

Policy Brief  
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OFFICE OF  
RESEARCH  
AND POLICY

## RECENT RETIREMENT TRENDS OF TENNESSEE TEACHERS



TENNESSEE DEPARTMENT OF  
**EDUCATION**

# Recent Retirement Trends of Tennessee Teachers

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## Executive Summary

Tennessee has undertaken several wide-ranging reforms aimed at educator practice and effectiveness over the past several years, including the launch of a new teacher evaluation system, modification of teacher tenure policy, and initial implementation of Common Core State Standards. This report from the Tennessee Department of Education (TDOE) investigates patterns of teacher retirement in the years surrounding these policy changes. Our analysis is concerned not only with the overall levels of teacher retirement in the state but also with the relative effectiveness of those who stay and leave the teacher workforce through retirement.

We find that retirement rates have risen since 2009, corresponding with a loss of an additional one percent of the teacher workforce or approximately 1,000 teachers per year. The rise in retirement has been steady since just prior to the onset of the reforms under Race to the Top, and has continued through the ensuing years. At the same time, there is evidence that current patterns of retirement are likely to strengthen the overall quality of the teacher workforce. First, among those eligible for retirement, teachers who choose to retire tend to be less effective than those that remain in the classroom. Moreover, retirement rates are becoming increasingly differentiated by teacher effectiveness, with the more effective teachers choosing to stay longer in the classroom and the less effective teachers choosing to leave at higher rates.

- Between 2008 and 2012, the rate of teacher retirement from the workforce increased from 2.0 percent to 3.5 percent.
- Retiring teachers consistently rate lower in effectiveness than those teachers eligible for retirement that choose to remain in the classroom; similarly, retiring teachers consistently rate lower than all remaining teachers regardless of eligibility for retirement.
- In 2010, teachers at different ends of the effectiveness spectrum retired at nearly identical rates. Since that year, the rates have diverged to the point where the state's most effective teachers retire at rates nearly two percent lower than the state's least effective teachers.

## Background

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Over the last three years, Tennessee has implemented a number of reforms under the state's winning Race to the Top plan. Primary among these were the institution of a new teacher evaluation system to comply with the First to the Top Act passed in January 2010 and subsequent changes to tenure policy. Tennessee's new system evaluates all teachers, regardless of service and tenure, on multiple measures including classroom observations, student achievement, and student growth data/Tennessee Value-Added Assessment System (TVAAS) scores. Changes to Tennessee's tenure policy included redefining the term "tenure" to recognize exceptional performance and excellence in teaching, disconnecting tenure from teacher licensure status, and most prominently, allowing dismissal of tenured teachers if that teacher receives ratings of "below expectations" or "significantly below expectations" in two consecutive years. Since 2011, Tennessee has also asked teachers to learn new content and new methods of teaching to meet the demands of rigorous Common Core State Standards.

Teacher retirement provides an initial point of entry into understanding the patterns of teacher retention under the new policies. In response to the new policy changes, there may be an increase in teachers retiring to avoid the respective changes. Note, however, that while we can observe differences in retirement levels over the past several years, these changes still might be due to other economic and societal factors, and this policy brief is unable to draw direct causal links between teacher retirement and recent policy changes.

Two research questions guided this study:

- Have teacher retirement levels changed between 2008 and 2012?
- Do effectiveness levels and trends differ between retiring and non-retiring teachers?

<b>The Tennessee Educator Acceleration Model (TEAM)</b>
<b>Observations and Qualitative Measures (50 Percent)</b> <ul style="list-style-type: none"><li>• Teachers are observed multiple times annually</li><li>• Classroom observations are scored using a rubric that outlines clear expectations of high-quality instruction, planning, classroom environment and professionalism</li></ul>
<b>Student Achievement (15 Percent)</b> <ul style="list-style-type: none"><li>• Teachers, in conjunction with evaluators, select an achievement goal at the start of the year that is aligned to the teacher's job responsibilities, from a list of options approved by the State Board of Education</li></ul>
<b>Student Growth Data/TVAAS Scores (35 Percent)</b> <ul style="list-style-type: none"><li>• Teachers in tested grades and subjects receive a 1-5 Tennessee Value-Added Assessment System (TVAAS) Evaluation Composite for the growth portion of their evaluation.</li><li>• All other teachers used a school or district level TVAAS composite in 2011-12. Some additional growth models for teachers in non-tested grades and subjects have been approved for 2012-13.</li></ul>

## Definitions

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**Teacher:** Any licensed staff member listed in the state information system with an assignment code designating a classroom teacher.

