

# Teacher Preparation and Employment Outcomes of Beginning Teachers in Rhode Island

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# Teacher Preparation and Employment Outcomes of Beginning Teachers in Rhode Island

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Because teacher turnover can adversely affect student achievement and local education budgets, many states want to better understand the extent to which teachers switch schools or leave the state public school system. Leaders at the Rhode Island Department of Education are interested specifically in understanding factors related to teacher mobility, retention, and attrition. This study examined these outcomes among beginning teachers in Rhode Island who were trained in a teacher preparation program in the state between 2012/13 and 2016/17 and who then taught for at least one year in the state public school system by the 2017/18 school year. After three years about one-third of these beginning teachers were still teaching in their initial school, one-third were teaching in another school in the state public school system, and one-third were no longer teaching in the state public school system. In general, there was no statistically significant relationship between a beginning teacher's preparation program provider and the teacher's mobility, retention, or attrition outcome. These outcomes did vary by teacher certification field. They also varied by teacher preparation program type: teachers who were trained in alternative programs (programs that permit teaching before completion of all requirements for certification) were more likely than teachers who were trained in traditional undergraduate, graduate, or nondegree programs to stay in their school after one year and more likely to leave after three years. Stakeholders can use the findings from this report to inform policies and supports for beginning teachers, especially teachers who were certified in fields with higher attrition rates and teachers who were trained in alternative programs.

## Why this study?

Nationally, 16 percent of beginning teachers change schools after one year, and 17 percent leave the profession in the first four years (Gray & Taie, 2015). Because teacher turnover can adversely affect student achievement and local education budgets, many states want to better understand the extent to which teachers change schools or leave the state public school system (Guin, 2004). Leaders at the Rhode Island Department of Education (RIDE) are interested specifically in understanding the factors related to teacher mobility, retention, and attrition in Rhode Island public schools. Recent analyses of the state's mobility and attrition rates for early-career teachers<sup>1</sup> who were teaching in 2011/12 revealed that 28 percent changed schools and 22 percent were no longer teaching in the state public school system by 2015/16 (Matlach, 2017). Mobility rates were highest among elementary school teachers, and attrition rates were highest in schools with large shares of racial/ethnic minority students.<sup>2</sup> The current study builds on this prior work by connecting mobility analyses to the state's preparation program providers and multiple certification fields, specifically for beginning teachers.

For additional information, including background on the study, technical methods supporting analyses, and other analyses, access the report appendixes at <https://go.usa.gov/xG47Y>.

The research presented here utilized confidential data from the Rhode Island Department of Education (RIDE). The views expressed here are those of the authors and do not necessarily represent those of RIDE or other data contributors. Any errors are attributable to the authors.

1. Early-career (beginning) teachers are educators with 0–2 prior years of teaching experience in the Rhode Island public school system in 2011/12 through 2015/16. This report focuses on beginning teachers who were in their first year of teaching in the state public school system, after one year and three years.
2. These mobility and attrition rates may be influenced by teachers who were in a one-year temporary position or who were laid off at the end of a year. The Rhode Island Department of Education does not have statewide data on how many teachers are included in these categories; therefore, results should be interpreted with caution.

To inform stakeholders in Rhode Island about the mobility patterns and trends of newly certified teachers, this study analyzed patterns of mobility and certification among beginning teachers by preparation program type. The study also examined these patterns for public and private preparation program providers and separately for each teacher preparation program provider (see box 1 for definitions of key terms). The study contributes to the literature on factors related to teacher turnover, such as teacher preparation (for example, Ingersoll et al., 2014; see appendix A for a review of the literature), and relates directly to the state’s teacher preparation standards, which require that districts and teacher preparation program providers collaborate to create mutually beneficial relationships to aid teacher placement and inform district hiring needs. RIDE intends to discuss the study results with the state’s preparation program providers and local education agency leaders to review the preparation fields offered and how they align with state needs and to consider the implications for policies, practices, and supports for teacher candidates. As part of its ongoing effort to inform prospective teachers about the landscape of teaching in Rhode Island, RIDE will also share the results with prospective teachers and other interested stakeholders.

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### Box 1. Key terms used in this report

**Alternative teacher preparation program.** A program that allows participants to become teachers before completing all the program requirements toward certification. Individuals who participate in such programs generally teach under a preliminary certification while completing coursework through a state-approved preparation program. All alternative teacher preparation programs examined in this study were offered through private providers.

