



## **REL Appalachia Ask A REL Response**

Teacher Preparation; Teacher Workforce  
May 2019

### **Question:**

What research is available on tiered licensure systems? What is the relationship between teacher certification and teacher retention, equitable access to effective teachers, and/or student outcomes?

### **Response:**

Thank you for your request to our REL Reference Desk regarding evidence-based information about tiered teacher licensure structures. Ask A REL is a collaborative reference desk service provided by the 10 Regional Educational Laboratories (RELs) that, by design, functions much in the same way as a technical reference library. Ask A REL provides references, referrals, and brief responses in the form of citations in response to questions about available education research.

Following an established REL Appalachia research protocol, we searched for peer-reviewed articles and other research reports on tiered licensure systems. There is limited research on the impact of tiered licensure systems on teacher and student outcomes. As such, this document includes resources addressing two related topics:

- State tiered licensure policies and their implementation.
- The relationship between teacher certification and teacher retention, equitable access to effective teachers, and student achievement.

The resulting resources are presented by topic below. The sources included ERIC and other federally funded databases and organizations, research institutions, academic research databases, and general Internet search engines. For more details, please see the methods section at the end of this document.

The research team did not evaluate the quality of the resources provided in this response; we offer them only for your reference. Also, the search included the most commonly used research databases and search engines to produce the references presented here, but the references are not necessarily comprehensive, and other relevant references and resources may exist. References are listed in alphabetical order, not necessarily in order of relevance.

## State tiered licensure policies and their implementation

Aragon, S. (2016). *Single and multi-tiered licensure systems*. Denver, CO: Education Commission of the States. Retrieved from [http://www.ecs.org/wp-content/uploads/July-2016\\_Teacher-Licensure\\_certification\\_recruitment\\_retention-with-table.pdf](http://www.ecs.org/wp-content/uploads/July-2016_Teacher-Licensure_certification_recruitment_retention-with-table.pdf)

*From the report:* “The National Association of State Directors of Teacher Education and Certification (NASDTEC) collects 50-state data on teacher certification. NASDTEC’s members are the representatives from state education agencies or teacher standards boards who oversee teacher licensure. According to their data on teaching certificates, multi-tiered licensure systems consisting of at least three tiers are common throughout the states. Despite the trend towards multi-tiered licensure systems, however, many states maintain less complex systems consisting of one or two tiers.

As is demonstrated on the NASDTEC data referenced above, the qualifications for entrance into a tier and advancement to the next also vary quite significantly. According to an American Institutes for Research report, many states have started to include output measures (such as impact on student growth and performance evaluations) in addition to input measures (such as induction, professional development and advanced degrees) when setting licensure tier requirements.”

Education Commission of the States (ECS). (2018). *50-state comparison: Teacher advancement and licensure*. Denver, CO: Author. Retrieved from <http://ecs.force.com/mbdata/mbprofallrtanw?Rep=TLA18STA>

*From the web page:* “On the path to strengthen teacher pipelines, support excellent teaching and improve retention, many states have developed opportunities for teacher leadership and advancement. While most states offer advanced licenses to encourage ongoing learning and growth within the teaching profession, many are now also including supports and incentives to encourage more teachers to become leaders in their classrooms, schools and communities. Though district and school leaders drive teacher development and career progressions, state policymakers are creating structures and incentives to support high-quality systems. Education Commission of the States researched teacher leadership and licensure advancement policies in all states.”

Hoogstra, L. (2011). *Tiered teacher certification and performance-based assessment*. Naperville, IL: REL Midwest at Learning Point Associates. Retrieved from <https://education.mn.gov/mdeprod/groups/communications/documents/basic/mdaw/mduy/~edisp/052154.pdf>

*From the introduction:* “In response to a request from the Minnesota Board of Teaching, Regional Educational Laboratory (REL) Midwest produced this brief in order to identify relevant research on tiered teacher certification systems, state policies on teacher certification, and the criteria used to determine movement from one tier to the next. The brief summarizes recent research on teacher performance-based assessment as it relates to teacher certification. An overview of teacher certification requirements in states in the

Midwest region and states that have been awarded grants through the Race to the Top Fund is presented in an appendix.”

Paliokas, K. (2013). *Tiered licensure: Connecting educator effectiveness policies*. Washington, DC: American Institutes for Research, Center on Great Teachers & Leaders. Retrieved from <https://eric.ed.gov/?id=ED555674>

*From the abstract:* “Multitiered licensure structures can provide educators incentives to develop and improve their performance as they work toward advanced status. When working in tandem with compensation, career ladders, and ongoing professional learning policies, licensure can be a lever to promote educator development, advancement, and retention. Licensure requirements also provide districts with an accountability mechanism and help districts determine which teachers and principals should advance within the profession. Ensuring alignment across the multiple policy areas that connect with licensure policies is critical for developing a tiered licensure system that supports a coherent approach to promoting educator effectiveness. Several states are in the beginning stages of creating a tiered teacher-level licensing structure (e.g., standard, professional, master, or lead levels). This ‘Ask the Team’ brief was developed to provide states and regional centers with a quick guide to the current development of tiered licensure across the United States.”