**Retiree:** Any teacher receiving benefits (other than disability benefits) through the Tennessee Consolidated Retirement System.

**Eligible, Non-Retiree:** A teacher who is eligible to receive benefits (other than disability benefits) through the Tennessee Consolidated Retirement System but remains in the classroom.

**Final Evaluation Score:** Individual teacher effectiveness rating that combines teacher observation measures (50 percent), a TVAAS or value-added rating (35 percent), and a teacher-defined achievement measure (15 percent). The final evaluation score ranges from 1 to 5 with 1 representing the least effective teachers and 5 representing the most effective teachers. Final evaluation ratings are only available for the 2011-12 school year.

**TVAAS Score:** Teacher effectiveness rating measuring an individual teacher's effect on student test scores. TVAAS scores are only given to teachers in tested subjects and grades. Like final evaluation scores, they range from 1 to 5 with 1 representing the least effective teachers and 5 representing the most effective teachers. Here, we focus on teachers who teach core subjects in grades 3-8. Composite TVAAS scores are available for 2009-10, 2010-11, and 2011-12.

**Year:** Years in this study refer to the spring of the academic year. Thus, 2008 refers to the 2007-2008 school year.

## Findings

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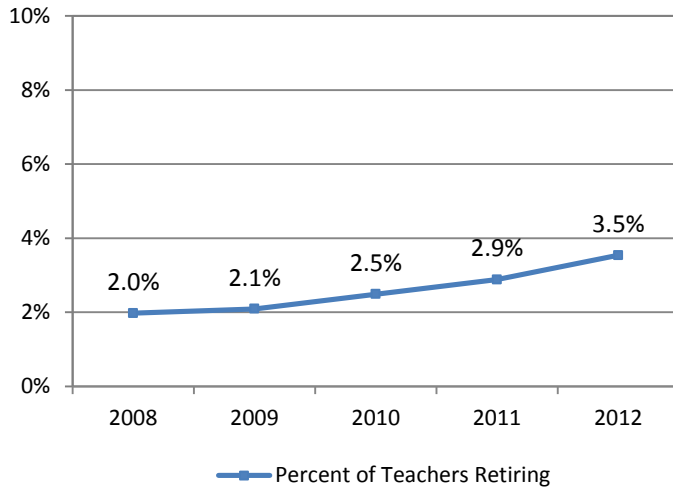
### *I. How have teacher retirement levels changed over time?*

	2008	2009	2010	2011	2012
<b>Retiring Teachers</b>	1,195	1,268	1,524	1,783	2,197
<b>Retirement-Eligible Teachers</b>	11,789	11,829	11,722	11,405	10,833
<b>Total Teachers</b>	60,519	60,630	61,211	61,860	62,052
<b>Average Retirement Age</b>	60.5	60.7	60	61.3	61.4
<b>Average Years of Service</b>	26.7	27.8	26.9	26.5	26.7

After remaining roughly constant between 2008 and 2009, the percentage of teachers retiring from the workforce has increased steadily for the past three years (Figure 1). Levels have risen by about 0.5 percent each year, reaching 3.5 percent by 2012. With a total teacher population

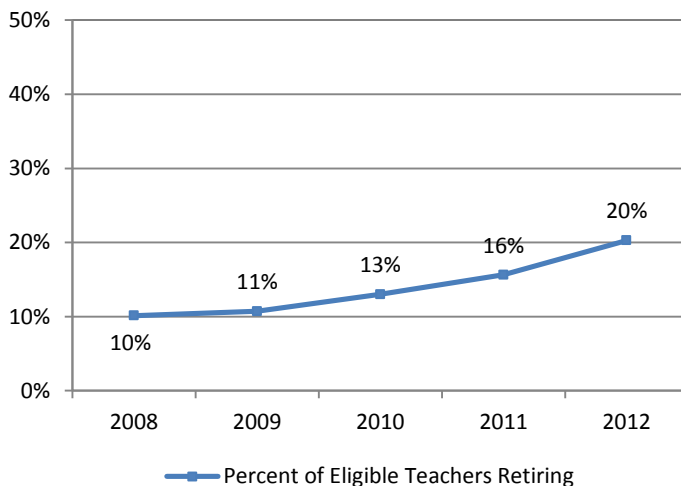
of around 60,000, this means that Tennessee now loses about 2,000 teachers a year to retirement.

**Figure 1: Rates of Retirement from Teacher Workforce**



Over these same years, the proportion of teachers eligible for retirement has gotten slightly smaller. Thus, when we look at retirement among teachers eligible retirement, we see that rates among this group have nearly doubled (Figure 2). It is important to note, however, that retirement levels remain relatively low overall. Averaged across roughly 1,700 schools in Tennessee, the higher retirement rates correspond to approximately one more retiring teacher for every two schools per year as compared with 2009.

