12-2023

An Investigation of State Teacher Licensure Renewal Policies Related to Students With Disabilities

Lindsey Evelyn Hayes
University of Northern Colorado

UNIVERSITY OF NORTHERN COLORADO

Greeley, Colorado

The Graduate School

AN INVESTIGATION OF STATE TEACHER LICENSURE RENEWAL POLICIES RELATED TO STUDENTS WITH DISABILITIES

A Dissertation Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Philosophy

Lindsey Evelyn Hayes

College of Education and Behavioral Sciences
School of Special Education

December 2023

This Dissertation by: Lindsey Evelyn Hayes

Entitled: *An Investigation of State Teacher Licensure Renewal Policies Related to Students with Disabilities*

has been approved as meeting the requirement for the Degree of Doctor of Philosophy in College of Education and Behavioral Sciences in School of Special Education

Accepted by the Doctoral Committee

_____
Jennifer Urbach, Ph.D., Co-Research Advisor

_____
Corey Pierce, Ph.D., Co-Research Advisor

_____
Nancy Sileo, Ed.D., Committee Member

_____
Chia-Lin Tsai, Ph.D., Faculty Representative

Date of Dissertation Defense _____

Accepted by the Graduate School

_____
Jeri-Anne Lyons, Ph.D.
Dean of the Graduate School
Associate Vice President for Research

ABSTRACT

Hayes, Lindsey Evelyn. *An Investigation of State Teacher Licensure Renewal Policies Related to Students with Disabilities.* Published Doctor of Philosophy dissertation, University of Northern Colorado, 2023.

State teacher licensure renewal policies set standards for continued professional practice while promoting ongoing professional learning and growth. The purpose of this study was threefold: to describe the requirements related to students with disabilities (SWDs) in state teacher licensure renewal policies; to explore how states with high-performing SWDs relicensed teachers; and to investigate the relationship between the rigor of relicensure requirements and student achievement. This study investigated the extent to which current state licensure renewal policies encourage the development of expertise and skills that general and special education teachers need to effectively serve students with disabilities. In the first phase of the study, information about current state teacher licensure renewal policies was collected from state education agency websites. Thirteen states had content requirements related to SWDs in their licensure renewal policies, including content addressing special education and/or SWDs generally, reading instruction, dyslexia, behavior, and other disability-related topics. An analysis of the licensure renewal policies in high-performing states, as defined by student achievement and least restrictive environment outcomes for students with disabilities, revealed few commonalities across high-performing states. The second phase of the study investigated the relationship between the rigor of relicensure requirements and student achievement. Mirroring findings from previous research, there was no conclusive quantitative evidence linking state

licensure renewal policies to reading and mathematics achievement for students with disabilities. Based on these findings, implications are presented for future research, policy, and practice related to teacher licensure renewal.

ACKNOWLEDGEMENTS

I would like to thank my advisors, Dr. Jennifer Urbach and Dr. Corey Pierce, for their continual support of my professional and academic pursuits. I am honored to have had the opportunity to work with two people whom I respect so much as leaders. I would also like to thank my committee members Dr. Nancy Sileo and Dr. Chia-Lin Tsai for their guidance of this study. To the University of Northern Colorado faculty and doctoral scholars, it has been a pleasure to learn from you over the past four years. I hope that our paths will cross often.

I am deeply grateful to the many people in my professional life who have supported my academic endeavors. I owe many thanks to the CEEDAR Center leadership team—Meg Kamman, Melinda Leko, Shari Ostovar, and Erica McCray—who have been my constant cheerleaders. I would also like to thank my CEEDAR Center colleagues and collaborators past and present. I owe special thanks to Lynn Holdheide, a once-in-a-lifetime mentor who has given me so many professional opportunities. And of course, I am grateful for all my colleagues at the American Institutes for Research. There are simply too many of you to name, but please know that I am thankful for every piece of advice and word of encouragement.

Finally, I would like to thank my friends and family who supported me on this journey. This would not have been possible without my parents, Ed and Suzanne Hayes, who are my unwavering advocates. I would also like to thank the rest of my family for their support, especially Dann, Julie, Lizzie, Liam, Tom, Mary, Zac, Angela, and Molly. And finally, a huge thank you to Ben, who has had to listen to me rattle on about licensure renewal policy for the last year but still acts like it is the most interesting thing he has ever heard. I love you.

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CHAPTER I

INTRODUCTION

Every year, thousands of teachers across the United States engage in activities to renew their teaching license. Licensure renewal policies serve a dual purpose: to ensure that teachers continue to meet standards of professional competence and to promote professional growth across all stages of career development (Tooley & White, 2018). Although licensure renewal policies vary by state, most require teachers to participate in professional learning activities that encourage ongoing development of content expertise and pedagogical skills (Procopio, 2021; Tooley & Connally, 2016; Tooley & White, 2018).

This study investigated the extent to which current state licensure renewal policies encourage the development of expertise and skills teachers need to effectively serve students with disabilities (SWDs). Because approximately two-thirds of SWDs spend 80% or more of their day in the general education classroom (Office of Special Education Programs [OSEP], 2022), this study investigated relicensure requirements for general education teachers in addition to special education teachers. After presenting information on the current landscape of state licensure renewal requirements pertaining to SWDs, I explore the relationship between the rigor of these requirements and student achievement.

This chapter begins with a discussion of the definition and purpose of teacher licensure and licensure renewal. Next, I provide a brief history of teacher licensure in the United States with attention to licensure renewal practices. I then outline the rationale, purpose, and research

questions guiding this study. Finally, I present a conceptual framework for understanding the mechanisms of licensure renewal and their relationship to the variables of interest in this study.

Definition of Teacher Licensure

The U.S. Department of Education (n.d.) defines licensure as a process by which an individual is granted legal authority by a governmental agency to practice a profession. For aspiring educators, licensure is the "legal process by which individual states set minimum standards for entry" into the profession (Shive, 1988, p. 2). Licensure is usually treated as a distinct and separate process from certification, which is a process administered through nongovernmental agencies to recognize individuals for meeting standards of professional competence in a particular field (U.S. Department of Education, n.d.). In education, certification is a "professional rather than a legal process" in which standards set by professional organizations guide "knowledge-based assessments" of professional fitness (Shive, 1988, p. 2). In accordance with these definitions, a license is a credential that grants teachers the legal authority to practice their profession, whereas a certificate is a credential that specifies the discipline or area in which the teacher has demonstrated professional competency (Lilly, 1992; Shive, 1988; Sindelar et al., 2019).

In practice, many states use the terms license and certificate interchangeably to refer to teacher credentials. States might also use terms such as endorsement to signify the content or specialty area in which the credential holder is authorized to teach or practice. Definitions of terms related to licensure are included at the end of this chapter. For the purposes of this study, I used the terms licensure and relicensure unless referring to specific scholarly works, federal legislation, or state policies that used other terms.

Although licensure is closely linked with educator preparation, there are several important distinctions between these processes. Licensure policies are determined by states and might be based in legislative or regulatory authority. State education agencies, licensing boards, or professional standards boards typically grant teacher licenses. Educator preparation is supervised by educator preparation program (EPP) providers. Educator preparation program providers could include traditional institutions of higher education or alternative preparation programs (also called alternative route, alternative entry, alternative certification, or lateral entry programs). Educator preparation program providers do not issue teacher licenses, but typically undergo a state program approval process to ensure that individuals who completed their program met all requirements for state licensure (Lilly, 1992). In limited circumstances, states might grant individuals a temporary or provisional license that allows them to serve as teachers of record while they complete an approved EPP.

Regardless of their route of entry to teaching, teachers are eligible for a standard license once they have satisfied any requirements associated with their initial or provisional period of licensure, which typically lasts one to three years. A standard license, sometimes called a professional license, might be renewed as many times as needed throughout a teacher's career. Licensure renewal typically occurs on three- to six-year cycles with the majority of states requiring renewal every five years (Tooley & White, 2018). Common licensure renewal activities accepted or required by states include completing continuing education activities, earning National Board certification, fulfilling a specific amount of teaching experience, or providing evidence of satisfactory teacher evaluation results (Tooley & White, 2018).

Purpose of Teacher Licensure

Historically, the purpose of teacher licensure has been to provide a public guarantee that an individual is qualified to perform the duties of a teacher (LaBue, 1960). This purpose was repeatedly affirmed in the literature on teacher licensure. For example, Lilly (1992) defined licensure as an assurance that an individual is "safe to practice" teaching (p. 148). Shive (1988) operationalized the purpose of licensure in terms of "minimum standards of entry" to the profession (p. 2). Other scholars asserted that if the purpose of licensure is to ensure that only qualified individuals could become teachers, then an equally important function of licensure is to protect the public from incompetent individuals seeking to enter the profession (Schalock & Myton, 1988; Vorwerk & Gorth, 1986).

If the purpose of licensure is to ensure standards for entry into the profession, then the purpose of licensure renewal is to ensure standards for continuation in the profession. In a seminal study of national teacher relicensure practices, Tooley and White (2018) noted that relicensure "serves to reaffirm that teachers meet a minimum standard of professional competence and fitness" (p. 6). However, they also argued that the types of activities frequently required for licensure renewal, specifically continuing education requirements, suggested an additional, fundamental purpose of the relicensure process: to promote continued professional learning and growth. They further argued that states sometimes struggled to reconcile the compliance-driven and growth-driven purposes of the teacher relicensure renewal process:

> While most states have articulated the intended purpose of licensure and that of educator professional development, they have not explicitly articulated a clear rationale for how these two systems are meant to intersect in the renewal process to promote professional growth. (Tooley & White, 2018, p. 7)

The second purpose of teacher relicensure—ongoing professional learning and growth—is especially important for teachers of SWDs. Because preservice preparation alone is inadequate to develop expertise in all aspects of professional practice required of special education teachers, teacher educators have called for career-spanning models of professional development that are responsive to the evolving needs of the field (Brownell et al., 2010; Rock et al., 2016; Shepherd et al., 2016). There is even more need to ensure that comprehensive in-service professional learning supports are in place for general education teachers, as the preservice preparation of general education teachers has historically had a different theoretical orientation to that of special education teachers and has not prioritized the explicit, intensive instructional methods shown to benefit SWDs (Blanton et al., 2017; Brownell et al., 2005; Gilmour & Henry, 2018; Jones & Brownell, 2014). To this end, licensure renewal policies present an opportunity to systematize professional learning and growth expectations across the career continuum while promoting shared responsibility between general and special education teachers for the success of SWDs.

