Principals' Selection of Teacher Candidates

May 2021

Katherine Stewart

Maryland
State Department of
Education

Tim R. Sass
Georgia State University

Thomas Goldring
Georgia State University
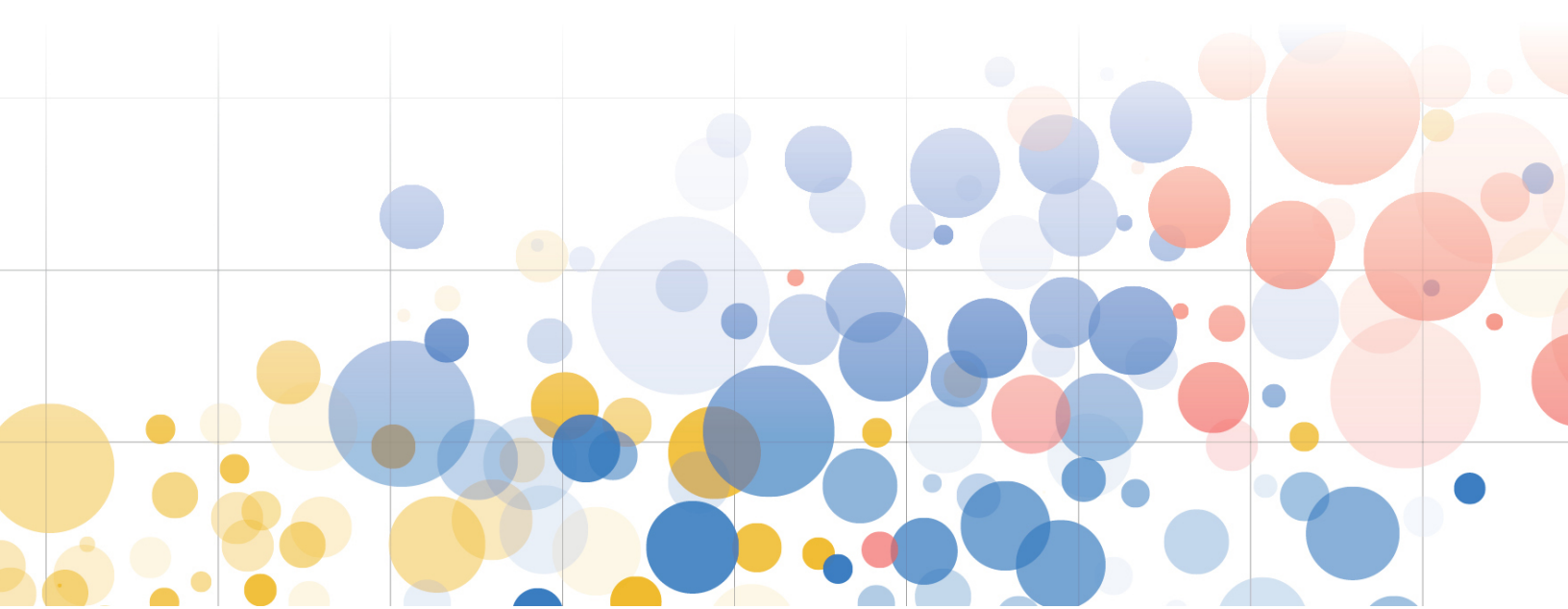
HIGHLIGHTS

- In a metro-Atlanta school district, some teacher candidate characteristics, such as undergraduate GPA, are positively related to teacher quality but unrelated to the likelihood of being selected for a hiring request.
- There were no systematic differences in candidate pool size or pool quality—as measured by the proportion of high-GPA candidates across school-quality letter grades—after controlling for applicant demographic characteristics, school level, and subject. Likewise, there were no systematic differences in pool size or pool quality across schools with varying student body characteristics, conditional on the same controls.
- Principals' characteristics, including their experience as a principal and their performance rating, are unrelated to the likelihood that a teacher candidate receives a hiring request.
- Because discrepancies between predictors of principal hiring decisions and predictors of subsequent teacher performance were not due to differences in the candidate pools, a lack of information, inside information held by principals, or imperfect decision-making may drive the discrepancies.
- Policies designed to provide more information about candidates, either directly through targeted messaging or indirectly via pre-screening of candidates, could improve teacher quality overall and enhance equity in access to effective teachers (e.g., the provision of low-cost informational interventions to principals, such as highlighting key candidate characteristics in application materials).

BACKGROUND AND MOTIVATION

Teacher quality substantially affects the educational benefits accrued by students, ranging from short-run academic achievement to long-term labor market outcomes.[1] Consequently, equitable access to effective teachers is of considerable policy importance. The quality of teachers who are hired depends on the quality of the available candidates and school leaders' ability to select the best candidate from the applicant pool. Given fixed salary schedules, candidates are likely to be drawn toward schools with more resources and less challenging teaching environments.[2] As a result, principals of schools that primarily serve economically-disadvantaged students may face pools of teacher candidates that differ from the applicant pools encountered by principals of schools serving students from more economically-advantaged backgrounds.