**Attrition rate.** The percentages of teachers who are no longer teaching in the Rhode Island public school system after one year and after three years. These teachers are referred to as leavers, although they did not necessarily choose to leave; some may have been laid off or may have had a one-year position.

**Beginning teacher.** A teacher who was trained in a teacher preparation program in Rhode Island who is in the first year of teaching in the state public school system. This study focused on beginning teachers.

**High-need school or district.** A school or district in which the percentage of students eligible for the national school lunch program and the percentage of racial/ethnic minority students are both greater than 75 percent.

**Leavers.** Teachers who are no longer employed by the Rhode Island public school system after teaching in the state for at least one year. These teachers may have chosen to leave, may have been laid off, or may have had a one-year position.

**Mobility rate.** The percentages of teachers who move to any teaching position at a different school in the Rhode Island public school system from their initial school of employment after one year and after three years. The teachers may be teaching in the same or a different field in the new school. These teachers are referred to as movers.

**Movers.** Teachers who move to a teaching position at a different school in the Rhode Island public school system from their initial school of employment. Teachers who taught at more than one school in their first year of teaching in the state public school system are considered movers only if they moved from every school in which they taught that year. (Teachers who remained in at least one school in their first year of teaching in the state public school system are considered stayers.)

**Nondegree program.** A teacher preparation program that issues certificates but not degrees. Examples of certificates include Building Administrator and Elementary English as a Second Language.

**Preparation field.** A teacher’s specialized field of training in a teacher preparation program. For this study the fields were collapsed into the following classifications: early childhood, elementary, middle grades, secondary, special education, world languages, and electives. Teachers are not necessarily certified in all fields in which they were trained.

**Retention rate.** The percentages of teachers who remain teaching in their initial school after one year and after three years. These teachers are referred to as stayers.

**Role-changers.** Former teachers in the Rhode Island public school system who changed to a nonteaching role—for example, a former teacher who becomes a school administrator.

**Stayers.** Teachers who remain teaching in at least one of their initial schools after one year and after three years.

**Teacher certification.** A certificate that allows a teacher to teach in a public school. Teachers may be certified in more than one field. Rhode Island offers certificates in more than 100 fields. In this study the teacher certification fields were combined into the following categories: early childhood; elementary; middle grades; secondary; special education; world languages; dual-language, bilingual, or English as a second language; electives; and nonteacher related (such as administrator).

**Teacher preparation program.** A state-approved sequence of courses and experiences that, if completed, meets preparation requirements for teacher certification in Rhode Island. At the time of this study, 11 teacher preparation program providers (see below) in Rhode Island offered more than 100 different programs. Teacher preparation fields ranged from programs tied to a specific certification, such as secondary physics, to more general programs, such as secondary education, with multiple certification options, such as English, general science, and math.

**Teacher preparation program provider.** An institution or organization that offers one or more teacher preparation programs. At the time of this study there were 11 approved providers. Teacher preparation program providers are either public or private. Providers may offer one or more teacher preparation program types (see below); for example, a provider can offer both graduate and undergraduate programs.

**Teacher preparation program type.** Individuals enter the teaching force in the Rhode Island public school system through one of four program types: undergraduate, graduate, nondegree, or alternative.

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## Research questions

This report focuses on the 1,164 beginning teachers in Rhode Island who were trained in the state between 2012/13 and 2016/17 and who then taught for at least one year in the state public school system by the 2017/18 school year. These teachers accounted for 38 percent of the 3,045 teachers trained during that period (see table D1 in appendix D).<sup>3</sup> It presents findings for two research questions:<sup>4</sup>

1. What percentages of beginning teachers moved to another school in the state public school system, stayed in their initial school, and left teaching in the state public school system after one year and after three years? Do the percentages differ by teacher preparation program provider, teacher preparation program type, or teacher certification field?
2. Is there a relationship between the teacher preparation program provider or program type in which a beginning teacher was trained and the teacher's likelihood of being retained in the state public school system?