History of Teacher Licensure

Teacher licensure in the United States originated during the Colonial era. During this time, teacher licensing was primarily a local function that resulted in minimal consistency in licensing practices across regions (Tobin, 2012). Licenses of this era signified that the holder had permission to teach rather than any particular qualifications or competency (LaBue, 1960).

Throughout the 19th century, as the growing availability of free public education necessitated a greater number of teachers, control of licensure shifted from local authorities to states. The proliferation of state-run normal schools and teacher training institutes beginning in the 1860s further consolidated state control over teacher licensing practices (Angus, 2001). Early 20th century saw further expansion of states' control over teacher licensure via the establishment

of more rigorous licensure standards, the specialization of license types, and the growth of state bureaucracies to manage licensing (LaBue, 1960; Tobin, 2012). By 1937, 41 states issued teacher licenses solely through a designated state agency (Angus, 2001).

Post-World War II trends in teacher licensure have been heavily influenced by teacher shortages (Tobin, 2012). In times of teacher shortage, state standards for licensure tended to relax in an effort to attract more teachers. As teacher shortages decreased, standards for licensure (or at the very least standards for hiring) tended to become more stringent. For example, the post-war baby boom led to burgeoning student enrollment and corresponding teacher shortages, prompting states to pare back requirements for aspiring teachers to earn licensure (Tobin, 2012). In a more recent example, the Great Recession of 2008 led to greater numbers of people competing for fewer teaching positions, putting districts in a position to be more selective about the licensure status of new hires (Sutcher et al., 2019).

Influence of Federal Legislation

In the last two decades, federal legislation has played a significant role in shaping state teacher licensure policies (Geiger et al., 2014; Tobin, 2012). The reauthorization of the Elementary and Secondary Education Act as the No Child Left Behind Act of 2001 (NCLB, 2002) established a minimum standard for teacher licensure, the foundation of which was a provision that all teachers must be 'highly qualified.' The NCLB defined a highly qualified teacher (HQT) as someone who: (a) holds bachelor's degree, (b) holds full state certification, and (c) demonstrates competence in each core academic subject area taught. The core content area knowledge requirement was particularly notable for special education teachers who frequently supported multiple subjects.

Shortly after NCLB (2002) was signed into law, the U.S. Department of Education (2002) published the Secretary's Annual Report on Teacher Quality titled *Meeting the Highly Qualified Teachers Challenge*. The report expressed grave concerns about states' abilities to meet the requirements of NCLB, asserting that "outdated" state teacher licensure systems were equipped to do little more than "maintain low standards and high barriers at the same time" (U.S. Department of Education, 2002, p. vii). Citing recent research (e.g., Goldhaber & Brewer, 2000; Walsh, 2001), the report further argued that certain aspects of teacher preparation, namely education and pedagogy coursework, had little evidence of impact on student achievement. The report concluded with a call for a new model of teacher licensure that would prioritize standards for teachers' verbal ability and content knowledge while relaxing or eliminating most other requirements (U.S. Department of Education, 2002). Pushback on the report focused mainly on its narrow interpretation of the research linking teacher preparation and student achievement (Darling-Hammond & Youngs, 2002) as well as the contradiction between the Department's call for streamlined licensure requirements and Congress's clear intent to increase standards for entry to the profession via the HQT requirements (Boe et al., 2007).

The 2015 reauthorization of the Elementary and Secondary Education Act as the Every Student Succeeds Act (ESSA) supplanted NCLB as federal law governing teacher licensure. Unlike NCLB (2002), ESSA did not set minimum standards for entry to the teaching profession and reaffirmed states' purview over licensure. The ESSA granted states sole authority to determine teacher licensure requirements including how teachers were deemed qualified to deliver core content instruction. Since the enactment of ESSA, there has been a well-documented trend toward states relaxing their licensure requirements, particularly in response to teacher shortages (Tran & Smith, 2022; Walker, 2016; Will, 2022).

Although ESSA (2015) eliminated the federal requirement that teachers must be fully certified, this change did not apply to special education teachers. The Individuals with Disabilities Education Act (IDEA) of 2004 as amended by ESSA eliminated HQT requirements for special education teachers but reaffirmed federal requirements for the employment of special education teachers, namely that special education teachers must hold at least a bachelor's degree and have obtained full state certification (Green et al., 2021). As part of their annual applications for IDEA funding, states must provide assurance that all special education teachers in their state are either fully certified or, if not, provide a supplemental statement to the application affirming that any non-fully-certified special education teachers hold bachelor's degrees and are participating in an alternate preparation program featuring high-quality professional development, intensive supervision, and mentoring (CEEDAR Center, n.d.).

Trends in Relicensure Policy

Historically, teachers obtained relicensure by completing continuing education credits through a college or university. In this role, colleges of education acted as 'intermediaries' between state-mandated renewal requirements and teachers seeking relicensure (Hanes & Rowls, 1984, p. 123). During the 1980s, control of the licensure renewal process shifted away from higher education as states began to allow districts to sponsor activities leading to relicensure (Rowls & Hanes, 1982). By 1984, of the 40 states that required some form of licensure renewal, 29 states allowed the option for districts to administer state-approved professional learning offerings for relicensure (Hanes & Rowls, 1984). The trend toward local control of the relicensure process has continued and today district-administered professional learning activities are one of the most common ways for teachers to earn credit toward relicensure (Tooley & White, 2018).

Another notable shift in state relicensure policies occurred in the 2010s as states began to expand tiered licensure systems. Tiered licensure systems featured multiple levels of licenses corresponding with performance-based expectations as teachers progressed from novice to veteran practice. A defining feature of a tiered licensure system was that teachers must demonstrate evidence of effective teaching practice to advance to higher levels of licensure (Paliokas, 2013). Spurred partly by the federal Race to the Top initiative in 2009, many states opted to incorporate performance-based measures into licensure renewal and advancement policies (Crowe, 2011). By 2018, at least seven states had instituted policies requiring teachers to achieve satisfactory performance evaluation ratings to renew or advance their license (Tooley & White, 2018).

Licensure renewal requirements also changed in response to recent teacher shortages. Examples of strategies that states used to lessen licensure renewal burdens on teachers with the goal of incentivizing retention included scaling back professional development requirements and lengthening the amount of time between renewal cycles. Another strategy has been to eliminate licensure renewal altogether for veteran and/or accomplished educators. In 2018, New Jersey was the only state that offered a lifetime teaching license with no maintenance requirements (Tooley & White, 2018). In the ensuing years, a handful of states including Alaska, Arkansas, Kansas, North Carolina, North Dakota, and Wisconsin proposed or instituted lifetime teaching licenses, thereby reducing or completely eliminating licensure maintenance requirements for certain groups of teachers (Garcia, 2022; Pasternak, 2019; Porter, 2023).

Statement of Problem

Licensure renewal policies have become a common avenue for states to exert influence over professional learning for teachers. According to a recent national scan of licensure renewal

requirements, 44 states had policies that placed parameters on continuing education activities that counted toward relicensure (Tooley & White, 2018). Recognizing that the development of expert-level teaching skills extended far beyond the scope of initial preparation (combined with the fact that many educators entered the field through routes that did not provide comprehensive initial preparation), many states turned to licensure renewal as a way to exert influence over the quantity, quality, or specificity of in-service professional development requirements.

Colorado's licensure renewal policy offers a relevant example. In 2018, the State Board of Education adopted rules requiring educators holding professional licenses with elementary and secondary subject endorsements to complete 45 clock hours or three semester hours of professional development on culturally and linguistic diverse education at the time of their license renewal (Colorado Department of Education [CDE], 2022). This change occurred around a period of intense public scrutiny of Colorado districts and their policies for educating culturally and linguistic diverse learners (Robles, 2017, 2018). Policies such as these sparked debate about the intentions versus realities of licensure renewal policy. Did increasing the rigor of licensure renewal requirements serve the aspirational purpose of elevating professional learning across the career continuum? Or has licensure renewal been co-opted as a blunt policy instrument to address perceived deficiencies in the skills of practicing teachers?

One of the chief criticisms of licensure renewal was that teachers perceived the process as a compliance exercise rather than a process to advance professional learning and growth (Hirsch, 2015; Procopio, 2021; Sawchuk, 2017). Teachers criticized required renewal activities for having little connection with their job responsibilities or for not providing them with enough flexibility to choose personalized learning opportunities. State policies played a role in this criticism by

failing to articulate a clear and consistent vision for professional learning that included licensure renewal as a supporting component (Tooley & Connally, 2016; Tooley & White, 2018).

A second criticism was the cost of the licensure renewal process. It is difficult to estimate the overall costs of relicensure incurred by states and districts, but examining costs related to professional development, which is often the most substantive component of licensure renewal, could provide a sense of the scale of the investment. For example, it was estimated that the 50 largest school districts in the country spent approximately $8 billion per year on teacher professional development activities, reaching an average of nearly $18,000 per teacher per year (New Teacher Project, 2015). A recent report on relicensure practices in Maryland estimated that state-approved options for continuing professional development ranged in cost from $30 to $249 per credit hour (Procopio, 2021). A cost study conducted with a regional education service agency in the Midwest found the cost of traditional professional development workshops ranged between $138 to $158 per educator per contact hour with job-embedded coaching costing $169 per educator per contact hour (Barrett & Pas, 2020). Another commonly accepted renewal activity, National Board certification, costs $1900 for initial certification and $495 for maintenance of certification, not including registration fees (National Board for Professional Teaching Standards, 2023a).

Not only do states and districts invest substantial amounts of money in providing professional development offerings that could count toward licensure renewal, but many teachers invested their own money to complete relicensure requirements that were not sponsored by their state or district. This might include taking courses at local colleges or universities, which without tuition reimbursement could costs hundreds or possibly thousands of dollars per credit hour. In addition to the renewal activities themselves, most states charge a fee for processing licensure

renewal applications, which depending on the type of license and number of endorsement areas could range into hundreds of dollars.

