R3 Framework Evaluation Brief
Teacher Attrition and Cost Study

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Prepared by Measurement Incorporated

An abundance of education research tells us, that among all school-related influences on the academic achievement and long-term adulthood outcomes for students, teachers rank number one.[1] When teachers leave, not only is this a loss of institutional knowledge and community, causing disruptions in student learning, but it also results in monies and time spent to fill vacancies, all of which contributes to the cycle of low-achievement.[2]

The loss of effective teachers has greater impacts, particularly in high-needs schools. For instance, one study found, that in low performing schools, only 1 in 11 teacher replacements were of similar quality to a high-performing teacher.[3] Conversely, effective teachers tend to attract one another and are likely to remain in high-needs schools longer when surrounded by similarly talented peers, creating an additive positive impact on students.

Education policy experts have long advocated for expanding leadership roles and advancement opportunities for teachers as a cost-effective strategy for retaining the most effective teachers in high-need schools. Pitt County Schools (PCS) has responded to this call, with its *R3 Framework* initiative that contains a career pathway model. The career pathways include Advanced Teacher Roles (ATRs) that offer effective teachers growth opportunities, leadership-level responsibilities, and higher compensation while also enabling them to continue their classroom teaching. In 2017, the PCS launched its first ATR under the R3 initiative, the *Facilitating Teacher* (FT*)*, followed by the launch of a second position, the *Multi-Classroom Teacher* (MCT), in 2018. Since their inception, 161 teachers have served in ATR positions in nearly all of PCS' high-needs schools.

This edition of the *R3 Framework Evaluation Brief* examines the relationship between implementation of the ATR positions and teacher attrition rates as well as associated costs and savings. The study sought to answer the following questions:

- *How do trends in teacher attrition rates in Pitt County Schools compare with similar districts and the state average before and after ATR implementation?*

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[1] Rivkin, Steven A. et al. (2005). Teachers, schools, and academic achievement. *Econometrica*, *73*(2). https://hanushek.stanford.edu/sites/default/files/publications/Rivkin%2BHanushek%2BKain%202005%20Ecta%2073%282%29.pdf

[2] Hanushek, E. (2010). The economic value of higher teacher quality (Working Paper No. 16606). National Center for Analysis of Longitudinal Data in Education Research. www.nber.org/papers/w16606

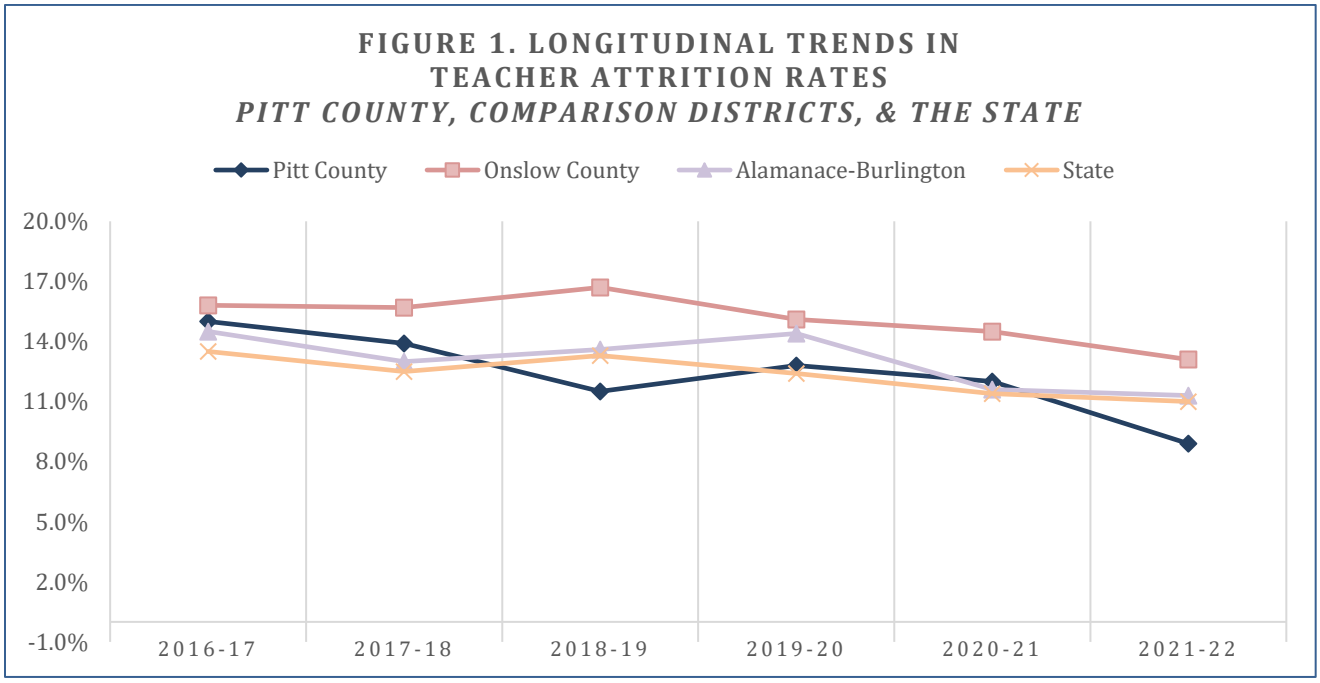
[3] The New Teacher Project. (2012). The irreplaceables: Understanding the real retention crisis in America's urban schools. https://tntp.org/publications/view/the-irreplaceables-understanding-the-real-retention-crisis