The study examined patterns in mobility, retention, and attrition for beginning teachers from all 11 of the state's teacher preparation program providers for three years using longitudinal data (see box 2 for a summary of the data and methods used in the study and appendix B for details). Specifically, it examined mobility, retention, and attrition outcomes for teachers who were trained in various state-approved teacher preparation programs and certification fields in Rhode Island. The outcomes were examined after one-year and after three years because previous research shows that most teachers leave the profession within their first five years (Carroll & Foster, 2010). Together, the state's 11 preparation program providers offer preparation and certification in more than 100 fields of teaching through a variety of program types.

3. Across the five cohorts of beginning teachers in this study, the percentage of teachers who were trained in a Rhode Island program who were teaching in the Rhode Island public school system increased each year, for a total of 38 percent by the end of 2016/17. Of the 2012/13 cohort 43 percent were teaching five years later (table D2 in appendix D). This indicates that it may take beginning teachers several years to find employment in the state public school system.
4. The study team also investigated a third research question as part of this study: Are beginning teachers who were trained in Rhode Island teaching in the fields in which they were prepared, regardless of their mobility? The results are presented in a separate infographic, available at <https://go.usa.gov/xG47Y>.

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## Box 2. Data sources, sample, and methods

**Data sources.** The Rhode Island Department of Education’s (RIDE) Office of Educator Excellence and Certification Services provided anonymized teacher-level data on teacher preparation program fields and characteristics, which were selected based on RIDE’s interests and on prior research (Clotfelter et al., 2007; Ingersoll et al., 2012, 2014). RIDE also provided teacher-level employment data, which included annual teaching assignments, certifications, and teacher characteristics. RIDE provided a separate file with school characteristics, including school size, high-need status, and grade span. Additional district- and school-level characteristics, such as percentages of students who are economically disadvantaged, were obtained through the Common Core of Data (U.S. Department of Education, 2016). A complete list of the variables examined is in table B1 in appendix B.

**Sample.** The primary sample included 1,164 beginning teachers who were trained at any of the 11 teacher preparation program providers in Rhode Island and who were ever employed in the Rhode Island public school system from 2012/13 through 2016/17. The sample represents 38 percent of the 3,045 teachers who were trained in a teacher preparation program in Rhode Island over this period. The sample does not include the approximately 60 percent of teachers who completed training in a Rhode Island preparation program but were not employed in the state public school system from 2012/13 through 2016/17. The sample also does not include beginning teachers in Rhode Island who were trained in another state, who accounted for approximately 4 percent of newly certified teachers in the state (Rhode Island Department of Education, 2017). Although RIDE has comparable program preparation data for this group of teachers, the data are not collected in a way that is easy to analyze. The sample also does not include beginning teachers who received certification other than through a Rhode Island–approved program—for example, through reciprocity with another state. The sample used in this study can be considered a sample of the many cohorts of beginning teachers in Rhode Island who were trained in the state.

A subset of the primary sample was used to calculate mobility, retention, and attrition outcomes. That analytic sample included four cohorts of teachers for whom these outcomes could be examined after one year, and three cohorts of teachers for whom the outcomes could be examined after three years (see table B2 in appendix B). The 218 teachers in the primary sample who did not start teaching in the Rhode Island public school system until the 2017/18 school year were removed from the mobility analyses because employment data beyond their first year were not yet available. Similarly, the analytic sample for the three-year mobility rates excluded 493 teachers who were not at least three years removed from their first year of teaching. For example, teachers who began teaching in the 2015/16 school year were excluded from the three-year mobility analysis because employment data were not yet available through their fourth year. Therefore, the analytic sample for mobility, retention, and attrition outcomes included 946 people after one year and 453 people after three years (see table B2).

**Methodology.** For research question 1 the study team created a mobility variable that indicated whether a teacher moved to another school in the state public school system (mover), stayed in his or her initial school (stayer), or was no longer employed in the state public school system (leaver).<sup>1</sup> Cohorts were pooled to produce mobility rates after one year and after three years of teaching in the state public school system in order to examine patterns over time. The three-year timeframe was chosen instead of a longer period so that mobility rates could be calculated for three cohorts. These rates are based on the state’s end-of-year teacher assignment data. Statistical tests were used to disaggregate mobility rates by teacher preparation program characteristics and by teacher certification field.

Research question 2 examined teacher retention after one year and after three years. Each outcome was analyzed separately using statistical tests to determine whether the teacher preparation program provider or type was related to retention after teacher and school characteristics were controlled for.

