduate commitment.

Methods

This evaluation analyzed four measures to compare the teaching effectiveness of MTR-trained teachers with that of their counterparts who did not go through the MTR program. MTR/non-MTR comparisons were made for two groups of teachers: those with 1–3 years of MSCS teaching experience and those with 4–12 years. Three years is a logical cut-point because of: 1) the continued professional support MTR teachers receive for the first three years after graduating from the program, and 2) the financial arrangements mentioned above. The MTR graduates with more than three years of experience had been teaching between four and 12 years, hence the 4–12 year category.

Independent samples t-tests were employed to make the comparisons. This method compares the mean score of one group to the mean score of another group and assesses the statistical significance



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of the difference between the two means. The four measures used for the MTR/non-MTR mean comparisons are discussed below.

Measures

TVAAS Scores

The first measure consists of teachers' scores from the Tennessee Value-Added Assessment System (TVAAS). Teacher-level TVAAS data are designed to show how much *growth* a teacher's students exhibited on achievement tests from one year to the next. A teacher's TVAAS scores are generated by assessing their students' performance on end-of-year state-mandated assessments in light of those students' past performance on such assessments. Students outpacing their past performance will raise the teacher's TVAAS score, while students falling short of their past performance will lower it.

Teachers of tested subjects received a separate 2021–22 TVAAS effectiveness score for each subject or grade level tested, so if a teacher taught eighth-grade mathematics and Algebra I, they received two effectiveness scores. Teachers were also assigned an overall composite score, calculated as a 3-year, 2-year, or 1-year average, depending on the number of years of data available for each teacher. This inconsistency in composite scores is unfortunate, because it is important to be able to look at a teacher's overall TVAAS performance from year to year, without influence from previous years. This is especially important for the first few years of a teacher's career, when we expect the most dramatic improvements to occur.

To assess MTR teachers' performance specifically in 2021–22, it was necessary to create a single-year composite score for each teacher in the study. This was accomplished by using a weighted average, taking into account the number of students in each tested grade/subject. So if a teacher taught eighth-grade mathematics to 30 students and Algebra I to 120 students, the calculation gives the Algebra I score four times more weight than the eighth-grade mathematics score.

Each teacher's 2021–22 TVAAS composite was computed using the standardized, continuous index variable that underlies the ordinal TVAAS levels of 1 to 5 with which most Tennessee educators are familiar. The index variable consists of an estimate (produced by the TVAAS statistical model) divided by its standard error. The TVAAS effectiveness levels are derived from the values of the index variable as indicated in Table 1.

Table 1. Designation of TVAAS effectiveness levels based on TVAAS index

Level	Label	Underlying index
1	Least effective	index < -2
2	Approaching average effectiveness	-2 ≤ index < -1
3	Average effectiveness	-1 ≤ index < 1
4	Above average effectiveness	1 ≤ index < 2
5	Most effective	2 ≤ index



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TEM Component Scores

The other three measures employed in this evaluation are all components of the TEM (Teacher Effectiveness Measure), which is MSCS's teacher evaluation system. Every teacher receives a TEM score each year (unlike TVAAS, which applies only to teachers of tested subjects). The TEM comprises multiple measures: observations, professionalism, student perceptions, student achievement, and student growth. The TEM components are each rated on a 1–5 scale, as indicated in Table 2.

Table 2. TEM effectiveness ratings

Rating	Label
1	Significantly below expectations
2	Below expectations
3	Meeting expectations
4	Above expectations
5	Significantly above expectations

The components of the TEM are combined to create an overall TEM score. However, this evaluation separately analyzes three of the individual TEM components, because much of the overall TEM score consists—in varying degrees according to circumstance—of TVAAS performance. Since some teachers are assigned schoolwide TVAAS scores because they do not teach tested subjects, it is much more desirable to analyze separately: 1) TVAAS scores (for teachers of tested subjects), and 2) components of the TEM that are not related to achievement tests (for all teachers). The three non-achievement-related TEM components are discussed below.

Observation scores. Certified TEM observers conduct announced and unannounced observations of all MSCS teachers (and other certified staff) throughout each school year. Principals, vice principals, assistant principals, PLC (professional learning community) coaches, content specialists, district coaches, National Board Certified Teachers, and specialty teachers are among the designated positions eligible to become certified TEM observers. New hires were to be observed four times throughout the year: once announced and three times unannounced. All other teachers were to have one announced and one unannounced observation, unless they had scored less than a 3 on any one of several TEM components the previous year. In that case, they were to have one announced and two unannounced observations. A teacher's final score on the observation component of the TEM consists of the average of all their observation scores for the year.