- *How does the attrition rate for teachers in ATR positions compare with the district attrition rate?*
- *What were the costs associated with teacher attrition before and after implementation of the ATR positions?*

Organized by these three questions, the findings are presented below.

How do trends in teacher attrition rates in Pitt County Schools compare with similar districts and the state average, before and after ATR implementation?

Figure 1 shows the longitudinal trends of teacher attrition rates[4] for Pitt County Schools, several comparison school districts (including Onslow County and Alamance-Burlington), and the state. The two districts were selected because they were similar to Pitt County Schools in size of teacher population and teacher attrition rates in 2016-17. Neither of the comparison districts had implemented a teacher leadership program. The school years in the figure include one year prior to the start of the first ATR role (i.e., 2016-17) followed by five years of implementation.



Source: Annual State of Teaching Profession Reports published by NCPI

As seen in the figure, there was a mostly downward trend in teacher attrition rates for all three districts and the state, except school years during the COVID-19 pandemic (i.e., 2019-20 and 2020-21). Nevertheless, Pitt County Schools showed the largest decline in teacher attrition over the five-year period of ATR implementation compared to the other three groups, despite all groups starting at similar rates[5] in 2016-17.

[4] Defined by the North Carolina Department of Public Instruction as teachers who left the state and teachers who moved from one LEA to another LEA/charter school in the state.

[5] Among the three groups, the 2016-17 starting differences were not statistically significant.

Shown in **Table 1**, the teacher attrition rate for Pitt County Schools decreased from 15% in 2016-17, to 8.9% in 2021-22. This represents a statistically significant decrease of 6.1 percentage points, which was nearly twice the amount seen in the comparison districts and the state. For example, Onslow County's rate decreased only 2.7 percentage points and Alamance-Burlington declined only 3.2. The state average decline was 2.5 percentage points.[6]

Table 1. Teacher Attrition Rates by School Year
Pitt County, Comparison Districts, & the State