All statistically significant results are discussed in this report. In most instances the results represent differences between groups of at least 20 percentage points. For comparisons that involved fewer than 10 cases in one group, the statistically significant differences between groups were at least 10 percentage points.

Note

1. Leavers might include some teachers who are still in the teaching profession, either in a private school in Rhode Island or in a public or private school in another state.

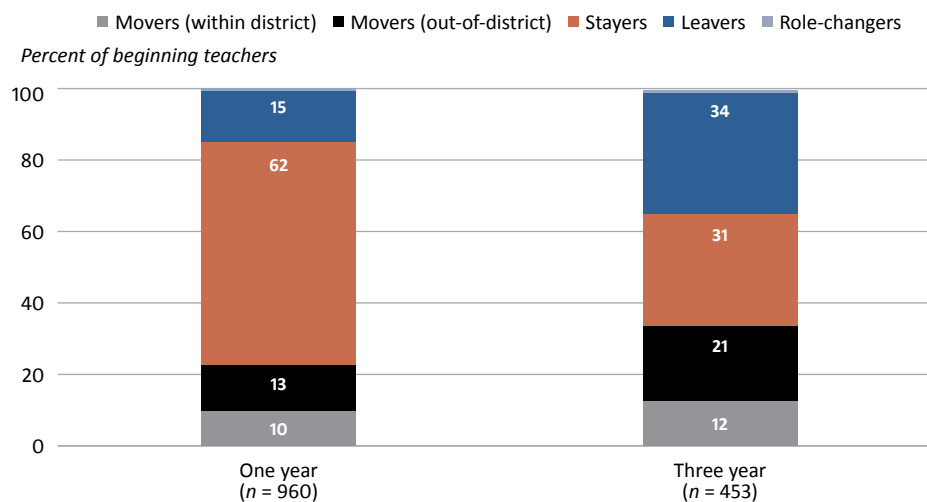
## Findings

To provide context, this section first highlights key findings for the one- and three-year mobility, retention, and attrition rates of the 946 beginning teachers who taught in the Rhode Island public school system after completing a teacher preparation program in the state between 2012/13 and 2016/17. For the analysis of outcomes after three years, findings are presented for mobility, retention, and attrition outcomes by teacher preparation program provider and type and by teacher certification field for the 453 beginning teachers who were trained in the state between 2012/13 and 2014/15. Finally, findings are presented separately for beginning teachers who were trained in an alternative program, which are offered only by private providers.

### *Mobility, retention, and attrition of beginning teachers*

*After three years about one-third of beginning teachers who were trained in Rhode Island and who taught in the state public school system for at least one year between 2012/13 and 2016/17 were still teaching in their initial school, one-third were teaching in another school in the state public school system, and one-third were no longer teaching in the state public school system.* After one year approximately 62 percent of the teachers in the sample were still teaching in their initial school, and 15 percent were no longer teaching in the state public school system (figure 1; see table C1 in appendix C).<sup>5</sup> After three years 31 percent were still teaching in their initial school, 21 percent were teaching in another school outside their district, 12 percent were teaching in another school in their district,<sup>6</sup> and 34 percent were no longer teaching in the state public school system.<sup>7</sup>

**Figure 1. Beginning teachers who were trained in Rhode Island and who taught in the state public school system for at least one year left teaching in the state public school system at a higher rate after three years than after one year, 2012/13–2017/18**



Note: Less than 3 percent of beginning teachers who were trained in Rhode Island changed roles; to keep the discussion concise, results for role-changers are presented in the figures but are not discussed in the findings.

Source: Authors' analysis of Rhode Island Department of Education data for 2012/13–2017/18.

5. One-year and three-year mobility and retention rates were calculated using the first year of a teacher's employment, regardless of how many years after the teacher was trained.
6. The study team examined within-district and outside-district mobility rates, but because there were no consistent patterns that were noteworthy, the remainder of the report presents only the aggregated statewide mobility rates for ease of exposition.
7. In this study teachers trained in alternative preparation programs influence the overall one- and three-year retention, mobility, and attrition rates. For that reason findings are presented separately at the end of the findings section for alternative program teachers and for the overall sample after alternative program teachers are excluded.