### **Relationship between teacher certification and teacher retention, equitable access to effective teachers, and student outcomes**

Clotfelter, C., Ladd, H., & Vigdor, J. (2010). Teacher credentials and student achievement in high school: A cross-subject analysis with student fixed effects. *Journal of Human Resources*, 45(3), 655–681. Abstract retrieved from <https://eric.ed.gov?id=EJ889247>; full text available at [https://www.researchgate.net/profile/Helen\\_Ladd/publication/5188566\\_Teacher\\_Credentials\\_and\\_Student\\_Achievement\\_in\\_High\\_School\\_A\\_Cross-Subject\\_Analysis\\_with\\_Student\\_Fixed\\_Effects/links/0deec51e3fe83cba6b000000/Teacher-Credentials-and-Student-Achievement-in-High-School-A-Cross-Subject-Analysis-with-Student-Fixed-Effects.pdf?origin=publication\\_detail](https://www.researchgate.net/profile/Helen_Ladd/publication/5188566_Teacher_Credentials_and_Student_Achievement_in_High_School_A_Cross-Subject_Analysis_with_Student_Fixed_Effects/links/0deec51e3fe83cba6b000000/Teacher-Credentials-and-Student-Achievement-in-High-School-A-Cross-Subject-Analysis-with-Student-Fixed-Effects.pdf?origin=publication_detail)

*From the abstract:* “We use data on statewide end-of-course tests in North Carolina to examine the relationship between teacher credentials and student achievement at the high school level. The availability of test scores in multiple subjects for each student permits us to estimate a model with student fixed effects, which helps minimize any bias associated with the non-random distribution of teachers and students among classrooms within schools. We find compelling evidence that teacher credentials affect student achievement in systematic ways and that the magnitudes are large enough to be policy relevant. As a result, the uneven distribution of teacher credentials by race and socio-economic status of high school students—a pattern we also document—contributes to achievement gaps in high school.”

Cochran-Smith, M., Cannady, M., McEachern, K., Piazza, P., Power, C., & Ryan, A. (2011). *Teachers’ education, teaching practice, and retention: A cross-genre review of recent*

research. *Journal of Education*, 191(2), 19–31. Abstract retrieved from <https://eric.ed.gov/?id=1054404>; full text available at [https://www.researchgate.net/publication/265595194 Teachers' Education Teaching Practice and Retention A Cross-Genre Review of Recent Research](https://www.researchgate.net/publication/265595194_Teachers'_Education_Teaching_Practice_and_Retention_A_Cross-Genre_Review_of_Recent_Research)

*From the abstract:* “In the U. S., there is significant controversy about how teachers should be prepared and licensed. Many of the sharpest controversies stem from public skepticism about whether formal teacher preparation is necessary given the lack of conclusive evidence that it has a direct impact on students’ achievement. This article presents a review of recent research that empirically examines the connection between teachers’ education and either teaching practice or teacher retention (or both). The literature in six distinct genres of research is reviewed with cross-genre conclusions and implications.”

Constantine, J., Player, D., Silva, T., Hallgren, K., Grider, M., & Deke, J. (2009). *An evaluation of teachers trained through different routes to certification, final report (NCEE 2009 – 4043)*. Washington, D.C.: National Center for Education Evaluation and Regional Assistance, U.S. Department of Education. Retrieved from <https://eric.ed.gov/?id=ED504313>

*From the introduction:* “This study addresses two questions related to teacher preparation and certification: (1) What are the relative effects on student achievement of teachers who chose to be trained through different routes to certification and how do observed teacher practices vary by chosen route to certification?; and (2) What aspects of certification programs (such as the amount of coursework, the timing of coursework relative to being the lead teacher in the classroom, the core coursework content) are associated with teacher effectiveness? In 63 study schools, every grade that contained at least one eligible alternatively certified (AC) and one eligible traditionally certified (TC) teacher was included. Students in these study grades were randomly assigned to be in the class of an AC or a TC teacher. Students were tested at the beginning of the school year as a baseline measure and at the end of the year as an outcome. Classroom instruction was observed at one point during the year as an outcome. Reported findings include: (1) Both the AC and the TC programs with teachers in the study were diverse in the total instruction they required for their candidates; (2) While teachers trained in TC programs receive all their instruction (and participate in student teaching) prior to becoming regular full-time teachers, AC teachers do not necessarily begin teaching without having received any formal instruction; (3) There were no statistically significant differences between the AC and TC teachers in this study in their average scores on college entrance exams, the selectivity of the college that awarded their bachelor’s degree, or their level of educational attainment; (4) There was no statistically significant difference in performance between students of AC teachers and those of TC teachers; (5) There is no evidence from this study that greater levels of teacher training coursework were associated with the effectiveness of AC teachers in the classroom; and (6) There is no evidence that the content of coursework is correlated with teacher effectiveness.”