We study how principals make hiring requests for teacher candidates by addressing a series of interconnected research questions. First, we examine the extent to which observable candidate characteristics align with measures of teacher quality and the likelihood of being selected for a hiring request. We find that candidates' undergraduate GPA is a consistent predictor of teacher quality yet unrelated to the

---

[1] See Rivkin et al. (2005), Aaronson et al. (2007), Kane et al. (2008), Chetty et al. (2011), Chetty et al. (2014).

[2] See Boyd et al. (2013), Sass et al. (2012), Hanushek & Rivkin (2007), Boyd et al. (2011), Lankford et al. (2002), Imazeki (2005), Scafidi et al. (2007).

likelihood of being chosen for a hiring request. Applying earlier in the hiring season relative to other candidates is similarly predictive of teacher performance but is associated with a lower likelihood of receiving a hiring request.

We proceed to analyze whether differences in candidate pools across schools, school levels, or subject areas are related to candidate characteristics (such as undergraduate GPA) or predict hiring requests made by principals. After controlling for applicants' demographic characteristics, school level (elementary/middle/high), and subject area, pool characteristics are not systematically related to teacher candidate characteristics. Moreover, no readily available observable principal characteristics are associated with the selection of a high-GPA candidate. We conclude by discussing how the provision of low-cost informational interventions to principals, such as highlighting key candidate characteristics in application materials, could improve teacher quality overall and enhance equity in access to effective teachers.

Our study builds on previous work by Jacob et al. (2018) and Bruno and Strunk (2019), which analyzed teacher candidates' characteristics in Washington, D.C., and Los Angeles, respectively. The researchers uncovered discrepancies between predictors of principal hiring decisions and predictors of subsequent teacher performance.[3] They conclude that principals may not have been making optimal hiring decisions; thus, there may be room for improvement in the teacher hiring process. Both

studies make the implicit assumptions that every principal had access to the same teacher applicant pool and that candidates had no outside options; however, we remove those assumptions in our analysis.

RESEARCH QUESTIONS

We use rich teacher applicant data to study the factors that underlie principals' decisions in making hiring requests to teacher candidates. We address the following five research questions:

1) Which observable teacher candidate characteristics are related to teacher quality (as measured by subsequent evaluation scores, impact on student test scores, persistence in initial placement, and teacher attendance)?
2) What observable factors do principals consider when selecting teacher candidates to receive a hiring request?
3) Which of the factors used to select teacher candidates (RQ2) are aligned with teacher quality (RQ1), and which are not?
4) For misaligned factors (RQ3), do observable differences in pools of teacher candidates across schools explain the misalignment?
5) Do observable principal characteristics explain which candidates are selected for a hiring request?

---

[3] Bruno and Strunk (2019) use scores from a multi-component screening evaluation to predict teacher outcomes. The eight individually-scored screening components were a) interview, b) professional references, c) sample lesson, d) writing sample, e) undergraduate GPA, f) subject matter (licensure scores), g) background (prior experience), and h) preparation (prior teaching effectiveness or college selectivity). Similarly, Jacob et al.

(2018) measure the following candidate characteristics when estimating hiring probabilities and teacher outcomes: teacher experience, location of college attended, an academic measures index (undergraduate GPA, SAT scores, selectivity of undergraduate institution, possession of a master's degree), and an index of screening scores (a written assessment of pedagogical content knowledge, interview, and audition).

SETTING AND DATA

We study principals' selection of teacher candidates in a school district ("the district") in the metro-Atlanta area. The district employs close to 4,000 teachers and fills approximately 600 open teaching positions each year, of which about 150 are filled by internal hires.[4] During the period of analysis, teacher candidates applied online for open positions, and after the district conducted a background and credential check, their information was posted to a hiring portal. Principals could interview any qualified candidate in the hiring portal regardless of the school to which a candidate applied.[5] After selecting a preferred candidate, principals submitted a request to the district's Human Resources Department (HR) to hire the candidate. If approved, HR formally offered the position to the candidate, and they could accept or reject that offer.[6]

Teacher candidates submit applications throughout the year, and individuals often submit applications in multiple years. The hiring cycle begins in December and January before the start of a school year, and the number of applications peaks between March and June. The district provided us with rich application and hiring decision data from December 2015 to May 2018, including applications that did not result in a hiring request. The data included the applicants' education, work history, teaching experience, certification status, and scores on district screening tools.[7] Data on district employees included attendance, employment, and evaluation records for both teachers and principals. Student-level data included demographic characteristics, performance on statewide assessments, attendance, and discipline records.