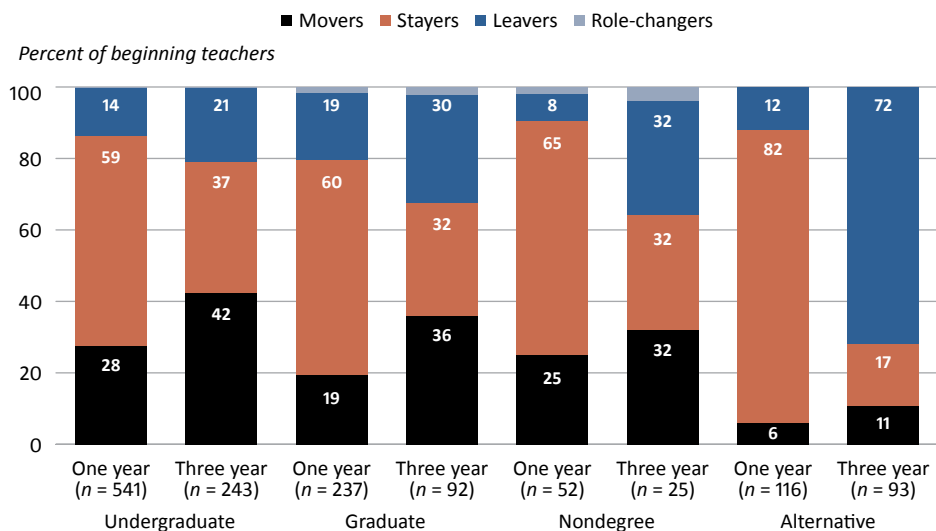
**Beginning teachers who were trained in undergraduate, graduate, and nondegree teacher preparation programs in Rhode Island had similar mobility, retention, and attrition rates, but beginning teachers who were trained in alternative programs were significantly more likely to leave the state public school system after three years**

After one year beginning teachers who were trained in alternative teacher preparation programs had the lowest mobility rate (6 percent) and the highest retention rate (82 percent; figure 2; see table C1 in appendix C). After three years teachers who were trained in alternative programs had a higher attrition rate (72 percent) than teachers who were trained in undergraduate (21 percent), graduate (30 percent), and nondegree programs (32 percent).

After one year and after three years, the mobility, retention, and attrition rates of beginning teachers did not differ significantly across individual teacher preparation program providers, except in the case of one private provider offering an alternative program. Provider 11, which offers only an alternative program, had a higher one-year retention rate and a lower three-year retention rate than the state’s two largest providers, Provider 4 and Provider 5 (see table C1 in appendix C).

While beginning teachers who were trained at private providers in Rhode Island had higher attrition rates but lower mobility rates after three years than teachers who were trained at public providers, the differences were not significant after teachers who were trained in alternative programs were removed from the analysis. After three years beginning teachers who were trained at private providers in Rhode Island left teaching in the state public school system at a higher rate (48 percent) than teachers who were trained at public providers in the state (24 percent; see table C1 in appendix C). However, teachers who were trained at public providers had higher mobility rates after one year and after three years than teachers who were trained at private providers. For example, 42 percent of teachers who were trained at public providers moved to another school in the state public school system after three years compared with 23 percent of teachers who were trained at private providers. This difference appears to be associated with participation in an alternative program. After teachers trained at alternative programs were removed, there was no statistically significant difference in retention rates between teachers trained at public providers and those trained at private providers, even after teacher and school characteristics were controlled for (see tables C1, C3, and C4 in appendix C).

**Figure 2. Beginning teachers who were trained in alternative programs in Rhode Island stayed in their initial school at a higher rate after one year than beginning teachers who were trained in other program types, but the opposite was true after three years, 2012/13–2017/18**



Source: Authors’ analysis of Rhode Island Department of Education data for 2012/13–2017/18.