**Figure 2: Rates of Retirement from Pool of Retirement-Eligible Teachers**

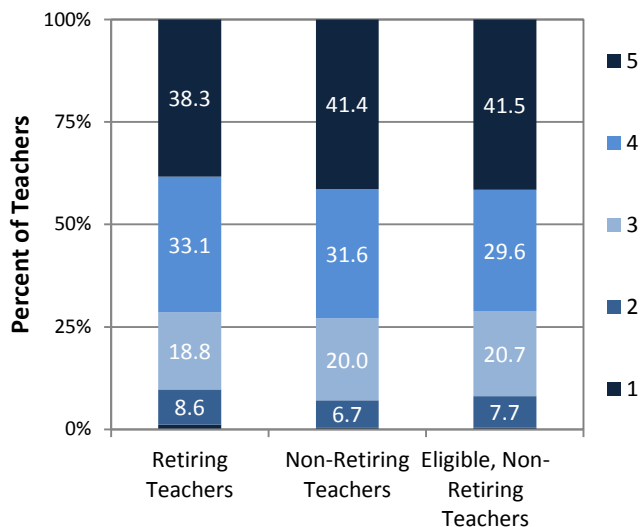


## II. How do retiring and non-retiring teachers compare on effectiveness ratings?

Using all available measures of effectiveness, the teachers in Tennessee that retire each year rate lower on performance than both the full sample of teachers who remain in the classroom and the sample of teachers who are eligible for retirement but choose to stay anyway. These results mirror findings from several recent studies on the effectiveness of retiring teachers.<sup>1</sup>

In 2012, Tennessee teachers received their first Final Evaluation Scores under the new evaluation policy, providing a measure of their effectiveness across multiple outcomes.<sup>2</sup> While these Final Evaluation Scores are only available for a single year, they offer one means of comparing performance levels between non-retiring and retiring teachers. Figure 3 shows the distribution of Final Evaluation Scores for retiring teachers versus all non-retiring teachers and then only retirement-eligible non-retiring teachers. In each case, retiring teachers average lower scores. Importantly, these statistically significant differences are not driven by any single point in the effectiveness distribution (for instance, a much larger percentage of level 1 teachers in the retiring sample than the non-retiring sample) but span the entire distribution.<sup>3</sup>

**Figure 3: Final Evaluation Score Distributions for Retiring and Non-Retiring Teachers**



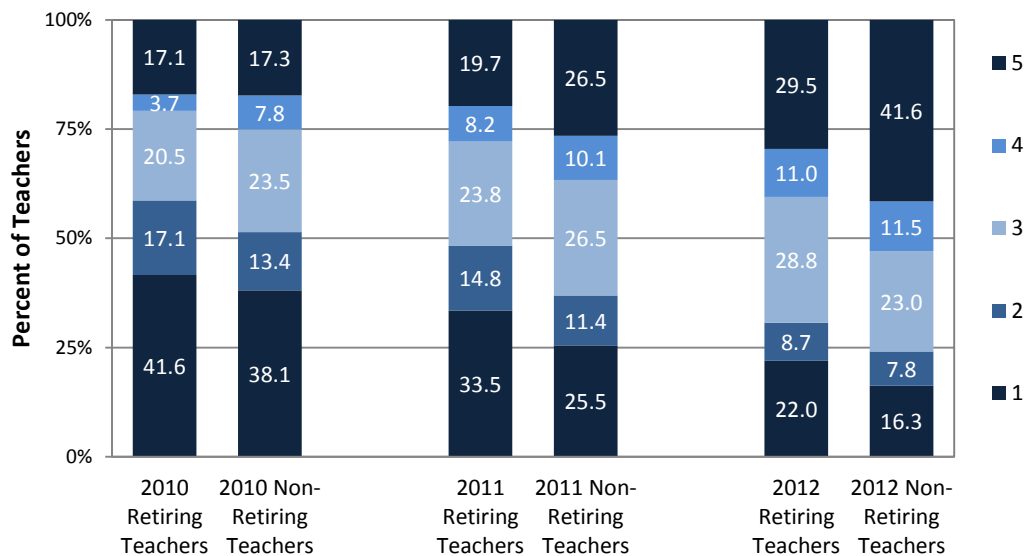
<sup>1</sup> See Sparks, S. "No Academic Harm Found in Early Retirement of Teachers." *Education Week*, Volume 32, Issue 18; Fitzpatrick, M. D. and Lovenheim, M. F. "Early Retirement Incentives and Student Achievement." Paper presented at American Economic Association (AEA) 2013 Annual Meeting; Brown, K. "Out with the Old: The Effect of Teacher Retirement on Student Outcomes." Paper presented at AEA 2013 Annual Meeting.