To create the analytical sample, we removed teacher candidates who applied only to specialized areas typically considered "hard-to-staff" and focused on general education, math, English Language Arts (ELA), science, and social studies candidates.[8] Candidates were linked to principals in the hiring decision. Compared to the full candidate pool, hired teachers were more likely to be certified, previously a district employee, an advanced degree holder, and an education major (see Figure 1).

---

[4] A majority of the district's student population identified as Black, and over three-quarters of students were economically disadvantaged.

[5] Teacher candidates had to submit a school-specific application if they elected to interview at a different school. Some posted openings were generic (e.g., "middle school math teacher").

[6] There was no formal limit on the number of days a candidate could take to respond to an offer, but principals could withdraw the offer.

[7] During the period of analysis, the district began to use Gallup's TeacherInsight system (an assessment that measures teacher talent based on achievement drive, student and parent relationships, and classroom structure and planning and HireVue (a video interview tool). Neither screening tool was mandatory between December 2015 and June 2018, so we do not analyze data from these tools.

[8] See Feng and Sass (2017) for a discussion of "hard-to-staff" teaching areas.

Figure 1. Characteristics of Teacher Candidates and Hired Teachers
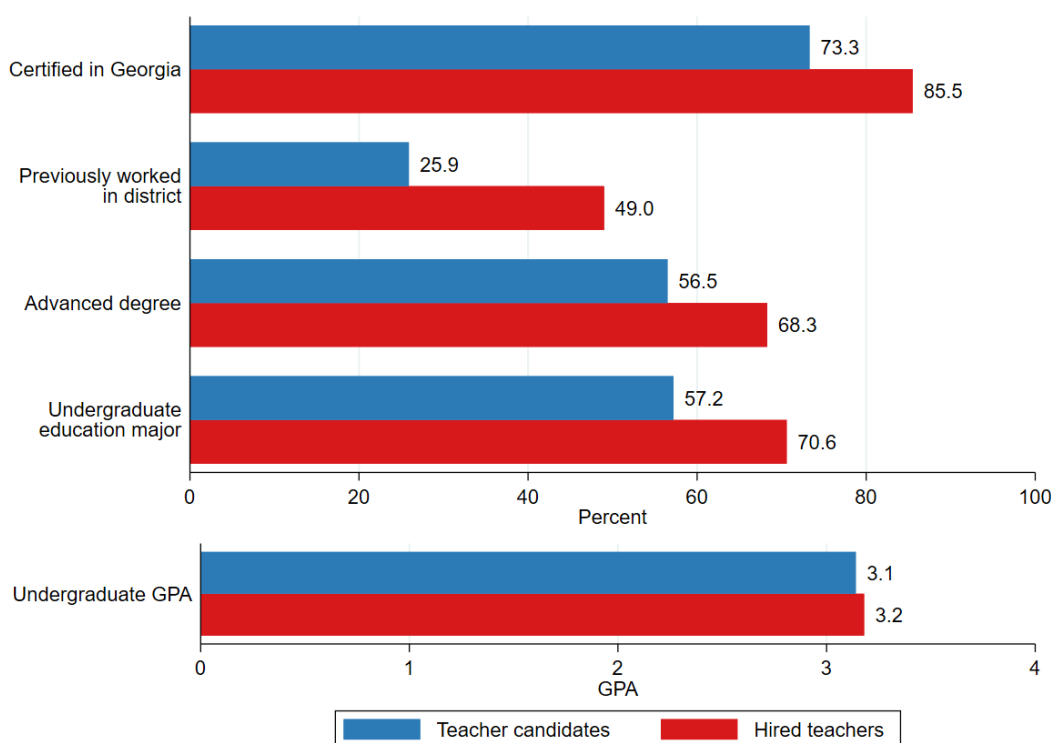
Notes. Statistics are percentages, except for GPA. There were 14,884 teacher candidate observations and 1,128 observations for hired teachers.

FINDINGS

TEACHER CANDIDATE CHARACTERISTICS AND SUBSEQUENT PERFORMANCE

A prerequisite to hiring better teachers is the ability to identify candidates likely to become superior teachers. For each of the four teacher performance measures (observational evaluation scores, student test scores, persistence in initial placement, and teacher attendance), we assess the relationship between observable candidate characteristics and teacher performance (RQ1) and the relationship between those same characteristics and the likelihood of a principal issuing a "request to hire" (RQ2). We then compare these relationships to understand the alignment or misalignment between factors related to hiring requests and factors related to teacher quality (RQ3).