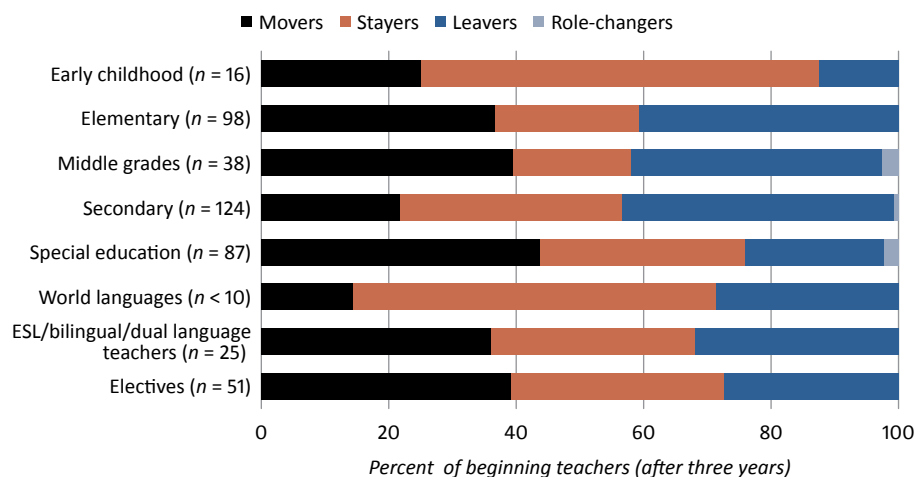
## Mobility, retention, and attrition of beginning teachers by certification field

The three-year mobility, retention, and attrition rates of beginning teachers who were trained in Rhode Island varied by teacher certification field; teachers with special education certification had the highest mobility rate, and teachers with early childhood certification had the highest retention rate. Across teacher certification fields there were no statistically significant differences in one-year mobility, retention, or attrition rates (see table C2 in appendix C). However, after three years teachers with special education certification had a statistically significantly higher mobility rate (44 percent) than beginning teachers with secondary certification (22 percent). Also after three years teachers with early childhood certification had a statistically significantly higher retention rate (63 percent) than teachers with elementary certification (23 percent; figure 3; see table C2).

Approximately 40 percent of beginning teachers who were trained in Rhode Island with elementary, middle grades, or secondary certification were no longer teaching in a Rhode Island public school after three years. National-level data suggest that attrition is higher among teachers of math, science, English, and special education than among teachers in other fields, such as foreign languages, physical education, arts, and career and technical education (Carver-Thomas & Darling-Hammond, 2017). Consistent with the national data, attrition in Rhode Island was higher among beginning teachers with elementary, middle grades,<sup>8</sup> or secondary certification (all of whom were prepared in math, science, English, or social studies) than among teachers with other certifications.

The same is not true for teachers in Rhode Island with special education certification, who had the second lowest three-year attrition rate (see table C2 in appendix C).<sup>9</sup> Teachers with special education certification had the highest three-year mobility rates, but the rates were statistically significantly different only from those of teachers with secondary certification. Together these results suggest that teachers with special education certification moved between schools at a higher rate than teachers with secondary certification but were among the least likely to leave teaching in the state public school system compared with teachers with other certifications.

**Figure 3. After three years beginning teachers who were trained in Rhode Island with special education certification had the highest mobility rate, and beginning teachers with early childhood certification had the highest retention rate, 2012/13–2017/18**



ESL is English as a second language.

Source: Authors' analysis of Rhode Island Department of Education data for 2012/13–2017/18.

8. In Rhode Island a teacher can teach in the middle school grades if he or she has a middle grades certification, an elementary school extension, or a secondary school extension.  
 9. Teachers with early childhood certification had the lowest three-year attrition rate (see table C2 in appendix C).



The three-year attrition rates in Rhode Island for beginning teachers with elementary (41 percent), middle grades (40 percent), and secondary (43 percent) certification were higher than national rates.<sup>10</sup> Nationally, the three-year attrition rate was 12 percent for beginning elementary school teachers (grades K–6) and 18 percent for beginning secondary school teachers (grades 7–12; Gray & Taie, 2015). Nationally, for teachers in schools with combined elementary and secondary grades, the three-year attrition rate was 21 percent (Gray & Taie, 2015). However, these national data represent teachers who left the field of teaching, which is not necessarily representative of the teachers in this study. The data in this study indicate whether a teacher continued teaching in the Rhode Island public school system; teachers who left the state public school system may have remained in the field of teaching but in a private school or in another state’s public school system.

### ***Mobility, retention, and attrition of beginning teachers who were trained in alternative teacher preparation programs***

Alternative teacher preparation programs in Rhode Island differ from other teacher preparation program types in that teachers who are trained in alternative programs are granted a preliminary teaching certification for at least one year that allows them to teach while they complete their program requirements. Alternative programs also offer a path to certification in a small number of fields.<sup>11</sup> Because of these and other unobserved differences, including alternative program teachers in the analysis of all teachers could skew results.