DeAngelis, K., White, B., & Presley, J. (2010). The changing distribution of teacher qualifications across schools: A statewide perspective post-NCLB. *Education Policy Analysis Archives*, 18(28). Retrieved from <https://eric.ed.gov/?id=EJ913482>

*From the abstract:* “A number of recent policy initiatives, including NCLB’s highly qualified teacher provisions, have sought to improve the qualifications of teachers and their distribution across schools. Little is known, however, about the impact of these policies. In this study, we use population data on teachers and schools in Illinois to examine changes in the level and distribution of teacher qualifications from 2001 to 2006. We find that schools in Chicago, especially those serving the highest percentages of low-income and minority students, experienced the greatest improvements in teacher qualifications during the period. Although positive changes in teachers’ academic qualifications in Illinois were not restricted to the state’s largest urban district, the results were more mixed in non-Chicago locales. The employment of new teachers with stronger academic skills and reductions in the employment of new and experienced teachers without full certification contributed to these outcomes. Our results suggest that a number of policy initiatives, including NCLB’s highly qualified teacher provisions, the introduction of alternative route programs in Illinois, and Chicago’s comprehensive efforts to recruit talented new teachers, together had a positive impact on the level and distribution of teacher qualifications. Even so, Illinois has a long way to go before disparities in teacher qualifications across its schools are eliminated.”

Kane, T., Rockoff, J., & Staiger, D. (2008). What does certification tell us about teacher effectiveness? Evidence from New York City. *Economics of Education Review*, 27(6), 15–631. Abstract retrieved from <https://eric.ed.gov/?id=EJ819491>; full text available at <https://www0.gsb.columbia.edu/faculty/jrockoff/certification-final.pdf>

*From the abstract:* “We use six years of panel data on students and teachers to evaluate the effectiveness of recently hired teachers in the New York City public schools. On average, the initial certification status of a teacher has small impacts on student test performance. However, among those with the same experience and certification status, there are large and persistent differences in teacher effectiveness. Such evidence suggests that classroom performance during the first two years is a more reliable indicator of a teacher’s future effectiveness. We also evaluate turnover among teachers by initial certification status, and the implied impact on student achievement of hiring teachers with predictably high turnover. Given modest estimates of the payoff to experience, even high turnover groups (such as Teach For America participants) would have to be only slightly more effective in each year to offset the negative effects of their high exit rates.”

What Works Clearinghouse. (2018). *National Board for Professional Teaching Standards Certification: WWC Intervention report*. Washington, DC: U.S. Department of Education, Institute of Education Statistics. Retrieved from [https://ies.ed.gov/ncee/wwc/Docs/InterventionReports/wwc\\_nbpts\\_021318.pdf](https://ies.ed.gov/ncee/wwc/Docs/InterventionReports/wwc_nbpts_021318.pdf)

*From the introduction:* “The ‘National Board for Professional Teaching Standards’ (‘NBPTS’) establishes standards for accomplished teachers and awards professional certification to teachers who can demonstrate that their teaching practices meet those standards.

Educators and experts in child development and related fields established the organization, and these experts work to develop and refine the standards for accomplished teaching based on the knowledge and skills that effective teachers demonstrate. The standards reflect five core propositions: (1) effective teachers are committed to students and their learning, (2) effective teachers know the subjects they teach and how to teach those subjects to students, (3) effective teachers manage and monitor student learning, (4) effective teachers think systematically about their practice and learn from experience, and (5) effective teachers are members of learning communities. Those seeking certification from the 'NBPTS' must complete a computer-based assessment and three portfolio entries. The certification process can take 1 to 5 years. The What Works Clearinghouse (WWC) identified five studies of 'NBPTS' certification that both fall within the scope of the Teacher Training, Evaluation, and Compensation topic area and meet WWC group design standards. No studies meet WWC group design standards without reservations, and five studies meet WWC group design standards with reservations. Together, these studies included more than 1,316,146 elementary and middle school students in grades 3 to 8 in four states. 'NBPTS'-certified teachers had mixed effects on mathematics achievement and no discernible effects on English language arts achievement for students in grades 3 through 8."