Professionalism scores. From the 2021–22 TEM Manual (p.14):

The Professionalism component is designed to capture a teacher's efforts to enhance their practice through [four indicators]: professional learning and growth, use of data, school and community involvement, and leadership. ... Teachers will collect and document evidence of their professionalism throughout the course of the school year. School administrators (Principal, Vice-Principal or Asst. Principal) will then review the evidence and artifacts provided to determine a final score using the Professionalism Rubric. ... Teachers should submit 3-5 relevant artifacts per indicator from the current school year.



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Student-perception scores. The district surveys students twice a year using the student survey instrument on the Panorama platform. According to the Panorama Student Survey User Guide, “the survey measures student perceptions of teaching and learning, culture and climate, and student experiences in the classroom.... Schools and districts can customize the survey by selecting the topics they value most” (p. 2). MSCS customized its surveys (grades K–2, 3–5, and 6–12) to focus on assessing student perceptions of teaching and learning in a particular class.

Results

The findings of the TVAAS analyses are presented in Table 3, which displays results first in the units of the index variable (i.e., standard errors) and then converted into effectiveness levels as described in Table 1. While the index units show the group comparisons more precisely, the effectiveness levels may be more readily understandable. The TVAAS effectiveness levels of 1 through 5 are well known to most Tennessee educators, so seeing the standard error units translated into the effectiveness levels can help provide substance and context to the results.

Table 3. Mean differences[†] between MTR and non-MTR teachers’ 2021–22 TVAAS composites

Years of experience	Teacher group	Mean TVAAS composite [‡]	Mean difference [^]	N	Statistical significance
1 to 3	MTR	0.08	Level 3	62	NO
	Non-MTR	-0.13	Level 3	503	(p=.521)
4 to 12	MTR	0.69	Level 3	40	NO
	Non-MTR	0.70	Level 3	476	(p=.979)

[†] assessed via independent-samples t-test

[‡] method for obtaining TVAAS composites described in “TVAAS Scores” section; conversion of TVAAS index into effectiveness levels explained in Table 1; first column: TVAAS index (standard error units); second column: corresponding TVAAS effectiveness level

[^] mean differences shown two ways:

- TVAAS index: the given MTR group’s mean TVAAS composite minus that of the non-MTR group
- TVAAS effectiveness level: the given MTR group’s mean effectiveness level minus that of the non-MTR group

As Table 3 illustrates, the MTR and non-MTR teachers did not perform significantly different from one another at either career stage (1–3 or 4–12 years of MSCS teaching experience), in terms of their TVAAS growth scores.

The results for the analyses of the three TEM components are presented in Table 4, which shows that MTR teachers with 1–3 years of teaching experience outperformed their non-MTR counterparts on two of the three measures. The MTR teachers averaged 0.28 points higher (over a quarter of an effectiveness rating) on observations and 0.32 points higher (almost a third of an effectiveness rating) on professionalism. However, the two groups performed about the same on student perceptions.



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The results were similar for the teachers with 4–12 years of experience, with the MTR-trained teachers outperforming the non-MTR teachers on two of the three measures. The MTR teachers averaged 0.25 points higher (a quarter of an effectiveness rating) on observations and 0.31 points higher (nearly a third of an effectiveness rating) on student perceptions. But the two groups did not differ significantly on professionalism.

Table 4. Mean differences[†] between MTR and non-MTR teachers' 2021–22 TEM component scores

Years of experience	TEM component	Teacher group	Mean score [‡]	Mean difference	N	Statistical significance
1 to 3	Observations	MTR	4.11	0.28	73	YES
		Non-MTR	3.83		1,194	(p=.000)
	Professionalism	MTR	4.19	0.32	73	YES
		Non-MTR	3.87		1,208	(p=.001)
	Student surveys	MTR	3.85	0.03	75	NO
		Non-MTR	3.82		1,065	(p=.752)
4 to 12	Observations	MTR	4.56	0.25	45	YES
		Non-MTR	4.31		1,494	(p=.000)
	Professionalism	MTR	4.51	0.15	41	NO
		Non-MTR	4.36		1,493	(p=.189)
	Student surveys	MTR	4.07	0.31	43	YES
		Non-MTR	3.76		1,171	(p=.033)

[†] assessed via independent-samples t-test; [‡] on a scale of 1 to 5

Review of Past Evaluations

This evaluation marks the ninth evaluation the district has conducted of the effectiveness of the MTR program. Given that the MTR model has remained fairly consistent throughout the years, it makes sense to consider the results presented above in tandem with the findings of the eight previous evaluations. Table 5 presents the major findings of the past eight evaluations, offering a concise overview of the program's effectiveness prior to 2021–22.