Our findings for the first three research questions are summarized in Tables 1-4. Each table shows the association for one of the four teacher performance measures.[9] Columns 2-4 show three possibilities for the estimated relationship between a teacher characteristic and the likelihood of a job offer: being less likely to be offered a job than otherwise similar candidates, having no clear relationship with receiving a job offer, or being more likely to

---

[9] Tables 1-4 show results for all applicants. Findings for new applicants only are available in the working paper.

receive a job offer than otherwise similar candidates (RQ2).

The rightmost two columns indicate whether a teacher characteristic is associated with lower or higher values on the performance measure (RQ1). Thus, "lower" on a performance measure means that the estimated association between a given teacher characteristic and the measure of teacher quality is negative. A higher performance measure means that the association is positive.

Table 1. How Observable Teacher Characteristics Relate to Hiring Requests & Teacher Evaluation Scores

Teacher Characteristic	Likelihood of Receiving a Hiring Request			Teacher Evaluation (TKES)	
	Less Likely	No Relationship	More Likely	Lower Score	Higher Score
Earlier Applicant	✓				✓
Some Teaching Experience		✓		✓	
Undergraduate GPA		✓			✓
National Board Certified		✓			✓
Advanced Degree			✓		✓

Notes. Teacher characteristics are defined in the Data Appendix. Only teacher characteristics that have a statistically significant relationship with Teacher Evaluation scores are shown. TKES is Georgia's Teacher Keys Evaluation System, an evaluation system comprised of three components: teacher assessment on performance measures, professional growth, and student growth.

Table 2. How Observable Teacher Characteristics Relate to Job Offers and Impact on Test Scores

Teacher Characteristic	Likelihood of Receiving a Hiring Request			Impact on Test Scores	
	Less Likely	No Relationship	More Likely	Lower SGP	Higher SGP
Currently Under Contract		✓		✓	
Certified Outside Georgia			✓		✓
Advanced Degree			✓		✓

Notes. Teacher characteristics are defined in the Data Appendix. Only teacher characteristics that have a statistically significant relationship with Teacher Evaluation scores are shown. SGP is Student Growth Percentile, which measures the amount of growth a student demonstrated relative to academically similar students in Georgia.

Table 3. How Observable Teacher Characteristics Relate to Job Offers and Persistence in Initial School

Teacher Characteristic	Likelihood of Receiving a Hiring Request			Persistence in Initial School	
	Less Likely	No Relationship	More Likely	Lower	Higher
Earlier Applicant	✓				✓
Some Teaching Experience		✓		✓	
Undergraduate GPA		✓			✓
Advanced Degree			✓	✓	

Notes. Teacher characteristics are defined in the Data Appendix. Only teacher characteristics that have a statistically significant relationship with Teacher Evaluation scores are shown.

Table 4. How Observable Teacher Characteristics Relate to Job Offers and Teacher Attendance

Teacher Characteristic	Likelihood of Receiving a Hiring Request			Teacher Attendance	
	Less Likely	No Relationship	More Likely	Lower	Higher
Previously Worked in Dist.		✓		✓	
Advanced Degree			✓	✓	
Student Taught in District			✓		✓

Notes. Teacher characteristics are defined in the Data Appendix. Only teacher characteristics that have a statistically significant relationship with Teacher Evaluation scores are shown.

Do teachers who are more likely to receive a hiring request also have higher performance? Tables 1-4 show teacher characteristics that had a statistically significant relationship with at least one measure of teacher performance. We highlight the following characteristics that were related to multiple measures of teacher performance:

GRADE POINT AVERAGE (GPA)

Teacher candidates with relatively higher undergraduate GPAs tended to have higher evaluation scores in their first year (Table 1) and were more likely to persist beyond a year in their initial school (Table 3).[10] Despite these positive associations with teacher performance, undergraduate GPA did not influence principal hiring decisions.

EARLIER APPLICANTS

Candidates who applied earlier (relative to the first application received in a hiring season) were less likely to receive an offer of employment than later applicants. However, they had higher evaluation scores (Table 1) and were more likely to persist beyond a year in their initial school (Table 3).

---

[10] We do not precisely describe the relationship between undergraduate GPA and evaluation scores and attendance rates; this would require structurally modeling the relationships, which is beyond the scope of this study.

ADVANCED DEGREE

Teachers who earned an advanced degree were more likely to be hired but less likely to persist beyond a year in their initial school (Table 3) and were associated with lower attendance (Table 4); by contrast, they were more likely to score higher on the TKES evaluation (Table 2).

SOME TEACHING EXPERIENCE

Teachers with prior teaching experience tended to score lower on the TKES evaluation (Table 1) and were less likely to persist beyond a year in their initial school (Table 3). They were neither more nor less likely to receive a hiring request.

OTHER CANDIDATE CHARACTERISTICS

The remaining teacher characteristics shown in Tables 1-4—national board certified, currently under contract, certified outside Georgia, previously worked in district, and student taught in district—were associated with only one of our four measures of teacher performance.