A final criticism of teacher licensure in general was the lack of conclusive evidence that teacher licensure policies resulted in more qualified teachers (Ballou & Podgursky, 1998; Darling-Hammond et al., 2001; Goldhaber & Brewer, 2001). Evidence linking teacher licensure status with outcomes was mixed and conflicting, especially in regard to whether licensed teachers produced greater student achievement gains than unlicensed teachers (Darling-Hammond et al., 2001; Wayne & Youngs, 2003). One notable limitation was this research was focused exclusively on initial licensure rather than relicensure. Chapter II reviews the limited available research that explored the relationship between state-level licensure structures and student outcomes and also reviewed adjacent research linking teacher-level licensure variables with teacher and student outcomes.

These challenges raised several important questions to guide research on state licensure renewal policies. First, is there compelling evidence to demonstrate that state licensure renewal policies are linked to improvements in teacher and student performance? And based on this evidence, how can states structure licensure renewal policies to deliver on these outcomes?

Purpose of the Study

The purpose of this study was threefold: to describe the requirements related to SWDs in state teacher licensure renewal policies; to explore how states with high-performing SWDs relicensed teachers; and to investigate the relationship between the rigor of relicensure requirements and student achievement. I chose student achievement as the variable of interest to address the argument that the purpose of licensure renewal is to promote continued professional growth and learning (Tooley & White, 2018). If this purpose is fully realized, then rigorous,

growth-oriented licensure renewal activities should be positively associated with effective teachers who are able to influence academic achievement for SWDs. Because general education teachers and special education teachers share responsibility for the education of SWDs in inclusive settings, I investigated licensure renewal requirements for both sets of teachers.

The present study used the state level as the unit of analysis for licensure renewal policy. As discussed in the literature review, the only studies conducted to date on state-level licensure renewal policies have been descriptive state policy scans. Extensive research exists linking teachers' participation in activities that states might require for licensure renewal (e.g., continuing education, National Board certification) with teacher or student outcomes but these individual activities only represented partial components of state licensure renewal policies. Likewise, only a few studies attempted to link state-level licensure policies with teacher and student outcomes, and those studies focused solely on initial licensure. This study addressed a gap in existing research by assessing the relationship between state-level licensure renewal structures and student achievement outcomes.

Given the purpose of this study, I focused only on state policies for routine renewal of a standard or professional teaching license. This study did not focus on policies pertaining to licensure advancement (i.e., progressing from a provisional to an initial license, an initial to a standard license, or a standard to an advanced license). These terms are explained in the Definition of Terms section.

Research Questions

This study was organized around the following research questions:

Q1 What requirements related to SWDs are in state teacher licensure renewal policies?

Q2 How do states with high-performing SWDs relicense teachers?

Q3 Are state licensure renewal requirements related to student achievement?

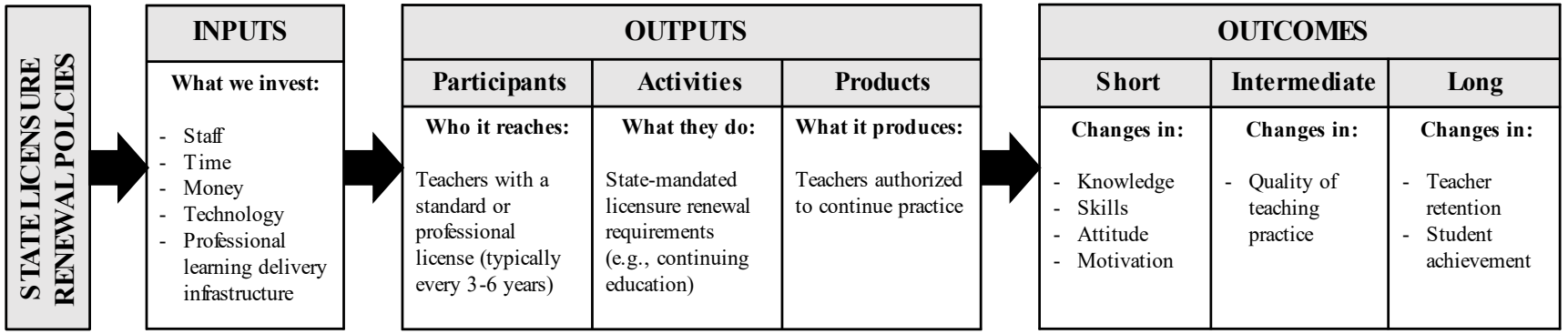
This study followed a two-phase design. Phase I of the study, which consisted of a comprehensive scan of state licensure renewal policies related to SWDs, addressed Q1 and Q2. Phase II of the study, which consisted of a quantitative analysis of the relationship between the rigor of state licensure renewal policies and student achievement outcomes, addressed Q3.

Conceptual Framework

Figure 1.1 presents a conceptual framework showing the relationship between state licensure renewal policies and the variables of interest in this study. Kennedy (1999) noted that "a central problem for policy researchers is how to document a clear path of influence that extends from policy manipulations to student outcomes" (p. 345). For this reason, I structured the conceptual framework in the form of a logic model, which is a visual representation of the theory of action guiding the design, implementation, and evaluation of a program or policy (Coldwell & Maxwell, 2018; Kekahio et al., 2014). Logic models vary in structure but typically articulate the relationship between the inputs (i.e., resources) invested in a program or policy and the resulting outputs and outcomes. This conceptual framework shows the relationship among state licensure renewal policies, the inputs needed to administer those policies, the output produced in the form of relicensed teachers, and the intended short-, intermediate-, and long-term outcomes related to teacher and student performance.

Figure 1.1

Conceptual Framework for Examining Outcomes of State Teacher Licensure Renewal Policies



Inputs

As previously discussed, the administration of state licensure renewal systems requires a significant investment of resources (Procopio, 2021; New Teacher Project, 2015; Tooley & Connally, 2016). Investments made by states included staff labor and time to review licensure applications since many of the decisions that factored into approval of the application were not able to be automated (e.g., determining whether continuing education credits met content requirements). Many states created online licensure systems or portals for educators to use during the licensure application/reapplication process, but the primary function of these systems was to provide a method to organize documentation that must be verified by a state licensure administrator. In addition to the significant monetary investments that states made to administer licensure systems, there was also a significant monetary investment on the part of educators to go through the licensure renewal process. Finally, since completion of continuing education was one of the most common requirements for licensure renewal, districts, regional technical assistance and support networks, institutions of higher education, and alternative teacher preparation providers needed infrastructure to offer state-approved continuing education options.

Outputs

States have the authority to dictate who participates in licensure renewal, how often it must occur, and what requirements must be met. The four most common activities required or accepted by states for licensure renewal are continuing education, National Board certification, years of teaching experience, and satisfactory teacher evaluation scores (Tooley & White, 2018). Even in states with comparatively rigorous continuing education requirements for licensure renewal, teachers still retain a fair amount of latitude to choose topics and delivery methods. The

products of licensure renewal, or what is produced as a result of participation in these activities, are relicensed teachers authorized to continue practice.

Outcomes

As previously discussed, state licensure renewal policies serve dual purposes: to assure that teachers are qualified to continue practice and to promote ongoing professional learning and growth (Tooley & White, 2018). The extent to which licensure renewal has achieved the first purpose is an output that can measured by the proportion of teachers who become successfully relicensed. However, the extent to which licensure renewal has achieved the second purpose—ongoing professional learning and growth—is a results-oriented outcome that can be measured in a variety of ways. Tooley and White (2018) noted that states struggled to articulate a clear vision for how compliance-oriented licensure policies and results-oriented professional development systems merged in the licensure renewal process to promote ongoing learning and growth for teachers. Thus, part of the rationale for performing this study was to determine if state licensure renewal structures were able to bridge the gap between output of relicensed teachers and outcomes related to teacher and student performance.

Short-Term Outcomes

The most immediately measurable outcomes resulting from activities frequently associated with licensure renewal (e.g., continuing education) are changes in teacher learning. Changes in teacher learning can be operationally defined as changes in awareness, knowledge, skills, attitudes, interests, beliefs, motivation, or other cognitive processes. A large body of research, including a growing share of studies with experimental or quasi-experimental designs, investigated whether participation in professional learning activities resulted in changes in teacher learning and associated outcomes of interest (Darling-Hammond et al., 2017; Wayne et

al., 2008). Since all but a handful of states required continuing education for licensure renewal, this research established an important link between licensure renewal activities and short-term outcomes for teacher learning, which is a necessary first step in establishing a link between broader state-level policy for licensure renewal and more distal outcomes.

Intermediate-Term Outcomes

Intermediate outcomes from participation in licensure renewal activities include changes in teacher actions such as changes in quality of teaching practice. It is important to note that teacher quality differs from *teaching* quality. Teacher quality is a concept that encompasses teacher qualifications (e.g., education, licensure status, test scores, experience), teacher characteristics (e.g., age, race, gender, beliefs, attitudes), and teacher practices (i.e., what a teacher does in the classroom; Goe, 2007). Measuring quality of teaching practice on a national scale presents challenges because methods of measuring teaching quality vary widely across states. Although there are some fairly common instruments for measuring quality of teaching practice (e.g., Danielson Framework for Teaching, Marzano Teacher Evaluation Rubric), there are no standardized requirements for teacher observation or evaluation across states. For this reason, this study did not focus on outcomes related to teaching quality.

Long-Term Outcomes

Teacher retention and student achievement are long-term outcomes associated with participation in licensure renewal activities. Similar to the limitations associated with measuring teaching practice, there are no standardized requirements or methods for measuring teacher retention across states. For this reason, the present study did not focus on teaching practice as an outcome of interest (this limitation is discussed in Chapter V). Instead, student achievement, specifically reading and mathematics achievement, was used as the long-term outcome of

interest for this study due to the availability of national data to facilitate comparisons across states.