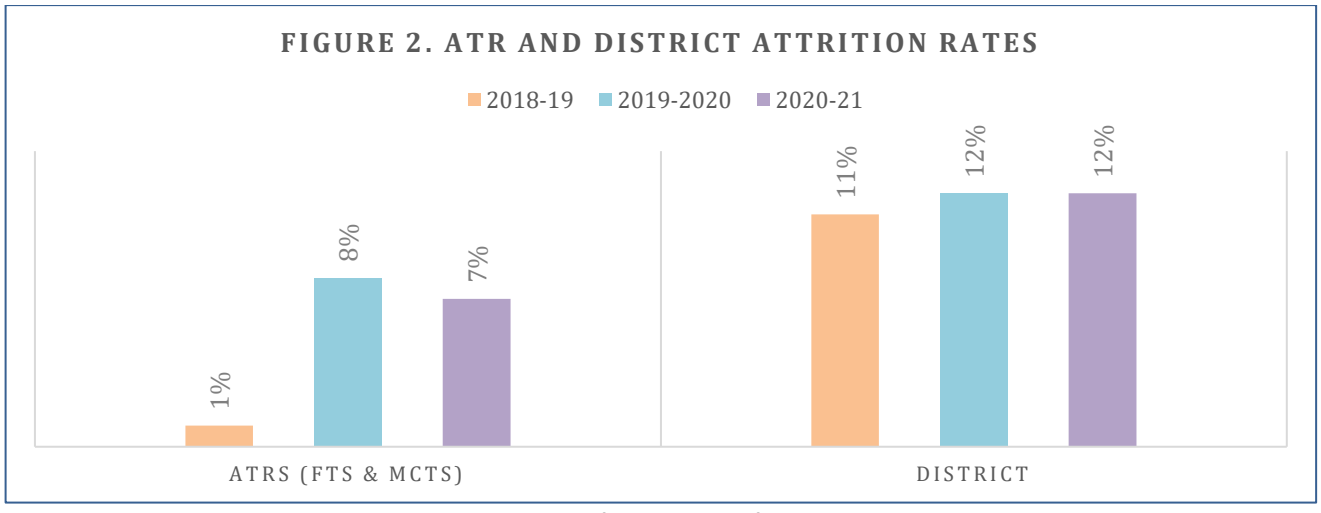
Districts	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Pitt County	15.0%	13.9%	11.5%	12.8%	12.0%	8.9%
Onslow County	15.8%	15.7%	16.7%	15.1%	14.5%	13.1%
Alamance-Burlington	14.5%	13.0%	13.6%	14.4%	11.6%	11.3%
NC State	13.5%	12.5%	13.3%	12.4%	11.4%	11.0%

Source: Annual State of Teaching Profession Reports published by NCPI

What's more, Pitt County Schools' teacher attrition rate, which was 1.5 points higher than the state in 2016-17, was 2.1 points *lower* than the state average by 2021-22. It was also 4.2 points lower than Onslow and 2.4 points lower than Alamance-Burlington. The differences were statistically significant.

How does the attrition rate for teachers in ATR positions compare with the district attrition rate?

One of the goals of the R3 Framework was to retain effective teachers by providing them with leadership opportunities through an ATR position. **Figure 2** shows attrition rates for teachers who held one of the ATR positions compared to the district rate during the 2018-19, 2019-20, and 2020-21 school years—years for which ATR data were available[7]. The purpose of this comparison was to determine if the initiative was successful in retaining effective teachers at rates higher than the district average.



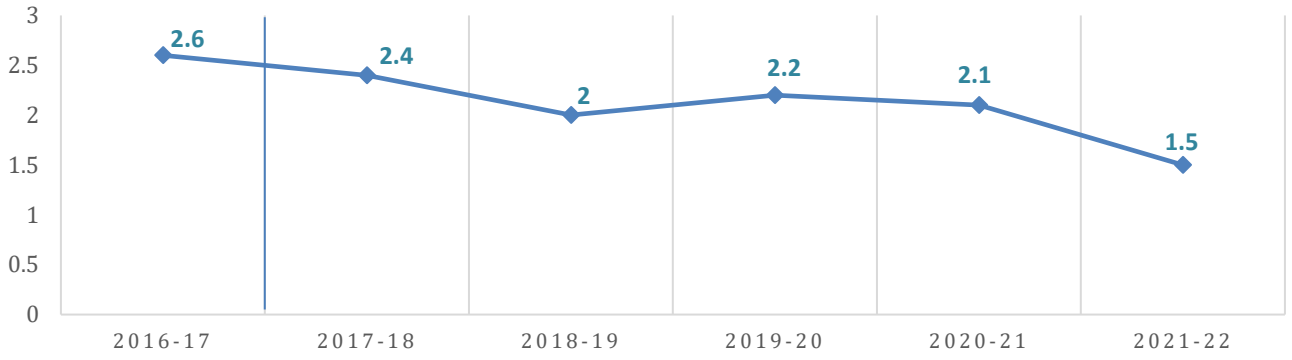
Source: DEEL Master ATR Database and Annual State of Teaching Profession Reports published by NCPI