#### **Additional Ask A REL Responses to Consult**

Ask A REL Appalachia at SRI International. (2017). *Are there effective strategies/approaches to teacher licensure (e.g., waivers or alternative teacher certifications) to facilitate rural localities' ability to attract and retain teachers?* Retrieved from <https://ies.ed.gov/ncee/edlabs/regions/appalachia/askarel/aar17.asp>

Ask A REL Mid-Atlantic at Mathematica. (2017). *What are the key features and characteristics of existing teacher residency programs, and how are they implemented? What is the evidence regarding the effectiveness of teacher residency programs in diversifying the teacher workforce, increasing teacher retention, and improving student outcomes?* Retrieved from [https://ies.ed.gov/ncee/edlabs/regions/midatlantic/askarel\\_16.asp](https://ies.ed.gov/ncee/edlabs/regions/midatlantic/askarel_16.asp)

#### **Additional Organizations to Consult**

Center on Great Teachers and Leaders at American Institutes for Research:  
<http://www.gtlcenter.org/>

*From the website:* "The Center on Great Teachers and Leaders (GTL Center) is dedicated to supporting state education leaders in their efforts to grow, respect, and retain great teachers and leaders for all students. The GTL Center continues the work of the National Comprehensive Center for Teacher Quality (TQ Center) and expands its focus to provide technical assistance and online resources designed to build systems that:

- Support the implementation of college and career standards.
- Ensure the equitable access of effective teachers and leaders.
- Recruit, retain, reward, and support effective educators.

- Develop coherent human capital management systems.
- Create safe academic environments that increase student learning through positive behavior management and appropriate discipline.
- Use data to guide professional development and improve instruction.”

Education Commission of the States: <https://www.ecs.org/>

*From the website:* “Education Commission of the States serves as a partner to state policymakers by providing personalized support, unbiased information and opportunities for collaboration. Through our programs and services, policymakers gain the insight and experience needed to create more effective education policy.”

National Council on Teacher Quality: <https://www.nctq.org/>

*From the website:* “The National Council on Teacher Quality (NCTQ) is a nonpartisan, not-for-profit research and policy organization that is committed to modernizing the teaching profession. We conduct research to assist states, districts, and teacher prep programs with teacher quality issues. We don’t just call attention to what’s wrong, but offer concrete solutions to help solve teacher quality challenges.”

- State Teacher Policy Database: Licensure Advancement: <https://www.nctq.org/yearbook/national/Licensure-Advancement-79>

## Methods

### Keywords and Search Strings

The following keywords and search strings were used to search the reference databases and other sources:

- teach\* AND (licens\* OR cert\* OR credential\*) AND student AND (outcome OR impact)
- teach\* AND (licens\* OR cert\* OR credential\*) AND (retention OR distribution)

### Databases and Resources

We searched ERIC, a free online library of more than 1.6 million citations of education research sponsored by the Institute of Education Sciences (IES), for relevant resources. Additionally we searched the academic database ProQuest, Google Scholar, and the commercial search engine Google.

### Reference Search and Selection Criteria

In reviewing resources, Reference Desk researchers consider—among other things—these four factors:

- Date of the publication: Searches cover information available within the last ten years, except in the case of nationally known seminal resources.

- Reference sources: IES, nationally funded, and certain other vetted sources known for strict attention to research protocols receive highest priority. Applicable resources must be publicly available online and in English.
- Methodology: The following methodological priorities/considerations guide the review and selection of the references: (a) study types—randomized controlled trials, quasi experiments, surveys, descriptive data analyses, literature reviews, policy briefs, etc., generally in this order; (b) target population, samples (representativeness of the target population, sample size, volunteered or randomly selected), study duration, etc.; (c) limitations, generalizability of the findings and conclusions, etc.
- Existing knowledge base: Vetted resources (e.g., peer-reviewed research journals) are the primary focus, but the research base is occasionally slim or nonexistent. In those cases, the best resources available may include, for example, reports, white papers, guides, reviews in non-peer-reviewed journals, newspaper articles, interviews with content specialists, and organization websites.

Resources included in this document were last accessed on May 14, 2019. URLs, descriptions, and content included here were current at that time.

This memorandum is one in a series of quick-turnaround responses to specific questions posed by education stakeholders in the Appalachia region (Kentucky, Tennessee, Virginia, and West Virginia), which is served by the Regional Educational Laboratory Appalachia (REL AP) at SRI International. This Ask A REL response was developed by REL AP under Contract ED-IES-17-C-0004 from the U.S. Department of Education, Institute of Education Sciences, administered by SRI International. The content does not necessarily reflect the views or policies of IES or the U.S. Department of Education, nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. government.