<sup>2</sup> A small percentage of teachers did not receive Final Evaluation Scores because of partial year exemptions such as medical leave, mid-year retirement, etc. In addition, since 2011-2012 was the first year of implementation, some teachers are missing Final Evaluation Scores due to missing component data (for instance, a teacher missing the teacher-defined achievement measure is not included in our sample).

<sup>3</sup> Statistical significance determined according to results from Welch's t-tests.

While Final Evaluation Scores are not available for years before 2012, we do have TVAAS composite scores for teachers of tested subjects in grades 3-8 between 2010 and 2012. These scores, available only for teachers in particular subjects and grades, measure a teacher’s individual effect on student achievement. Using this data, we find a similar relationship over time between retiring and non-retiring teachers, with retiring teachers performing at lower levels than their non-retiring counterparts in all the years for which data is available (Figure 4).<sup>4</sup> Distributions and differences across groups are similar when comparing retiring teachers to retirement-eligible non-retiring teachers (Figure provided in Appendix A).

**Figure 4: TVAAS Score Distributions for Retiring and Non-Retiring Teachers**



**III. How have retirement rates across teacher effectiveness groups changed over time?**

While the figures in the previous sections suggest that retiring teachers tend to be less effective than non-retiring teachers, they do not offer a clear picture of how the retirement rates for the state’s most and least effective teachers have changed over time.

Figure 5 shows retirement rates by year for teachers who received TVAAS ratings of 5 (the highest effectiveness rating) compared with retirement rates for teachers who received TVAAS ratings of 1. This figure provides strong evidence that Tennessee teacher policies are contributing to differential retention by effectiveness. In 2010, teachers at different ends of the effectiveness spectrum retired at nearly identical rates. Since that year, the rates have diverged to the point where the state’s most effective teachers retire at rates nearly two percent lower than the state’s least effective teachers.

<sup>4</sup> An important side note here is that, even though non-retiring teachers consistently outperformed retiring teachers over the last several years, mean TVAAS composite levels among grade 3-8 teachers have steadily increased for both groups, suggesting significant improvements in teacher quality since 2010.

**Figure 5: Teacher Retirement Rates over Time, By Effectiveness Group<sup>5</sup>**

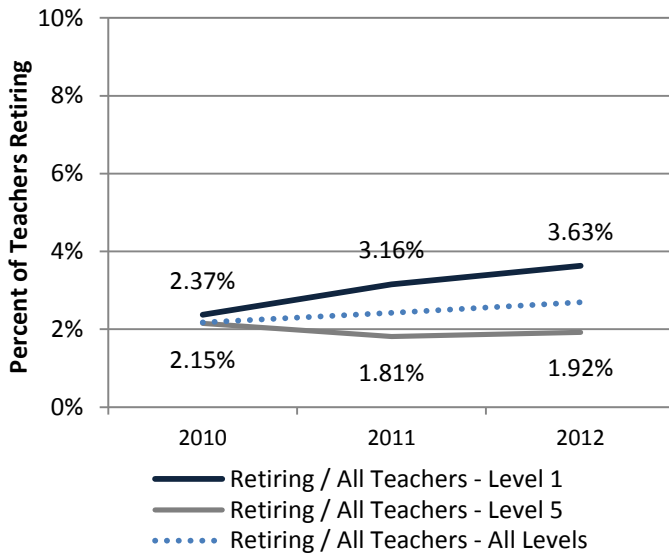
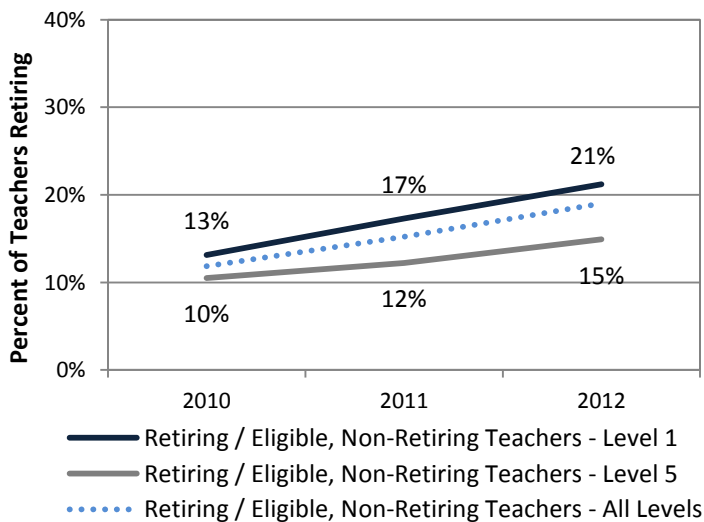