IN SUMMARY

For each of the four teacher characteristics highlighted above, there is some degree of misalignment between how the characteristic is related to hiring requests and teacher quality. The evidence suggests that principals should consider high-GPA candidates and earlier applicants more highly in making hiring requests. Conversely, principals may wish to place less emphasis on teaching experience as a salient characteristic in the decision to make a hiring request.

DIFFERENCES IN CANDIDATE POOLS ACROSS SCHOOLS

Misalignment of characteristics (such as undergraduate GPA) between the likelihood of hiring requests and factors related to teacher quality could be due to a lack of information or suboptimal decision-making on the part of principals. Alternatively, principals may face different pools of teacher candidates across schools, school levels, or subjects. In what follows, we investigate how candidates' undergraduate GPA relates to observable differences in candidate pools (RQ4). We use a measure of the proportion of high-GPA candidates because GPA predicts higher teacher quality on two of the four measures of quality shown in Table 1 (TKES score and persistence in initial school), yet it has no relationship with the likelihood of receiving a hiring request.[11]

We begin by examining how pools of teacher candidates differed by schools' state-issued grade, which is determined by combining accountability ratings such as school performance, the makeup of the student body, and graduation rates.[12] Without adjusting for other relevant factors like school level and the subject area of the teaching position, "A" grade schools received, on average, about one-third more applications per subject area than "F" grade schools. There was, however, no clear relationship between pool size and school grade overall: on average, "A" and "F" schools received more applications per subject area than "B," "C," and "D" schools.

Figure 2 also shows that the quality of the candidate pool, as measured by the proportion of high-GPA candidates, was significantly higher

---

[11] High-GPA candidates are those whose undergraduate grade point average is in the top quintile of all applicants' GPAs. This translates to candidates whose undergraduate GPAs were 3.5 or higher on a four-point scale. The

proportion of high-GPA candidates is the percentage of candidates whose GPA was 3.5 or higher.
[12] For additional detail on school grades, see gadoe.org/CCRPI/Pages/default.aspx.

at "A" grade schools. Intriguingly, "F" grade schools had a higher number of high-GPA candidates than "B," "C," or "D" grade schools. Although the differences are statistically significant, they are not meaningfully large. All teacher candidates were posted to a centralized hiring portal. Yet, raw differences in the number of applications and candidate pool quality suggest that principals faced pools of teacher candidates that differed in their group characteristics, such as pool size, average quality, and willingness to accept a teaching position at a particular school.

Figure 2. Mean Number of Teacher Candidates per Subject Area Within a School by School Grade
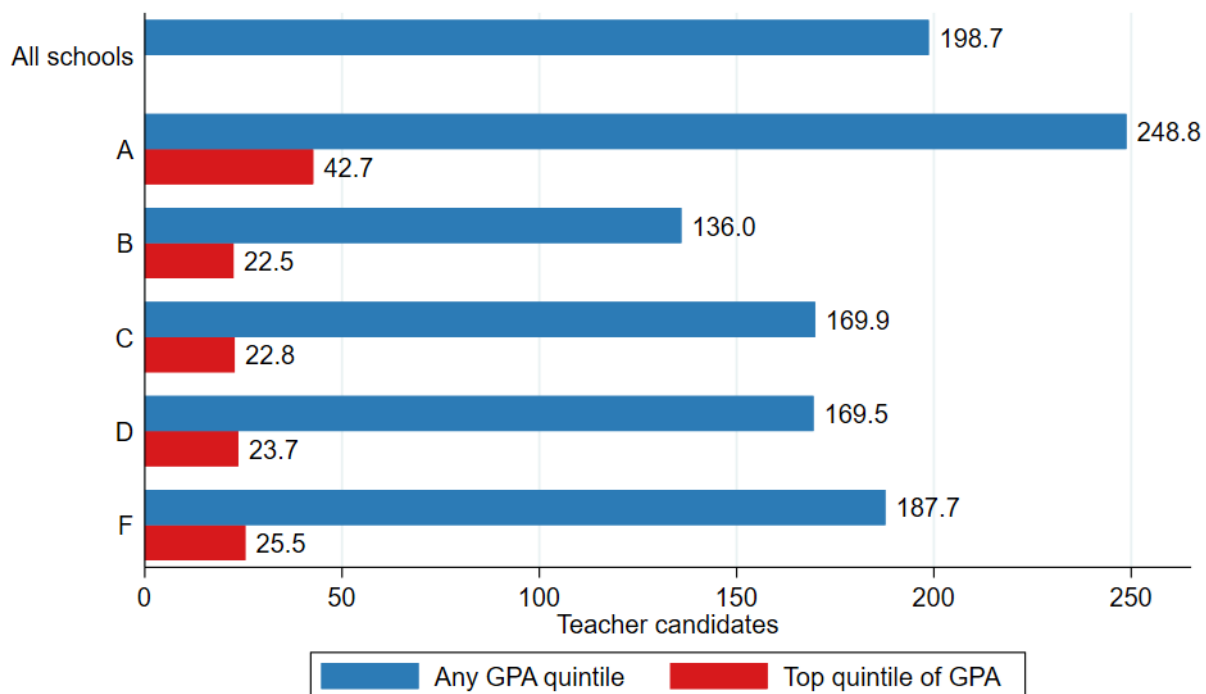
Notes. Counts of teacher candidates include all applicants who applied to a school for a given year in a particular subject, regardless of the number of vacancies at a school. GPA refers to the candidates' undergraduate GPA. School grades are determined by combining the schools' ratings on various accountability measures, including school performance, the student body's makeup, and the graduation rate.