In her discussion of the difficulties with linking policy initiatives to student outcomes, Kennedy (1999) identified two primary challenges. First, researchers frequently stopped at examining the intermediate outcomes of a policy, assuming the policy's influence extended to student outcomes. Second, researchers were often unable to find measures that adequately captured the complexity of student learning. Kennedy named standardized tests and classroom-level observations as the closest "first-level approximations" of complex student learning, although with the acknowledgment that standardized tests are sometimes criticized for being too reductive a method to measure complex student learning (p. 346). In spite of this criticism, standardized testing data had the benefits of being a readily available, viable way to make comparisons across states (unlike classroom observation data), making it a practical method for measuring the influence of policy.

When considering the influence of licensure renewal policies, student achievement is an admittedly distal outcome. The scope of this study could not establish causality between the rigor of state licensure renewal policies and student outcomes, but it could suggest the presence or absence of a relationship. This information, while only a first step in a line of inquiry into licensure renewal policies, has important implications for how states create policy and invest resources in teacher relicensure.

Definition of Terms

Certification. A process by which professional organizations set knowledge-based standards for entry to the teaching profession. A certificate signifies a teacher is qualified to practice in a specific discipline or specialty area.

Dual Licensure. When a teacher holds licensure in both general education and special education. Teachers might earn both licenses concurrently through a preparation program resulting in dual licensure or might earn one credential before the other (typically teachers following this method earn general education licensure first and then add special education licensure). Might also be called dual certification.

Endorsement. The content or specialty area specified on a license. Might also refer to additional specialty or sub-specialties added to an existing credential.

High-Performing States. In this study, I defined high-performing states via three measures: fourth-grade National Assessment of Educational Progress (NAEP, 2023) reading scores for SWDs, fourth-grade NAEP math scores for SWDs, and the proportion of SWDs served inside general education classes for 80% or more of the school day. States are considered high performing if they rank in the top 10 states for at least two of the measures and no lower than the top 20 states for the third measure.

Licensure. A process by which states set legal standards for entry to the teaching profession. A license gives a teacher the legal authority to practice.

Licensure Renewal. The process by which a teacher fulfills state-determined requirements to renew a standard or professional license. Licensure renewal typically occurs on three to six-year cycles.

Scan. For the purposes of this study, a scan is an electronic search of state education agency websites to collect information on state teacher licensure renewal policies across 50 states and the District of Columbia.

Types of Licenses. The following types of teaching licenses are commonly granted by states. Please note that states might not offer all types of licenses or might use different terminology.

- Initial license*:* A license granted to an entry-level teacher signifying they are fully credentialed. Initial licenses are typically one-time, nonrenewable licenses valid for one to three years. States might require initial license holders to complete additional requirements (e.g., induction) before advancing to the next level of license.
- Temporary license*:* A license granted to an entry-level teacher signifying they must complete additional requirements to become fully credentialed, which might include completion of an approved educator preparation route. Temporary licenses are nonrenewable licenses that authorize the holder to serve as a teacher of record for a short period of time, typically less than three years. Might also be called an emergency or provisional license.
- Standard license*:* A license granted a teacher after they have completed requirements associated with an initial or provisional licensure period. Standards licenses are typically valid for three to five years and must be periodically renewed. Might also be called a professional license.
- Advanced license*:* A license granted to an experienced teacher after they have completed requirements associated with advanced professional practice. Advanced licenses might authorize the holder to perform teacher leadership duties (e.g., mentoring). Some types of advanced license must be periodically renewed but others might not (e.g., lifetime licenses). Might also be called a master license.

CHAPTER II

LITERATURE REVIEW

The purpose of this study was threefold: to describe the requirements related to SWDs in state teacher licensure renewal policies; to explore how states with high-performing SWDs relicensed teachers; and to investigate the relationship between the rigor of relicensure requirements and student achievement. Thus, the primary purpose of this literature review was to synthesize research on state teacher licensure renewal policies and requirements. Because of the relative lack of research on licensure renewal policies, the secondary purpose of this literature review was to identify relevant research on initial teacher licensure policies—particularly research investigating the relationship between initial licensure and key outcomes for teachers and students—that could be used to as a model to conceptualize, design, and execute future studies on teacher licensure renewal. Reviewed studies focused on how licensure policies influenced how special education and general education teachers are prepared to support SWDs.

Kennedy (1995) classified research pertaining to teacher education—and by extension initial teacher licensure—into five distinct categories or genres: (a) identification of factors that contribute to student learning, (b) comparisons of licensed versus unlicensed teachers, (c) surveys of program completers, (d), experimental research, and (e) case studies documenting change over time. She argued that these five genres differed in the aspects of teacher education investigated, the outcomes examined, and the credibility of the arguments made about the value of teacher education. With several noted exceptions, the studies identified in this literature review fell into the first genre of studies that investigated factors influencing student outcomes.

Kennedy observed that this genre of research typically examined the relationship between predictive variables (e.g., teacher qualifications such as licensure) and outcome variables (e.g., reading or mathematics achievement). The focus on student achievement as the primary outcome of interest made this genre of research particularly relevant and useful in policy contexts (Kennedy, 1995).

The literature review is organized into three sections. The first section reviews research on licensure renewal, which consists primarily of state policy surveys or scans of teacher licensure renewal requirements but also includes a brief review of literature on activities commonly required or accepted by states during the licensure renewal process. The second section summarizes research linking teacher-level licensure variables with key outcomes including teacher retention, teaching practice, and student achievement. Although this body of research focused on initial licensure instead of licensure renewal, it provided a theoretical basis for understanding how licensure connected to teacher and student outcomes. The third section reviews the very limited research available on the relationship between state-level licensure structures and student achievement, which provides models for how to structure future studies in which state-level policy is the unit of interest. The chapter concludes with a discussion of major themes that surfaced from the literature review and their implications on the methodology of the current study.

Research on Licensure Renewal

One of the fundamental purposes of the licensure renewal process is to ensure that teachers continually update knowledge and skills needed to maintain professional competency (Tooley & White, 2018). However, limited research demonstrated that state licensure renewal policies achieved this goal. To date, the research conducted on state licensure renewal policies

has consisted solely of descriptive research conducted via state policy scans or surveys. These studies are summarized in the next section with a distinction made between scans of general state relicensure policies and scans of licensure policies pertaining to SWDs.

State Licensure Renewal Policy Scans

General Relicensure Policies

Although state-by-state scans of initial teacher licensure policies exist dating back decades, national scans focused exclusively on teacher relicensure policies are less common. Rowls and Hanes (1982) conducted one of the first nationwide policy surveys focused exclusively on teacher relicensure. They collected information about in-service teacher training requirements required for relicensure and available avenues for teachers to earn relicensure via a written questionnaire mailed to 50 state education agencies in the spring of 1982. They were particularly interested in documenting the shift from state control of licensure renewal policies to district administration of professional development programs and offerings, effectively shifting the role of continuing education provider from universities and colleges of education to local districts and their associated networks of professional development providers.

Of the 36 states that responded to the survey, nine states allowed university course credit only toward relicensure requirements, 12 states allowed district-administered activities as the sole method of meeting the requirements, and six states allowed a combination of university and district-administered activities. Nine states had no relicensure requirements at all. Although this study was hampered by a low response rate from states (72%), it was notable that two-thirds of the responding states that had teacher relicensure requirements allowed those activities to be mediated through districts (n = 18; Rowls & Hanes, 1982).

More recently, Tooley and White (2018) conducted a comprehensive scan of licensure renewal policies in 50 states and the District of Columbia. They conducted the scan by reviewing

publicly available licensure policy documents (e.g., relicensure guidance on state education agency websites, state administrative code or regulations related to licensure) and verifying the information with state education agency personnel.

Tooley and White's (2018) scan was remarkable for the depth of quantitative and qualitative information gathered on licensure renewal requirements. For example, they collected information on the type of activities required or accepted by states during the renewal process, finding that 44 states required some form of continuing education, 15 accepted National Board certification, nine required minimum amounts of classroom teaching experience, seven required satisfactory summative evaluation results, and nine had other types of requirements.

Because continuing education was by far the most prevalent relicensure requirement, Tooley and White (2018) further unpacked the types of activities allowed by states with the intent of understanding the differences in quantity and quality of professional development activities required across states. Of the 44 states requiring continuing education, 43 accepted higher education coursework, 42 accepted standalone types of professional development, 23 specified job-embedded professional development, and 22 allowed other types of activities to count toward relicensure (e.g., professional service in the education field, publication, travel, microcredentials). The authors found that standalone professional development activities tended to be time-limited, district- or school-run activities such as workshops, conferences, seminars, or online modules. These types of activities occurred separately from teachers' job responsibilities and rarely included application components. In contrast, the authors found that job-embedded professional development activities tended to be longer-term, sustained learning experiences such as participation in professional learning communities, mentoring, and instructional coaching that were integrated with teachers' job responsibilities (Tooley & White, 2018).

In addition to extensive reporting on state-by-state licensure renewal requirements, Tooley and White (2018) also included extensive recommendations for reforming state licensure renewal policies. A major theme from their recommendations was for states to institute relicensure activities requiring teachers to demonstrate evidence of professional growth. Examples of promising relicensure practices highlighted in the report included teachers creating and implementing individualized professional growth plans and incorporating performance-based assessments of teachers' learning into renewal requirements.

Relicensure Policies Pertaining to Students with Disabilities

Patton and Braithwaite (1980) conducted one of the first national surveys of teacher licensure policy focused on special education-related requirements in the licensure and relicensure of general education teachers. Conducted less than three years after the passage of the Education for All Handicapped Children Act of 1975 (PL 94-142), the purpose of the survey was to determine if and how licensure requirements for general education teachers had changed as a result of the shift to mainstreaming SWDs into regular education classrooms. To collect this information, a questionnaire was mailed to the licensure divisions of 50 state education agencies and the District of Columbia in April 1978, achieving responses from 48 states (94% response rate).