Supplemental analyses suggest that this is the case, particularly for three-year outcomes. The teachers prepared in alternative programs made up 12 percent of the sample used to examine mobility after one year and 21 percent of the sample used to examine mobility after three years (see table C1 in appendix C). The three-year analyses revealed that approximately 72 percent of beginning teachers trained in alternative programs were no longer teaching in the Rhode Island public school system after three years (see table C1 in appendix C). But when beginning teachers trained in alternative programs were removed from the sample of beginning teachers:

- The percentage of teachers who were no longer teaching in the state public school system after three years fell from 34 percent to 24 percent (see table C1).
- The percentage of teachers with elementary certification who remained in their initial school after three years rose from 23 percent to 26 percent (see table C2).
- The percentage of teachers with secondary certification who were no longer teaching in the state public school system after three years fell from 43 percent to 29 percent (see table C2).

### **Limitations**

There are a few important limitations to this study. First, the study is descriptive rather than causal and is not designed to demonstrate whether teacher preparation program providers are the cause of any variation in mobility and retention. Thus, the analyses cannot explain why outcomes varied. A lack of comprehensive data about the characteristics of teacher preparation programs means that the study is limited in its ability to address whether differences within or across program providers might have led to the observed results. In addition, the regression models had low explanatory power, which further supports the notion that other, unmeasured variables would better model the relationship between where a teacher is trained in Rhode Island and that teacher’s mobility, retention, and attrition outcomes in the state public school system. Further research is needed to explain the policies and practices within each program that might be associated with the observed variations in outcomes.

10. In the national data the categories for elementary school and high school teachers include teachers of special education, world languages, and electives, whereas in this study they do not.

11. Thus, these teachers had a narrower range of certifications than teachers who were trained in traditional programs. Specifically, the alternative programs in Rhode Island offer a general elementary certification, specialized secondary certifications such as in English or biology, and a limited number of special education certifications. They do not offer certifications in early childhood, elective courses, or English as a second language.

In addition, because prospective teachers choose their preparation program, the differences in outcomes could reflect the characteristics of prospective teachers who select different programs. The study data did not include information on the characteristics of beginning teachers (such as their motivation or grades) that might have explained some of the differences in mobility across program types and certification fields or between public and private providers.

Similarly, the data do not reveal why teachers left the Rhode Island public school system. If some teachers had one-year positions, that would result in overestimation of the attrition rates. Some of the teachers who left might also have been lower performing teachers whose contracts were not renewed. Past research has shown that beginning teachers who are more effective are more likely to stay in their schools (Robertson-Kraft & Duckworth, 2014). However, the current study did not examine the relationship between teacher effectiveness and different teacher preparation program providers and teacher retention, so it cannot yield conclusions about whether the most effective teachers remained and the least effective teachers left.

Another limitation of the study is the inability to generalize the findings to the broader population of Rhode Island beginning teachers trained in the state. The beginning teacher sample represented only about 38 percent of teachers trained in Rhode Island between 2012/13 and 2016/17 (1,164 of 3,045 beginning teachers). Many teachers trained in Rhode Island did not go on to teach in the state public school system. The data on these teachers are not yet in an easily analyzable format. Rhode Island would benefit by having a systematic statewide collection of information on all beginning teachers trained in the state that identified whether they intended to work in the state public school system but could not find employment or whether they intended to teach in a private school, teach in a public school in another state, or work in other roles.

## Implications

Because teacher preparation program providers are increasingly accountable to state education agencies for how well they prepare teachers, especially in hard-to-staff schools or subjects, RIDE and the program providers might be interested in these findings and in further understanding why teachers move, stay, or leave. Based on these findings, RIDE might consider implementing supports for teachers holding certain certifications. Together with districts and teacher preparation program providers, RIDE might also consider providing supports or incentives to increase retention for teachers who were trained in alternative programs, since these teachers left the Rhode Island public school system at higher rates after three years than teachers who were trained in traditional programs. The findings of the study also raise several questions that could be explored through further research.