To analyze whether principals faced meaningful differences in candidate pools across schools, we estimate school-level models that separately relate the pool size and proportion of high-GPA candidates to the school grade. After controlling for applicant demographic characteristics, school level, and subject area, we observe no systematic differences in pool size or pool quality (measured by the proportion of high-GPA candidates) across school grades. Likewise, there were no systematic differences in pool size or pool quality across schools with varying student body characteristics (e.g., percent of Black students) with the same controls.

Although candidate pools were not systematically different across schools, school levels, and subject areas, there may be a relationship between observable differences in candidate pools and teacher quality. Therefore, we assess whether pool size and the proportion of high-GPA candidates predicted the GPA of the

first candidate selected for a hiring request. We find that GPA was unrelated to pool size but positively associated with pool quality.

Of course, this relationship may be mechanical: schools with more high-GPA candidates in the pool would be more likely to make an offer to a high-GPA candidate, even if candidates were selected randomly.[13] We find that the GPA for candidates selected for a hiring request fell with the number of requests (i.e., the second candidate selected for an offer tended to have a lower GPA than the first). We do not observe the number of open positions in a school, so multiple offers may mean the first offer was rejected or that there were multiple positions in a subject area within a school.

The findings are consistent with the idea that, while principals faced similar teacher candidate pools, principals at certain schools may have been forced to dig deeper into their list of preferred candidates to secure a hire. We observe, for example, that principals at "F" grade schools made six times the number of hiring requests as principals at "A" or "B" schools; "D" schools made three times as many.

PRINCIPAL CHARACTERISTICS AND HIRING REQUESTS

Given that pool size and quality did not systematically vary by school level or subject area, differences in the ultimate teaching performance of candidates selected for hiring requests may be due to principals' decision-making. We estimate choice models that relate characteristics of the first teacher candidate selected for a hiring request with principal characteristics, including their experience as a principal and their performance rating. We find that neither of the observable principal

characteristics was associated with the selected teachers' characteristics for hiring requests. Consequently, there is no ready guide for predicting which school leaders will make superior hiring choices.

POLICY DISCUSSION

Like prior studies in other parts of the country, we find that across all schools within the district, there was a mismatch between the factors that influence hiring decisions and those correlated with teacher quality (RQ1-RQ3). Prior studies argue this misalignment is likely due to either a lack of information about candidates or principals' preferences, which in turn leads to poor choices about who to hire. In this study, we explore another possibility: hiring outcomes may appear less than ideal because the pool of candidates a principal can successfully hire from may differ from the district-wide pool of candidates. However, we find no observable systematic differences in the size and quality of the applicant pools (RQ4). In other words, pool characteristics were not systematically related to teacher candidate characteristics. Moreover, no observable principal characteristics were associated with selecting a high-GPA candidate (RQ5).

Our finding that discrepancies between predictors of principals' hiring decisions and predictors of subsequent teacher performance were not due to differences in candidate pools lends credence to the notion that lack of information or imperfect decision-making on the part of principals is driving the discrepancies. This suggests that policies designed to provide more information about candidates (either directly through targeted messaging or indirectly via pre-screening of candidates) could improve

---

[13] The average GPA of *all* candidates selected for requests to hire (as opposed to the *first* candidate selected) was

positively associated with both pool size and the proportion of high-GPA candidates.

teacher quality overall and enhance equity in access to effective teachers. Similarly, instituting incentives to select high-GPA candidates could improve teacher quality and align the predictors of hiring requests with teachers' evaluation scores.