This survey was notable because it provided an early baseline of the licensure requirements for general education teachers in response to the PL 94-142 mandate that general education teachers must receive comprehensive preservice and in-service professional development supports to develop competency in providing individualized instruction to SWDs. Of the 48 states that completed the survey, only 10 states indicated they required special education courses for the initial licensure of general education teachers with an additional four

states reporting policies in development. For this group of states, coursework was the primary lever for exposing general education teachers to special education content. Virginia was an exception for requiring education teachers to obtain "experiences and/or coursework" in working with SWDs (Patton & Braithwaite, 1980, p. 44). For relicensure, only two states required general education teachers to take special education coursework with an additional two states reporting policies in development. In addition to questions about the amount and nature of coursework required for licensure, the survey also asked states to rank their reasons for requiring changes to licensure and relicensure for general education teachers. The most highly ranked reason was a "genuinely felt need on the part of the state department" (44%) rather than the need to comply with the provisions of PL 94-142 (Patton & Braithwaite, 1980, p. 45).

A decade later, Patton and Braithwaite (1990) replicated the methodology of their original survey of special education licensure and relicensure requirements for general education teachers, achieving a 100% response rate from 50 states, the District of Columbia, and Puerto Rico. The survey revealed major changes in the licensure landscape over the previous decade with 37 states reporting that general education teachers were required to take special education coursework during initial licensure (with policy pending in one state) and nine states requiring it during the relicensure process (with policies pending in three states). In addition to the substantial increase in the number of states requiring special education licensure and relicensure coursework for general education teachers, the survey collected more descriptive detail about the nature and extent of these requirements. The authors found that although some states continued to require standalone courses in special education, more states had shifted toward special education content integrated throughout multiple courses within a program (Patton & Braithwaite, 1990).

Licensure Renewal Activities

No research to date has explored the relationship between state-level licensure renewal policies and teacher and student outcomes. However, there was research exploring the relationship between *individual activities* that states frequently required or accepted as part of the licensure renewal process and teacher and student outcomes. While these activities did not capture the totality of a state's licensure policy, these activities represented individual "policy parameters" or aspects of relicensure policy that could be quantitatively or qualitatively manipulated by policymakers (Kennedy, 1995, p. 124).

As previously noted, the four most common activities that states required or accepted during the licensure renewal process were (a) completing continuing education, (b) attaining a minimum amount of teaching experience, (c) earning National Board certification, and (d) achieving satisfactory teacher evaluation ratings (Tooley & White, 2018). This section briefly describes these four activities and the supporting research with special attention to research documenting how these activities are linked with student achievement. Because of the extensive amount of research available on these activities, I relied on meta-analyses when available to summarize key themes from research. Meta-analysis is a useful tool to help education leaders make sense of research to inform policy development and inform decisions about individual policy parameters within broader relicensure policies (Blank & de las Alas, 2009).

Continuing Education

In their national scan, Tooley and White (2018) identified continuing education as the most common activity required of teachers during the relicensure process with 44 states requiring some form of professional learning to renew a teaching license. The ESSA (2015) defined effective professional learning as "sustained, intensive, job-embedded, collaborative,

classroom-focused, and data-driven" (p. 296). Although ESSA affirmed the importance of job-embedded professional learning, standalone types of professional development (e.g., workshops, seminars) were by far the most common types of professional development experienced by teachers with more intensive, job-embedded types of professional development experienced less often (Darling-Hammond et al., 2009). Of the 44 states that required continuing education for teacher relicensure, only about half specified that continuing education must include job-embedded professional learning (Tooley & White, 2018).

Meta-Analyses of Features of Effective Professional Development. Desimone (2009) suggested that the adoption of a core conceptual framework could help researchers more effectively study the impact of professional development on teacher and student outcomes. Desimone's framework consisted of five core features of professional development: (a) content focus, (b) active learning, (c) coherence, (d) duration, and (e) collective participation (p. 185). Professional development grounded in these core features leads to changes in teachers' knowledge, skills, attitudes, and beliefs, resulting in improvements to instruction and ultimately improvements in student learning.

Results from meta-analyses repeatedly demonstrated that the professional development features positively associated with student outcomes aligned with and expanded upon Desimone's framework. For example, Blank and de las Alas (2009) conducted a meta-analysis of professional development studies for K-12 mathematics and science teachers with the stated goal of "providing state and local education leaders with scientifically-based evidence regarding the effects of teacher professional development on improving student learning" (p. i). Their meta-analysis identified 16 studies in which teacher professional learning had significant positive effects on student achievement. From these studies, they identified six elements of high-quality

professional learning with strong similarities to Desimone's framework: (a) a focus on increasing teachers' content knowledge; (b) more time for professional learning (i.e., contact hours); (c) longer total duration of professional learning; (d) use of multiple activities and active learning methods; (e) incorporation of individual teacher learning goals; and (f) collective participation by teachers (Blank, 2013; Blank & de las Alas, 2009).

Other meta-analyses confirmed similar findings related to the features of effective professional development. For example, Darling-Hammond et al. (2017) conducted a meta-analysis of 35 experimental and quasi-experimental studies on teacher professional learning with the goal of describing the characteristics of professional development positively linked to student outcomes. Their analysis identified seven characteristics of effective professional development, three of which extended the definition to speak to the actions of coaches and those leading professional learning rather than solely the actions of those participating in professional learning: (a) use of models and modeling of effective practice, (b) provision of coaching and expert support, and (c) opportunities for feedback and reflection (Darling-Hammond et al., 2017).

Further exploring the actions of professional development leaders, Dunst et al. (2015) performed a meta-synthesis of 15 research reviews representing over 550 professional development studies and found that effective professional development leaders utilized techniques such as stating the purpose for learning, demonstrations, authentic learning experiences, coaching and mentoring, reflection, and follow-up supports. Other meta-analyses attempted to understand what differentiated effective professional development from less effective professional development as quantified by contributions to student achievement (Sims et al., 2021, 2022), determining that effective professional development followed a framework aimed at developing teachers' insights, goals, instructional techniques, and overall practice.

Meta-Analyses of Special Education Professional Development. In addition to the features of effective professional development, it was also important to understand how the content of professional development impacted teacher and student outcomes. Once again, meta-analyses were a useful tool for deriving findings across large amounts of research.

Meta-analyses of professional development studies on topics related to SWDs conducted within the last five years consistently demonstrated that professional learning had positive effects on teacher outcomes, specifically many of the short-term outcomes related to teacher learning included in the conceptual framework in Chapter 1. For example, Donath et al. (2023) conducted a meta-analysis of 342 studies on professional development for inclusive education practices. This study was notable for its large sample size with researchers finding large positive effects of professional learning on teachers' knowledge of inclusive education practices, moderate effects on teachers' skills, and small-to-moderate effects on student behavior. In another meta-analysis of 27 professional development studies on differentiation, Kahmann et al. (2022) found that professional learning had moderate positive effects on K-12 teachers' attitudes, knowledge, and practices for differentiating instruction for students in general and special education. Further investigating the effects of teacher training, Brock and Carter (2017) conducted a meta-analysis of 12 group-design studies and found that training on the implementation of interventions for SWDs had large positive effects on the fidelity with which the interventions were delivered. Finally, through a meta-analysis of 26 studies, Gesel et al. (2021) found that professional development on data-based decision making and curriculum-based measurement had moderate effects on teachers' knowledge, self-efficacy, and skills for working with SWDs and other students with severe and persistent learning challenges.

A notable strength of these meta-analyses was they included studies of professional development for general education teachers as well as special education teachers on topics related to educating SWDs (e.g., inclusive practices, differentiation, data-based decision making), reinforcing that all educators should have competency in these skills. However, a notable limitation of these meta-analyses was two of the studies did not investigate the effects of professional learning on student outcomes. Of the two meta-analyses that investigated student outcomes, Kahmann et al. (2022) found professional learning had no statistically significant effect on student learning and Donath et al. (2023) found smaller effects on student behavior compared to the effects on teacher outcomes. Results from these meta-analyses suggested further research was needed to investigate the relationship between special education professional development and student outcomes.

Classroom Experience

Tooley and White (2018) found that nine states required teachers to accrue a minimum amount of classroom teaching experience to renew their license. For example, states might require teachers to demonstrate they had fulfilled a certain number of days of contracted service while holding their current license (presumably, this would prevent someone who is no longer in the classroom from renewing their license). Although this requirement did not necessarily equate to teachers having to demonstrate a minimum number of years of teaching experience to renew their license, there was some evidence to suggest a relationship between teachers' years of experience and their effectiveness. For example, researchers consistently found that teachers with less than three years of experience tended to be less effective than their more experienced counterparts (Boyd et al., 2008; Clotfelter et al., 2007, 2010; Hanushek et al., 2005; Podolsky et al., 2019). Furthermore, teachers tended to make the greatest gains in effectiveness over the first

several years of their career, with gains leveling off to more modest levels after five years (Harris & Sass, 2011). For special education teachers, Feng and Sass (2013) noted a relationship between teachers' years of experience and SWDs' achievement in math, with students assigned to experienced teachers performing better than first-year teachers regardless of their licensure status. However, the researchers also found the effectiveness gains associated with experience were more modest for special education teachers than they were for general education teachers (Feng & Sass, 2013).

National Board Certification

National Board certification is a designation of distinguished professional practice available to teachers through the National Board for Professional Teaching Standards. To become a National Board certified teacher (NBCT), teachers go through a rigorous, performance-based process to demonstrate their content knowledge, instructional practice, and ability to contribute to student learning. The process, which typically takes several years, requires teachers to take a computer-based assessment and create an extensive portfolio documenting multiple aspects of teaching. Once teachers acquire initial certification, they must go through a certification maintenance process every five years to demonstrate their commitment to continued professional growth (National Board for Professional Teaching Standards, 2023b). In 2018, 15 states allowed teachers to renew their licenses solely on the basis of earning National Board certification, while an additional 17 states allowed teachers to use National Board certification activities to count toward their continuing education requirements (Tooley & White, 2018).

A recent review of research conducted by the What Works Clearinghouse (WWC, 2018) found that five studies about National Board certification met group design standards with reservations, indicating these studies were either (a) strong quasi-experimental designs; or (b)

randomized controlled trials that experienced minor randomization, attrition, or disruption issues. All five studies used quasi-experimental designs to compare the performance of NBCTs with non-NCBTs across several key domains. Across the three studies that used mathematics achievement as an outcome, NBCTs had mixed effects on achievement; and across the four studies that used English language arts or reading achievement as an outcome, NBCTs had no discernable effects on achievement (WWC, 2018).