As shown, MTR-trained teachers in the early years of their teaching career consistently outperformed their early-career non-MTR-trained counterparts on TVAAS and TEM measures. Moreover, they were more likely than their counterparts to remain in the teaching field in the first three years, when teacher turnover is generally highest.



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Table 5. Mean differences¹ between MTR-affiliated teachers and non-MTR-affiliated teachers from 2011–12 to 2018–19

School year evaluated	Group evaluated	Cohorts evaluated	Years of experience	TVAAS ²	TEM composite ³	TEM observations ⁴	TEM professionalism ⁴	TEM student perceptions ⁴
2011–12	Graduates	2010 to 2011	1 to 5	0.78**	N/S			
	Mentors	2012	more than 5	0.85**	N/S			
2012–13	Graduates	2010 to 2012	1 to 5	1.73**				
2013–14	Graduates	2010 to 2013	1 to 5	N/S	N/S			
	Mentors	2014	N/A	2.97***	50***			
2014–15	Graduates	2010 to 2014	1 to 5	1.10*	N/S			
	Mentors	2014 to 2016	N/A	2.62***	54***			
2015–16 ⁵	Graduates	2010 to 2015	Newly hired MTR teachers were more likely than their non-MTR counterparts to teach a second and third year. ⁶					
2016–17	Graduates	2010 to 2016	1 to 3	1.43***		0.35***	0.40***	0.22*
			4 to 7	N/S		N/S	N/S	N/S
2017–18	Graduates	2010 to 2017	1 to 3	1.33***		0.43***	0.48***	0.29*
			4 to 7	N/S		N/S	0.27*	N/S
	Mentors	2018	N/A	1.72**		0.38***	0.57***	0.38**
2018–19	Graduates	2010 to 2018	1 to 3	1.05**		0.45***	0.61***	0.20*
			4 to 9	N/S		N/S	N/S	N/S

*p<.05, **p<.01, ***p<.001 (all two-tailed); N/S = not statistically significant; N/A = not applicable

¹ assessed via independent-samples t-tests; differences computed as MTR-affiliated teachers' mean score minus mean score of non-MTR-affiliated counterparts; statistical significance not originally reported for 2012–13 to 2014–15, but is reported here

² all in standard error units (see Table 1 for interpretation) except for 2011–12, which is on a scale of 1 to 5

³ on a scale of 100 to 500

⁴ on a scale of 1 to 5; see Table 2 for interpretation

⁵ Teacher retention, rather than teacher effectiveness, was the focus of the 2015–16 MTR evaluation.

⁶ Because of an ASD takeover that disproportionately affected MTR teachers, confidence in the fourth- and fifth-year retention-rate comparisons between MTR and the rest of the district is limited. Therefore, those results are not reported here.



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Later career MTR-trained teachers (those with more than three years of experience) occasionally outperformed their district counterparts, and never underperformed them. But the differences between the two groups were usually non-significant. Small MTR sample sizes were sometimes the likely cause of the lack of statistically significant differences, but in some cases the substantive differences between the MTR and non-MTR teachers were just not very large. In light of the early-career findings discussed above, it may be that the MTR experience puts teachers on the fast track to effective teaching, whereas it takes the average non-MTR-trained teacher a number of years of classroom experience to catch up with their MTR peers.

One probable reason for the consistently positive findings for the MTR-trained teachers over the years is that the program has reliably recruited top-performing teachers as mentors for the MTR residents. The year of apprenticeship under a mentor teacher is the backbone of the MTR program model, making mentor quality a necessary condition for program success. Whenever mentor teaching effectiveness has been assessed, the MTR mentors outperformed the rest of the district by large (or enormous) margins on all measures. Moreover, they always averaged in the top two categories of effectiveness on all measures. The perennial ability to recruit high-quality mentors is surely one of MTR's major keys to success.

Conclusion

The analyses presented here show that in 2021–22, MTR teachers at two different career stages (1–3 and 4–12 years of MSCS teaching experience) outperformed their non-MTR counterparts on half the measures analyzed and performed on par with their non-MTR peers on the other half of the measures. These findings are generally consistent with those of the previous eight MTR evaluations, which showed that MTR teachers have tended to outperform their peers (and never to underperform them). Taken as a whole, the empirical record on MTR's program effectiveness indicates that MTR has been dependably achieving its primary mission since its establishment over a decade ago: that is, to provide Memphis high-need schools with effective teachers.