However, these policy implications may be overly broad given that our findings are based solely on one measure of teacher candidate quality (undergraduate GPA) because of a paucity of reliable, observable measures of candidate quality (such as those listed in Table 1).[14] Further, while we did not find a clear relationship between observable principal characteristics and hiring outcomes, empirical evidence from Florida and North Carolina indicate that there can be significant variation in the effectiveness of newly hired teachers across schools.[15] Moreover, since principal characteristics were unrelated to teachers' characteristics among those selected to receive a hiring request, targeted professional learning for principals about teacher hiring or interventions regarding talent recruitment should be based on school outcomes rather than observable principal characteristics.

CONCLUSION

Teacher quality has substantial and enduring effects on overall student achievement, and variation in access to high-quality teachers can exacerbate achievement gaps across students. Given the difficulty in enticing existing teachers to transfer to low-performing schools (e.g., Boyd et al., 2005; Boyd et al., 2011), an obvious policy lever to promote the equitable distribution of teachers is to improve the initial selection of teachers.

Although we uncover important evidence on a metro-Atlanta school district's hiring system, much remains unclear. Given the current findings, the most likely direction to improve hiring outcomes is to influence principals' request-to-hire decisions. Given the dire financial situation facing districts during the COVID-19 pandemic, large financial incentives are not feasible. Instead, as a first step, one could pilot low-cost informational interventions, such as highlighting key candidate characteristics in application materials, pre-screening or pre-ranking candidates, and providing guidance to principals on the importance of teacher characteristics. Ideally, this would be done using a randomized design, so outcomes for schools participating in the pilot could be directly compared to outcomes for non-pilot schools.

In addition, it would be worthwhile to explore the efficacy of the screening tools the district has already been using, such as the TeacherInsight screener and the Hire-Vue video interview tool. In the case of TeacherInsight, one could estimate if a higher minimum score is appropriate or whether the tool, as currently used, is of significant value. Similarly, the impacts of the (non-mandatory) use of Hire-Vue could be studied to determine if piloting of a mandatory use of Hire-Vue by applicants could improve hiring outcomes.

Tim R. Sass is the corresponding author and can be contacted at tsass@gsu.edu. The original version of this policy brief was released in August 2019. This updated version extends the original research and analyzes differences across schools in the size and quality of their candidate pools as well as the relationship between school leader

---

[14] We observe test-based measures of teacher performance, including Student Growth Percentiles (see

Table 1), but these are available only for the subset of teachers who teach in tested grades and subjects.
[15] See Sass et al. (2012).

*characteristics and attributes of the first
candidate selected for a hiring offer.*

DATA APPENDIX

Some Teaching Experience is defined as any reference to teaching in the teacher candidates' employment history. Keywords such as "teacher" or "teaching" were used to search for previous teaching experience.

National Board Certified: Teacher candidates who hold a current certification from the National Board for Professional Teaching Standards.

Later Applicant is a continuous variable defined as the average application date percentile across all positions a candidate applied to. The application date percentile ranks teacher candidates by the timing of their application; a value of 25 would indicate that one-quarter of the candidates for a position applied before the given candidate. Higher ranks indicate that a candidate applied later compared to the first application received for the position.

Advanced Degree: The teacher candidate earned a master's, doctorate, or professional degree.

Currently Under Contract: The teacher candidate is currently under contract with a different organization.

Previously Worked in the District is defined as any former employee in the district. Teacher candidates are marked as having previously worked in the district if: they specify the district in their work history, the district is listed in their certified personnel employment records, the district is noted in their HR file, or if they check a box on their application.

Student Taught in District: At least some of the teacher candidate's student teaching practicum was in the district's schools.

REFERENCES

Aaronson, D., Barrow, L., & Sander, W. (2007). Teachers and Student Achievement in the Chicago Public High Schools. *Journal of Labor Economics, 25*(1), 95-135.

Boyd, D., Lankford, H., Loeb, S., & Wyckoff, J. (2005). Explaining the short careers of high-achieving teachers in schools with low-performing students. *American Economic Review, 95*(2), 166-171.

Boyd, D., Lankford, H., Loeb, S., Ronfeldt, M., & Wyckoff, J. (2011). The Role of Teacher Quality in Retention and Hiring: Using Applications to Transfer to Uncover Preferences of Teachers and Schools. *Journal of Policy Analysis and Management, 30*(1), 88-110.

Boyd, D., Lankford, H., Loeb, S., & Wyckoff, J. (2013). Analyzing the Determinants of the Matching Public Schools Teachers to Jobs: Disentangling the Preferences of Teachers and Employers. *Journal of Labor Economics, 31*(1), 83-117.

Bruno, P., & Strunk, K. O. (2019). Making the Cut: The Effectiveness of Teacher Screening and Hiring in the Los Angeles Unified School District. *Educational Evaluation and Policy Analysis, 41*(4), 426-460.

Chetty, R., Friedman, J. N., Hilger, N., Saez, E., Schanzenbach, D. W., & Yagan, D. (2011). How Does Your Kindergarten Classroom Affect Your Earnings? Evidence From Project STAR. *The Quarterly Journal of Economics, 126*(4), 1593-1660.