Only one study in the WWC review by Cowan and Goldhaber (2016) examined how NBCTs impacted achievement for SWDs. Using extant data from Washington state to compare the academic achievement of more than 1.3 million elementary and middle school students by the National Board certification status of their teachers between 2005 and 2013, the researchers found that SWDs assigned to NBCTs outperformed SWDs assigned to non-NCBTs by 0.02 standard deviations in reading and 0.03 standard deviations in math. At the elementary level, SWDs were the only student subgroup for which NCBTs were consistently more effective than non-NCBTs (Cowan & Goldhaber, 2016).

Summative Evaluation Results

As of 2018, seven states considered teachers' summative performance evaluation ratings in the licensure renewal process, with three states (Louisiana, New Mexico, Rhode Island) employing systems in which licensure renewal was based solely on achieving satisfactory summative evaluation ratings (Tooley & White, 2018). Other states exempted teachers from continuing education requirements if they achieved satisfactory evaluation ratings.

Teacher summative evaluation ratings usually include a professional practice component, which is typically assessed through classroom observations. In general education, there was evidence that the quality of teachers' observed instructional practice was associated with student

achievement in math (Blazar, 2015) and reading (Carlisle et al., 2011; Connor et al., 2014; McLean et al., 2016). Evidence supporting a link between the quality of observed instructional practice and student achievement for special education teachers was more limited. Researchers in one study found that students assigned to novice special education teachers who received higher ratings on the Reading in Special Education observation instrument realized greater reading growth than students assigned to teachers with lower ratings (Brownell et al., 2009). Notably, this study featured a researcher-developed classroom observation instrument specifically validated for use with elementary special education reading teachers. Some researchers expressed concern that commonly-used observation rubrics (e.g., Danielson's Framework for Teaching) did not adequately capture the full range of teaching practices required of special education teachers and called for increased efforts to validate these instruments for use with special education teachers (Jones & Brownell, 2014). However, classroom observation instruments remain an important method for providing special education teachers with feedback on instructional practice.

Other Requirements

As of 2018, nine states had requirements for teacher licensure renewal that did not correspond with the previous four categories (Tooley & White, 2018). Examples of other types of requirements to renew a licensure included teacher age (e.g., West Virginia teachers over 60 years of age did not have to complete continuing education to renew their license) or needing to secure a recommendation from the district superintendent.

Research Linking Teacher Licensure Status with Outcomes

The second section of this literature review synthesizes research investigating the relationship between initial teacher licensure and three outcomes: teacher retention, teaching

practice, and student achievement. The theorized relationship between licensure renewal policy and these outcomes was presented in the conceptual framework in Chapter I. Of these three outcomes, student achievement was the primary variable of interest in the present study.

Given the relative lack of available research on licensure renewal policies, this section focuses on research on the *initial licensure* of teachers (i.e., whether or not teachers were fully licensed or the area of their initial licensure). To limit the scope of this review, I placed the following three parameters on the review of literature. First, I excluded research on specific requirements that would only be applicable during the initial licensure process (e.g., licensure exams, comparing alternative and traditional licensure) as these requirements were not relevant to the licensure renewal process. Second, I focused on studies on special education teachers and/or general education teachers supporting SWDs. Finally, I limited the review to studies that used teacher licensure status and/or licensure area as an explanatory variable rather than other variables pertaining to teacher preparation. Although licensure and teacher preparation are closely linked (see Chapter I for further discussion) and both are frequently used as proxies for teacher quality, licensure status could mask meaningful variability in teacher preparation experiences prior to entering the classroom (Henry et al., 2014). For example, after meeting the requirements associated with provisional licensure, a teacher prepared through an alternative preparation route is considered to be fully licensed. Although this teacher might have received very limited preparation prior to entering the classroom, they had attained the same licensure status as a teacher who received extensive preparation through a traditional university-based program. However, in studies using licensure status as a proxy for teacher quality, these two teachers were considered the same. There was precedent in systematic literature reviews of distinguishing research that used licensure/certification status from research that used initial

preparation characteristics (e.g., traditional versus alternative preparation route) as an indicator of teacher qualifications (Billingsley & Bettini, 2019; Cochran-Smith et al., 2011).

Teacher Retention

Previous systematic reviews of literature found evidence that licensure status was related to increased special education teacher retention (Billingsley, 2004). In a more recent comprehensive review of literature on special education teacher retention and attrition, Billingsley and Bettini (2019) identified two studies published between 2002 and 2017 that compared retention rates for licensed versus unlicensed special education teachers. The purpose of the first study was to identify common school-based risk factors among teachers likely to leave teaching within two years versus those likely to remain in teaching (Albrecht et al., 2009). A researcher-designed pilot survey was administered to 776 teachers and related service providers supporting students with emotional and behavioral disabilities in the United States and Canada. The authors found licensure status had no bearing on whether special education teachers planned to stay in or leave teaching. One notable limitation of this study was the convenience sampling method, which resulted in uneven representation of respondents across geographic regions, with approximately 98% of responses coming from teachers in the United States. However, researchers reported that the demographics of the respondents (e.g., years of experience, qualifications) were generally representative of teacher demographics in the United States. Another notable limitation was this study relied on teachers self-reporting their intent to stay in or leave teaching rather than actual retention or attrition data.

The second study also sought to identify factors associated with teachers' self-reported intent to leave teaching (Conley & You, 2017). Conley and You (2017) used data from the 2007–2008 administration of the Schools and Staffing Survey (SASS), which is a large-scale data

collection effort from a nationally representative sample of districts, schools, and educators. The sample for the study consisted of 2,060 secondary special educators identified in the SASS dataset. Both the outcome variable (intent to leave) and mediating variables (job satisfaction and work/career commitment) were measured using SASS items. The researchers found that certified secondary special education teachers were less likely to report an intent to leave teaching than their uncertified counterparts when controlling for school supports. In addition to a larger sample size and representative sampling methods, this study was also able to control for more demographic and workplace factors using national SASS data.

Since 2017, three additional studies were published on the relationship between special education teacher licensure and teacher retention. Instead of comparing licensed versus unlicensed teachers (e.g., Albrecht et al., 2009; Conley & You, 2017), these studies compared fully-licensed teachers by the type of certification held (e.g., special education certification, general education certification, or dual certification). For example, Gilmour and Wehby (2020) investigated the extent to which teaching classes with SWDs were linked with teacher turnover using certification type as a moderator variable. Using a state administrative dataset from North Carolina, researchers identified a sample of approximately 116,000 K-12 general and special education teachers who instructed SWDs between 2009 and 2013. Approximately 6.19% of sampled teachers were special education-certified, 4.89% were dually-certified, and the remainder were general education-certified. Using a multilevel logistic regression model, researchers found the percentage of SWDs that a teacher instructed was linked with increased likelihood of turnover when controlling for all other variables. However, for special education-certified teachers, there was no association between the percentage of SWDs served in their classes and their likelihood of turnover. This study was limited as no information was available

about the teaching placements of teachers in the sample (e.g., if dually-certified teachers were in general education or special education placements).

The second study investigated the relationship between teacher preparation characteristics and workforce entry and retention for special education teachers in Washington state (Theobald, Goldhaber, Naito et al., 2021). Retention was measured by the number of teachers who stayed in the public school teaching workforce in Washington after their first year and the number of teachers who stayed in special education positions after their first year. Examining data from 1,351 special education teachers who graduated from in-state teacher preparation programs between 2009 and 2016, Theobald, Goldhaber, Naito et al. (2021) found that candidates who held dual certification were less likely to enter and stay in special education teaching positions than candidates who held only special education certification. An acknowledged limitation of this study was the way it measured teacher retention. Due to the nature of the dataset, there was no way to distinguish between teachers who left the profession versus teachers who moved out of Washington's public school teaching workforce (e.g., moved to a private school or to teach in another state).

In a third study investigating the relationship between the percentage of SWDs in general education teachers' classes and teacher turnover, Gilmour et al. (2022) used an administrative dataset from Tennessee to identify a sample of approximately 68,000 K-12 general education teachers who instructed SWDs between 2012 and 2016. Approximately 3.62% of teachers in the sample held dual certification. Researchers found the percentage of SWDs in teachers' classes was associated with an increased likelihood of moving within or between districts but a decreased likelihood of leaving teaching in the state. Holding dual certification moderated teachers' probability of leaving teaching such that there was no relationship between the

percentage of SWDs taught and their likelihood of leaving. However, dually-certified teachers were significantly more likely to have moved within and between districts than their non-dually-certified peers, mirroring the findings from Theobald Goldhaber, Naito (2021) that holding dual certification was associated with higher turnover in special education positions. Results from Gilmour et al. (2022) suggested that dually-certified teachers in Tennessee took advantage of career mobility opportunities but did not necessarily base their decisions on teaching SWDs.

Because of the difficulties with measuring teacher retention across states (discussed in the limitations section of Chapter V), the present study did not focus on teacher retention as an outcome of interest.

Teaching Practice

Compared with research focused on outcome variables for teacher retention or student achievement, less research was available on the association between teacher licensure and quality of teaching practice in special education. As discussed in the conceptual framework in Chapter I, it is important to differentiate between the concepts of teacher quality and *teaching* quality. Teacher quality is informed by inputs such as teacher characteristics and qualifications as well as the practices the teacher employs during teaching (Goe, 2007).

Teaching practice was the primary outcome of interest for studies falling into Kennedy's (1995) second genre of teacher education research that uses comparative studies of licensed and unlicensed teachers to examine differences in teacher effectiveness. Most studies in this genre compared traditionally-prepared teachers with alternatively-prepared teachers, usually equating licensure status with the type of preparation pathway (i.e., fully licensed teachers prepared via traditional routes versus not fully licensed teachers prepared via alternative routes). This research, conducted primarily in general education, showed that alternatively licensed teachers

were generally as effective as their traditionally licensed counterparts (Hawk & Schmidt, 1989; Miller et al., 1998; Sandlin et al., 1992; Tournaki et al., 2009).