### ***For state education agencies, districts, and teacher preparation program providers: Targeting certification fields and program types to reduce mobility and attrition***

Teachers with early childhood certification had the highest three-year retention rate (63 percent, compared with 23 percent among teachers with elementary certification, 18 percent among teachers with middle grades certification, and 35 percent among teachers with secondary certification; see table C2 in appendix C). As this study did not investigate why teachers chose to stay in their initial school, move to another school in the state public school system, or leave the state public school system, RIDE may want to explore why early childhood teachers are more likely to stay in their initial school. Perhaps early childhood certification differs from other grade-level certifications in some key characteristic. The difference in retention might also be related to teacher preparation program type. This study found that teachers who were trained in alternative programs experienced higher attrition than teachers who were trained in traditional programs. Given that none of the alternative programs in Rhode Island offer early childhood certifications (Rhode Island Department of Education, 2017), this might in part explain why retention was higher for teachers with early childhood certification than for teachers with other grade-level certifications.

RIDE might also want to use the findings to inform the supports that it and teacher preparation program providers offer to teacher candidates and beginning teachers, especially those in groups with the highest mobility rates, such as teachers with special education certification, and the highest attrition rates, such as teachers with secondary certification. This pattern is not unique to Rhode Island; special education teachers in three Regional Educational Laboratory Midwest Region states had higher five-year mobility rates than teachers in other grade levels and subject areas (Podgursky et al., 2016). In particular, teacher preparation program providers might consider ways to provide additional supports to candidates seeking special education certification, such as more time for practice teaching or additional mentorship once teachers are in their first position.

RIDE might also consider further investigating why teachers who were trained in alternative programs experienced higher attrition rates after three years than teachers who were trained in traditional programs. Because some alternative programs require only a two-year commitment, RIDE might be interested in understanding what motivates candidates to participate in such programs and what induces them to leave the Rhode Island public school system. Providing additional supports and incentives might make a difference in these teachers' decisions to remain in the state public school system. Other states with alternative teacher preparation programs might face similar challenges in retaining teachers and might benefit from conducting analyses similar to those in this study to examine mobility, retention, and attrition rates for teachers trained in alternative programs.

Prospective teachers can use the findings from this report to identify certification fields with teacher shortages, which could inform their selection of a certification field. For example, prospective teachers might find that participation in preparation programs is low and attrition rates are high for middle grades education and choose to pursue certification in that field rather than in elementary education, which is a more popular field.

### *For future research*

National attrition rates range from 15 percent to 17 percent for beginning teachers in their first three or four years of teaching (Gray & Taie, 2015). The rates found in this study of Rhode Island are higher because the attrition rate included any teacher who left the state; the national rates count only people who left teaching altogether, not just people who stopped teaching in a particular state. Nevertheless, Rhode Island might still be experiencing attrition rates above the national average for several reasons; for example, Rhode Island's small size and close proximity to several other states might partly explain its above-average attrition rates. Research to identify the reasons would be useful to RIDE and to teacher preparation program providers in designing supports for new teachers. A study that tracks teachers who were trained in Rhode Island and beginning teachers who move to other states could help RIDE understand whether teachers are leaving the profession or are seeking employment as teachers in another state. Research could investigate the factors associated with the decisions of beginning teachers in Rhode Island to move, stay, or leave.

Future studies that examine the mobility, retention, and attrition rates of beginning teachers should consider the percentage of teachers in the sample who were trained in alternative teacher preparation programs. In this study approximately 10 percent of beginning teachers who were trained in Rhode Island between 2012/13 and 2016/17 had attended an alternative program, one of which imposes a two-year teaching commitment (see table D3 in appendix D). Alternative programs provide a strong supply of teachers for hard-to-staff positions and are an important part of Rhode Island's beginning teacher workforce. Yet the results differ when these teachers are excluded from the analysis. For example, mobility, retention, and attrition rates were each 31–34 percent for all beginning teachers after three years, but when teachers trained in an alternative program were excluded from the analysis, mobility was 40 percent, retention was 35 percent, and attrition was 24 percent after three years (see table C1 in appendix C).

Future research could also explore what programmatic aspects of teachers' preparation experiences are related to teacher mobility, retention, and attrition. Currently, Rhode Island is working to collect information more systematically about the qualitative characteristics of teacher preparation programs, which could be used in future research.

An additional avenue of research would be to explore whether teachers who move to another school remain in the same certification field. Research could also explore whether teachers who are teaching out of their certification field move into placements within their certification field when they move to another school. These findings could supplement the findings from this study and help stakeholders better understand teachers' motivations for moving, such as to seek an assignment within their certification field.

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