Chetty, R., Friedman, J. N., & Rockoff, J. E. (2014). Measuring the Impacts of Teachers II: Teacher Value-Added and Student Outcomes in Adulthood. *American Economic Review, 104*(9), 2633-79.

Feng, L., & Sass, T. R. (2017). Teacher Quality and Teacher Mobility. *Education Finance and Policy, 12*(3), 396-418.

Hanushek, E., & Rivkin, S. (2007). Pay, Working Conditions, and Teacher Quality. *The Future of Children, 17*(1), 69-86.

Imazeki, J. (2005). Teacher Salaries and Teacher Attrition. *Economics of Education Review, 24*, 431-449.

Jacob, B. A., Rockoff, J. E., Taylor, E. S., Lindy, B., & Rosen, R. (2018). Teacher Applicant Hiring and Teacher Performance: Evidence from D.C. Public Schools. *Journal of Public Economics, 166*, 81-97.

Kane, T. J., Rockoff, J. E., & Staiger, D. O. (2008). What Does Certification Tell Us About Teacher Effectiveness? Evidence From New York City. *Economics of Education Review, 27*(6), 615-631.

Lankford, H., Loeb, S., & Wyckoff, J. (2002). Teacher Sorting and the Plight of Urban Schools: A Descriptive Analysis. *Educational Evaluation and Policy Analysis, 24*(1), 37-62.

Rivkin, S. G., Hanushek, E. A., & Kain, J. F. (2005). Teachers, Schools, and Academic Achievement. *Econometrica, 73*(2), 417-458.

Sass, T., Hannaway, J., Xu, Z., Figlio, D. N., & Feng, L. (2012). Value Added of Teachers in High-Poverty Schools and Lower Poverty Schools. *Journal of Urban Economics, 72*, 104-122.

Scafidi, B., Sjoquist, D. L., & Stinebrickner, T. R. (2007). Race, Poverty, and Teacher Mobility, *Economics of Education Review, 26*(2), 145-159.

ACKNOWLEDGMENTS

ABOUT THE AUTHORS

Katherine Stewart is the acting coordinator of data and accountability in the Division of Career and College Readiness at the Maryland State Department of Education. Prior to this role, she was a graduate research assistant with the Georgia Policy Labs. Her research focuses on the economics of education, utilizing quantitative, survey, and experimental methods. In particular, she is interested in teacher hiring and methods to improve the quality of the teacher pool. Her research has been funded by Georgia State University's Center for the Economic Analysis of Risk. She is also a 2019 Dan E. Sweat Fellow. Katherine received her Ph.D. in economics from Georgia State University.

Tim R. Sass is a professor of economics at Georgia State University and the W.J. Usery Chair of the American Workplace. He is also the faculty director of the Metro Atlanta Policy Lab for Education (MAPLE). Specific areas of interest include teacher labor supply, the measurement of teacher quality, and school choice. His work has been published in numerous academic journals and has been supported by grants from the U.S. Department of Education, the Gates Foundation, the Smith Richardson Foundation, Arnold Ventures, and the Spencer Foundation. He has acted as a consultant to school systems in New York City, Washington, D.C., Charlotte, NC, the state of Florida, and the state of New York. He is also a senior researcher at the Center for Analysis of Longitudinal Data in Education Research (CALDER).

Thomas Goldring is the director of research at the Georgia Policy Labs. He supports the faculty directors in managing research projects and providing analytical and technical support across GPL's three components. He has researched issues in K-12 education, including educational accountability, school finance, and graduation rates; early childhood education; career and technical education; post-secondary education; and education and mortality. He received his doctorate in public policy and management from Carnegie Mellon University and completed a post-doctoral fellowship at the University of Michigan.

ABOUT THE GEORGIA POLICY LABS

The Georgia Policy Labs (GPL) is a collaboration between Georgia State University and a variety of government agencies to promote evidence-based policy development and implementation. Housed in the Andrew Young School of Policy Studies, GPL works to create an environment where policymakers have the information and tools available to improve the effectiveness of existing government policies and programs, try out new ideas for addressing pressing issues, and decide what new initiatives to scale. The goal is to help government entities more effectively use scarce resources and make a positive difference in people's lives. GPL has three components: The Metro Atlanta Policy Lab for Education works to improve K-12 educational outcomes; the Career & Technical Education Policy Exchange focuses on high-school-based career and technical education in multiple U.S. states; and the Child & Family Policy Lab examines how Georgia's state agencies support the whole child and the whole family. In addition to conducting evidence-based policy research, GPL serves as a teaching and learning resource for state officials and policymakers, students, and other constituents. See more at gpl.gsu.edu.