[6] The declines experienced by the comparison districts and the state were also statistically significant.
[7] 2021-22 teacher-level attrition data was not available.

The figure shows that teacher attrition rates for ATRs were lower than the district attrition rates in all three years. The differences between the two groups were statistically significant each year. For example, in 2018-19, only 1% of ATRs left the district compared to the 11% of teachers across the district. Three years later, only 7% of ATR teachers left the district compared to 12% non-ATR teachers who had left the district. This data provides evidence that the R3 Framework initiative successfully retained effective teachers by providing them leadership positions.

What were the costs associated with teacher attrition before and after implementation of the ATR positions?

FIGURE 3. PITT COUNTY TEACHER REPLACEMENT COST IN MILLIONS
PRE-ATR YEAR (2016-17) AND ATR YEARS (2017-18 TO 2021-22)



The study also examined the estimated cost savings as a result of lower teacher attrition rates during the ATR implementation years and these amounts are displayed in **Figure 3**. As seen in the figure, there was a sizable decline in the cost[8] of replacing teachers after the ATR positions were implemented, which is consistent with the decline in teacher attrition rates reported in Figure 1. These declines in costs translate to direct savings for the district of $200,000 in the first year of the program, $400,000 in year two, and $1.1 million by 2021-22. The cumulative savings across all years of ATR implementation was estimated at **$2.8 million**.

Summary

Pitt County Schools set out to recruit, retain, and reward effective teachers through its innovative career pathway model provided through the *R3 Framework*. Over the course of five years, 161 teachers filled the ATR positions in over 90% of the district's high-needs schools. Since the 2021-22 school year, the district has continued to implement the FT and MCT positions and expanded the career pathway model to include additional leadership roles for its educators.

This edition of the *R3 Framework Evaluation Brief* examined the relationship between implementation of the ATR positions and teacher attrition rates across the district and the potential

[8] Based on a commonly used estimate of $11,000 per teacher https://www.edelements.com/teacher-retention-calculator

cost savings associated with decreased attrition. The study also compared attrition rates for ATR to district averages.

Starting with districtwide teacher attrition rates, the study found that Pitt County Schools demonstrated a statistically significant decline in teacher attrition from the year before the ATRs began to five years after their implementation (i.e., 2021-22). The decrease was greater than that of similar districts *and* the state average. It is noteworthy that the teacher attrition rate for PCS was over two points lower than the state average by 2021-22, whereas the county had a higher average than the state prior to the ATRs in 2016-17.

Regarding the ATR attrition rates, the study found that teachers who served as an FT or MCT were significantly less likely to leave the district compared to teachers who were not in either position.

Lastly, the cost savings were substantial. Specifically, when factoring in the annual reduced cost associated with the decline in teacher attrition rates over the course of implementing ATRs, the cost saving was estimated at $2.8 million.

Overall, these findings provide credible evidence of the positive influence of ATRs on teacher retention and cost saving to the district. To further confirm this relationship, Pitt County Schools should continue to track retention rates longitudinally. Another consideration for future study would be to examine the impact of the ATRs on retaining effective teachers and the additive impact on student outcomes.[9]

[9] There was insufficient data at the time of this study due to disruptions in EVAAS data from the COVID-19 pandemic.