Figure 6 restricts the sample to only retirement-eligible teachers. Here, we can see the overall rise in retirement rates among eligible teachers, with greater proportions of both level 1 and level 5 teachers retiring over time. At the same time, we see that eligible level 1 teachers choose to retire at higher proportions than eligible level 5 teachers and the gap doubled between 2010 and 2012.

**Figure 6: Retirement over Time among Retirement-Eligible Teachers, By Effectiveness Group**



<sup>5</sup> Figure 5 and Figure 6 only include teachers with individual TVAAS scores. Thus, the trend lines for all teachers do not exactly match the trend lines shown in Figure 1 and Figure 2.

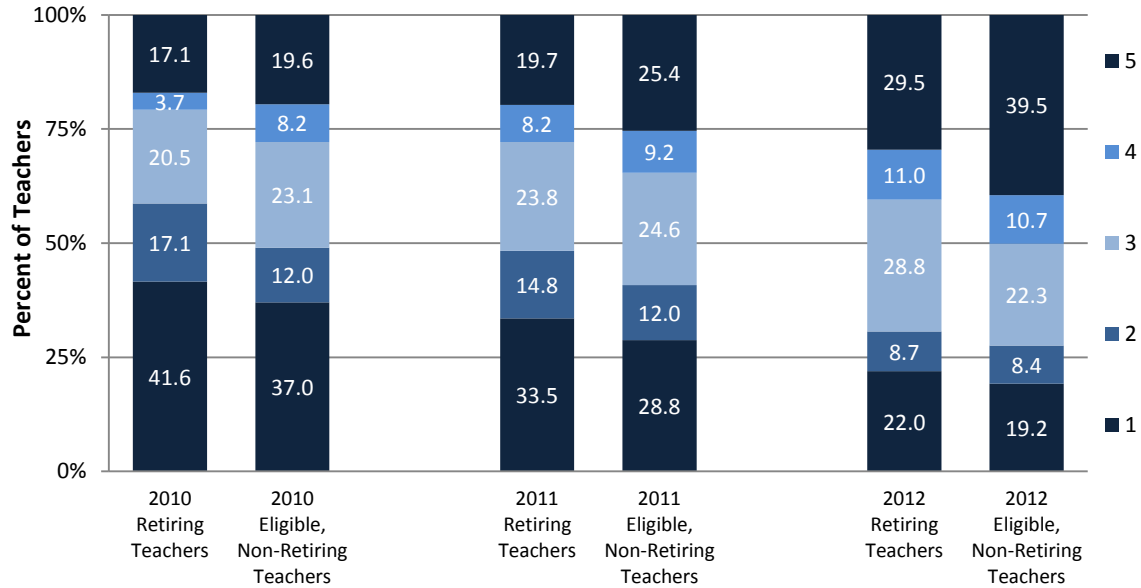


## Conclusion

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Teacher retirement rates have risen since the onset of Tennessee's major Race to the Top initiatives, and the state currently loses approximately 1,000 more teachers per year to retirement than it did in 2009. However, trends in teacher retirement suggest that the process can contribute to a stronger teacher workforce over time since the state's most effective teachers retire at lower rates than the state's least effective teachers and this differential has widened over time.

**TVAAS Score Distributions For Retiring and Eligible, Non-Retiring Teachers**



**Sample Total Evaluation Score to Final Evaluation Rating Calculation Example<sup>6</sup>:**

Score Components:					Total Evaluation Score	Overall Final Evaluation Rating
Overall Observation Score:	4.07	X	50	=	203.5	
Growth Score (TVAAS):	5	X	35	=	175	
Achievement Measure Score:	4	X	15	=	60	
<b>TOTAL:</b>			<b>100%</b>		<b>438.5</b>	<b>5</b>

**Total Evaluation Score to Final Evaluation Rating Conversion Chart:**

Total Evaluation Score Range	Overall Final Evaluation Rating
< 200	1
200 – 274.99	2
275 – 349.99	3
350 – 424.99	4
424 - 500	5

<sup>6</sup> Tennessee Department of Education. July 2012. “Teacher Evaluation in Tennessee: A Report on Year 1 Implementation.”

Questions or Comments?

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