Several studies focused more closely on examining the *content area* of teachers' licensure and its relationship to teaching practice. For example, in general education, Hawk et al. (1985) compared the quality of teaching practice for licensed versus unlicensed teachers as part of a larger investigation into the importance of teacher licensure. The study, conducted with 36 middle and high school math teachers, examined the extent to which licensed and unlicensed teachers varied in their subject matter knowledge, contributions to student achievement, and teaching skill. Teaching skill was measured via classroom observations using the Carolina Teacher Performance Assessment System. The authors found the math-certified teachers demonstrated greater use of effective teaching practices during classroom observations than their non-certified counterparts.

In special education, Nougaret et al. (2005) conducted the first comparative study of quality of teaching practice for licensed versus unlicensed special education teachers, noting in their literature review that "to-date no direct comparisons of the teaching effectiveness of special education teachers with and without traditional licensure have been identified" (p. 219). They used Danielson's Framework for Teaching to assess observed classroom teaching for 40 special education teachers representing a range of school levels and types. The authors found that licensed special education teachers performed better than unlicensed special education teachers to a statistically significant level across domains for planning and preparation, classroom environment, instruction, and professional responsibilities. Although previous studies used observation measures to compare the effectiveness of special education teachers prepared via different pathways (e.g., university-based, district-based, and hybrid; see Sindelar et al., 2004),

this was possibly the only study that has been conducted to date on the relationship between special education licensure status and quality of teaching practice, as more recent literature reviews have not identified additional research in this area (Gilmour, 2020; Jones & Brownell, 2014).

As noted in the discussion of state licensure renewal requirements pertaining to summative evaluation results, some researchers had concerns with using observation instruments that were not specifically designed and validated for use with special education teachers (Jones & Brownell, 2014). This might partially account for the lack of research on the association between teacher licensure and quality of teaching practice for special educators. Because of the lack of research and the difficulties with measuring teaching practice across states, the present study did not focus on teaching practice as an outcome of interest.

Student Achievement

Research on the link between initial licensure status and student achievement was mixed and inconclusive. In general education, numerous studies found that licensed teachers consistently produced greater student achievement gains than unlicensed teachers (Boyd et al., 2008; Clotfelter et al., 2010; Darling-Hammond et al., 2005; Wenglinsky, 2002). However, other studies found the effects of licensure status on student achievement were small or nonexistent (Goldhaber & Brewer, 2000; Kane et al., 2008; Walsh, 2001).

Systematic reviews of teacher licensure research also varied in their conclusions as to whether there was a preponderance of evidence supporting that teacher licensure was positively associated with student achievement. For example, a seminal study by Goldhaber and Brewer (2000) using a nationally representative longitudinal dataset found that licensed teachers did not produce stronger student achievement gains than unlicensed teachers. However, in the area of

mathematics, they found that teachers holding subject area certification had significant positive effects on test scores compared to teachers who did not hold subject area certification. Taking exception with the methodology used to arrive at the first finding and elevating the importance of the second finding, some systematic reviews of literature used the Goldhaber and Brewer (2000) study to argue that teacher licensure did matter for student achievement (Darling-Hammond et al., 2001; Darling-Hammond & Youngs, 2002). However, other systematic reviews more conservatively concluded that licensure status did not generally appear to be related to student achievement except in the limited circumstances around subject specific certification noted in the Goldhaber and Brewer study (Wayne & Youngs, 2003).

Similar challenges existed in interpreting research from special education. Six studies, all conducted within the last decade, empirically examined whether special education licensure was linked to academic outcomes for SWDs. A smaller subset of these studies investigated whether students in different disability categories realized different achievement gains based on their teachers' licensure area. Once again, evidence from these studies was mixed and did not conclusively support the existence of a positive relationship between special education licensure and student achievement.

Feng and Sass (2013) conducted the first study exploring the relationship between special education certification and student achievement. Using teacher and student data from the Florida Education Data Warehouse, researchers compared math and reading achievement for SWDs whose teacher was certified in special education with SWDs whose teacher was not certified in in special education. Using a value-added model to estimate the impacts of teacher education and training on student achievement, they found the SWDs assigned to special education-certified teachers had greater achievement gains in both reading and math than their peers assigned to

non-special education-certified teachers. They further noted that the effects of the academic gains were “roughly equivalent to the difference in productivity between a rookie teacher and one with 1–2 years of experience” (Feng & Sass, 2013, p. 129). This study was notable for using a statewide longitudinal database that allowed researchers to reliably link SWDs’ test scores with their teachers.

Theobald, Goldhaber, Gratz et al. (2021) conducted a similar study to assess the relationship between teacher qualifications including licensure status and student outcomes in Washington state. The study focused on 10th-grade English language arts (ELA) regular education teachers and 10th-grade students (with and without disabilities) receiving instruction from those teachers. Like Feng and Sass (2013), this study used a statewide longitudinal data set and estimated teachers’ contributions to student achievement via a value-added model. However, this study expanded considerably beyond student achievement as measured by 10th-grade reading test scores to include five other student outcomes: unexcused absences, on-time graduation, enrollment in a two-year college, enrollment in a four-year college, and postsecondary employment. In contrast to the findings from the Feng and Sass study, Theobald, Goldhaber, Gratz et al. (2021) did not find evidence that SWDs, who were primarily students with learning disabilities, benefitted from assignment to an ELA teacher holding special education endorsement. However, the study did find that teachers’ value-added scores were positively associated with two-year college enrollment and postsecondary employment for SWDs.

Three recent studies examined the relationship between teacher licensure area and the academic achievement of students by disability category. Utilizing data from the national Special Education Elementary Longitudinal Study, Gage et al. (2017) investigated whether teachers’

licensure type was associated with growth in academic achievement for students with emotional and behavioral disabilities. The dataset included approximately 40,000 students with emotional and behavioral disabilities ranging in age from 7 to 17. Researchers compared teachers of students with emotional and behavioral disabilities holding regular, standard, or advanced licensure and those holding other types of licensure (e.g., emergency, probationary, other). They found that teachers' licensure status had no effect on the academic achievement of students with emotional and behavioral disabilities as measured by reading and mathematics subtests on the Woodcock-Johnson III Tests of Achievement.

The second study examined how the teachers' certification area impacted student achievement for elementary and middle school students with learning disabilities and emotional and behavioral disabilities (Gilmour, 2020). Utilizing a statewide administrative dataset from North Carolina, Gilmour (2020) analyzed data for fourth through eighth-grade public school students with learning disabilities or emotional and behavioral disabilities from 2010 through 2013. This study significantly expanded the scope of previous studies by comparing special education-certified and dually-certified teachers versus general education-certified teachers. Gilmour found teacher certification area was not related to achievement as measured by state ELA and math assessments for most groups of students. In contrast with findings from Feng and Sass (2013), students with learning disabilities did not score better on state assessments when taught by a special education-certified teacher. However, students with learning disabilities did score better on ELA assessments when taught by a dually-certified teacher. Furthermore, students with emotional and behavioral disabilities scored worse on state math assessments when they were taught by teachers who only held special education certification.

A third study expanded this line of inquiry to investigate how teachers' certification areas impacted students with autism spectrum disorders (Goldman & Gilmour, 2021). Using the same North Carolina dataset and similar methodology from the Gilmour (2020) study, this study found the teachers' certification area did not impact student performance on state ELA and math assessments. This study added a research question for whether the association between teacher certification area and student achievement varied by whether students took the regular, modified, or alternate state assessment. Once again, in contrast with the findings from Feng and Sass (2013), students who took the modified assessment scored lower when taught by special education-certified teachers.

The most recent study identified for this literature review used data from the Early Childhood Longitudinal Study to assess the relationship between teacher licensure type and reading and math achievement for SWDs (Kirksey & Lloydhauser, 2022). This study specifically used the nationally representative Early Childhood Longitudinal Study–Kindergarten Class of 2010–2011 dataset to identify a sample of approximately 2,300 kindergarteners with individualized education programs (IEPs) who were primarily served in the general education setting. Data on reading, math, and other outcomes were collected from these students during kindergarten, first grade, and second grade. Using the same procedures to code teacher licensure areas as Gilmour (2020), this study found that holding dual licensure was associated with academic achievement gains in math but not reading when controlling school and child-level variables.

Several themes emerged across these six special education studies. First, there was mixed evidence supporting a relationship between teacher licensure and student achievement. Two of the studies found some evidence of a positive association between licensure and student

achievement (Feng & Sass, 2013; Kirksey & Lloydhauser, 2022) and the rest did not. However, Feng and Sass (2013) found that special education-certified teachers positively impacted SWDs' achievement while Kirksey and Lloydhauser (2022) found that dually-certified teachers positively impacted SWDs' achievement. This distinction between licensure areas was especially important for understanding the implications of this research. Gage et al. (2017) was the only study that compared teachers of SWDs by their licensure status (i.e., fully licensed teachers versus not fully licensed teachers). The remaining five studies compared teachers by their licensure area (i.e., special education-certified versus non-special education-certified, or special education-certified/dually-certified versus general education-certified).

Another notable theme was that two of the studies used nationally representative longitudinal datasets (Gage et al., 2017; Kirksey & Lloydhauser, 2022) while the remaining four studies used state administrative datasets from Florida, North Carolina, and Washington. A potential limiting factor for future research was that states might not have the necessary data infrastructure to match SWDs with their teachers, which could be especially difficult given service models for students in special education (Feng & Sass, 2013).

Finally, the subset of three studies that examined the relationship between teacher licensure area and the academic achievement of students by disability category offered direction for future research. Although the amount of research in this line of inquiry was still quite limited, multiple studies found no meaningful relationship between teacher licensure area and student achievement for students with emotional and behavioral disabilities (Gage et al., 2017; Gilmour, 2020), learning disabilities (Gilmour, 2020), and autism spectrum disorders (Goldman & Gilmour, 2021). Mounting evidence demonstrating that licensure area—specifically the area of special education—was not associated with student achievement for students in varying

disability categories suggested that licensure area might be too broad of an indicator to reflect whether teachers had the necessary skills to work with these populations.

Research Linking State Licensure Policy with Outcomes

The third section of this literature review covers the very limited research available on the relationship between state licensure policies and student achievement. The studies reviewed in this section differ markedly from the previously reviewed studies because they focus on *state-level licensure policies* rather than *teacher-level licensure variables* such as licensure status (i.e., licensed versus unlicensed teachers) or licensure area (e.g., special education-certified versus general education-certified). To date, only two studies examined how state licensure structures were related to student achievement: Goldhaber and Brewer (2000) and Sindelar et al. (2019).

As summarized in the previous section on student achievement, the Goldhaber and Brewer (2000) study used a nationally representative longitudinal dataset to investigate whether high school mathematics and science teachers' licensure status was related to student performance (i.e., teachers holding standard licensure versus teachers holding emergency, probationary, private school, or no licensure). A secondary purpose of the study—and the purpose relevant to this section of the literature review—was to investigate whether "state-by-state differences in teacher licensure requirements systematically affect student achievement" (Goldhaber & Brewer, 2000, p. 130). Using existing policy reports, researchers collected information on state licensure requirements in five areas: exam requirements prior to entering a preparation program, exam requirements prior to licensure, National Teacher Exam requirements, field experience requirements prior to student teaching, and full-time student teaching requirements prior to licensure. Data included the types of exams, average pass rates, and cutoff scores when applicable. Analysis using a multiple regression framework found that

none of these variables were systematically related to state standardized test scores in mathematics and science.

The second study, Sindelar et al. (2019), investigated the relationship between state-level structures for initial special education licensure and key outcomes for teachers and students. First, researchers conducted a comprehensive 50-state scan of special education licensure policies by performing an electronic search of state education agency websites for licensure policy information. Researchers collected information on the types of initial special education licenses offered by each state along with relevant information on license parameters such as grade bands and categorical areas by disability. Data from the scan were used to classify state licensures structures along two dimensions: generic or differentiated structures (i.e., non-categorical licenses versus licenses differentiated by severity or disability category) and expansive or restricted grade bands (i.e., K-12 licenses versus licenses restricted by grade band levels). Using two-way analysis of variances (ANOVAs), these categories were assessed along five outcomes measures: fourth-grade reading, fourth-grade math, eighth-grade reading, and eighth-grade math scores for SWDs on the NAEP (2023) by state as measures of student achievement; and the percentage of highly-qualified special education teachers by state as a proxy for teacher shortage. The study found no statistically significant relationship between state licensure structures and the outcome measures.

Although neither study found evidence to support a link between state licensure policy and student outcomes, they provided useful models for future research. Both studies began with a descriptive state-by-state review of the requirements associated with licensure policy—what Kennedy (1995) termed the ‘policy parameters’ that could be manipulated by policymakers. The studies shared fewer methodological commonalities after this point. For example, Goldhaber and

Brewer (2000) used a national longitudinal dataset—thus allowing for concurrent investigation into their primary research question about the relationship between teacher-level licensure and student achievement—while Sindelar et al. (2019) used national indicators of teacher and student performance for consistent measures across states.

The studies also used differing methods of statistical analysis. Goldhaber and Brewer (2000) used a multiple regression framework, although unfortunately the specifications of the model used to examine state licensure variables were not included in their public report, most likely because this was a secondary research question (see footnote 17, p. 142). Sindelar et al. (2019) used two-way ANOVA analyses to examine main effects and interactions between licensure structure parameters and the dependent measures. This method of analysis provided a better model for a study seeking to understand differences between different categories of licensure and multiple dependent measures related to teacher and student performance.

Both studies noted the limitations associated with linking state policies to teachers and their influence on students. Goldhaber and Brewer (2000) reported challenges collecting complete data on state-by-state licensure policies. As a result, a limitation of their study was that state licensure information reflected requirements across multiple years prior to 1992, making it difficult to temporally link teachers with the state licensure policies to which they were held. Facing a similar challenge collecting data on a national scale, Sindelar et al. (2019) suggested that time series analysis within individual states that have undergone specific licensure policy changes might be a better way to establish a link between policy and teacher and student performance.

Discussion

Several major themes arose from this literature review. The first and perhaps most important theme was the scarcity of research on state teacher licensure renewal policies. Most of the empirical support for the relationship between licensure and teacher/student outcomes came from adjacent areas of research on initial teacher licensure and the individual activities associated with the licensure renewal process. Second, evidence supporting a relationship between licensure policy and key outcomes—particularly student achievement outcomes—was both sparse and conflicting, suggesting a need for further research. Kennedy (1999) noted it was notoriously difficult to link policy initiatives with complex student learning and standardized test scores provided a readily available but ultimately imperfect "first-level approximation" of this goal (p. 346). Finally, the limited amount of research that assessed the relationship of state-level licensure policies with student achievement provided a blueprint to guide future research. Studies of this nature offered important information to guide how states created licensure policies that benefitted teachers and students.

CHAPTER III

METHODOLOGY

The purpose of this study was threefold: to describe the requirements related to students with disabilities (SWDs) in state teacher licensure renewal policies; to explore how states with high-performing SWDs relicensed teachers; and to investigate the relationship between the rigor of relicensure requirements and student achievement. The study was organized around the following research questions:

Q1 What requirements related to SWDs are in state teacher licensure renewal policies?

Q2 How do states with high-performing SWDs relicense teachers?

Q3 Are state licensure renewal requirements related to student achievement?

This study used a two-phase design to describe state licensure renewal requirements pertaining to SWDs and to explore the relationship between those requirements and student achievement. The first phase of the study, corresponding with Q1 and Q2, consisted of a scan of licensure renewal policies across 50 states and the District of Columbia. I conducted further analysis to determine whether there were commonalities in licensure renewal requirements among states with high-performing SWDs as measured by their academic achievement and inclusion in the general education environment. This chapter explains Phase I procedures for collecting licensure renewal policy data, criteria for identifying states with high-performing SWDs, and methods for reporting findings.

The second phase of the study, corresponding with Q3, investigated the quantitative relationship between the rigor of state licensure renewal policies pertaining to SWDs and outcomes variables for reading and math achievement. This chapter explains Phase II procedures for coding the rigor of licensure renewal policies, obtaining student achievement outcome data, and methods of statistical analysis.

Phase I: Scan of State Licensure Renewal Requirements

Data Collection

The foundation of this study was an analysis of current state licensure renewal policies pertaining to SWDs. Because teachers need clear and accessible guidance about the licensure renewal process, information about licensure renewal requirements is readily available to the public via state education agency websites. I obtained Institutional Review Board approval to proceed with data collection in June 2023 (see Appendix A). I conducted an electronic search of state education agency websites for information pertaining to teacher licensure renewal requirements for all 50 states and the District of Columbia. I documented the following information in an Excel spreadsheet, noting differing requirements for general education and special education teachers when applicable:

- name of the first credential for experienced educators that might be indefinitely renewed (e.g., professional license, standard license);
- length of the standard license renewal cycle;
- cost of renewing a standard teaching license;
- types of activities required or offered as options for license renewal (e.g., continuing education, National Board certification, performance evaluations, teaching experience, test scores, other activities);

- number and type of professional learning units required to renew license (e.g., clock hours, credits) if continuing education was required or offered as a renewal option;
- whether teachers were required to complete an individual professional development or growth plan as part of the renewal process;
- requirements for general content that must be covered in licensure renewal activities (e.g., teachers must complete a certain number of hours of professional learning activities in their area of certification or field of teaching);
- requirements for specific topics related to SWDs that must be covered in licensure renewal activities (e.g., teachers must complete requirements related to topics such as the science of reading, dyslexia, classroom management, etc.);
- links to state education agency websites with information about the licensure renewal process and requirements; and
- links to relevant state statutes (e.g., state administrative codes) or regulations (e.g., state board of education rules) governing license renewal.

Using an Excel spreadsheet to organize information from the scan allowed me to take notes and document additional information needed to contextualize or explain the renewal policies. For example, when available, I noted the dates when licensure renewal policies went into effect or information about the timeline for implementation of new renewal policies. Using the Excel spreadsheet also allowed me to inductively develop a list of topics related to the education of SWDs that appeared in licensure renewal requirements.

Data Analysis

Research Question 1

The first research question explored what licensure renewal requirements states had pertaining to SWDs. After documenting licensure renewal policy data from state education agency websites in an Excel spreadsheet, I analyzed the data using descriptive statistics. Descriptive analysis included reporting on the number or percentage of states that shared certain licensure renewal requirements or features. It also included reporting on averages or ranges of professional learning units required during the renewal process. Analysis included the following:

- summary of special education teacher licensure renewal requirements by state;
- summary of general education teacher licensure renewal requirements by state;
- analysis of the similarities and differences in licensure renewal requirements in states whose policies specifically address SWDs; and
- summary of topics pertaining to SWDs that appear in licensure renewal requirements (e.g., science of reading, dyslexia, behavior supports).

Research Question 2

The second research question explored how states with high-performing SWDs relicensed teachers. Precedent for this type of research question came from Sindelar et al.'s (2019) study on the landscape of special education licensure that investigated how effective states licensed special education teachers. Sindelar et al. (2019) defined 'effective' states by their rankings in the proportion of highly-qualified special education teachers, the proportion of SWDs served inside regular classes for 80% or more of the school day, and eighth-grade NAEP (2023) reading scores for SWDs.

For the present study, I framed Q2 around states with high-performing SWDs. I defined 'high-performing' states via three criteria: fourth-grade NAEP (2023) reading scores for SWDs, fourth-grade NAEP math scores for SWDs, and the proportion of SWDs served inside regular classes for 80% or more of the school day.

For NAEP (2023) reading and math scores, I used data from the most recent administration in 2022. I obtained the data using the NAEP data explorer, which is publicly-available tool on the NAEP website to organize and analyze NAEP data. To facilitate comparisons across states and student groups, I used the data explorer to obtain fourth-grade reading and math average scaled scores for SWDs. I used fourth-grade NAEP scores because they were substantially less impacted by demographic nonresponses in the 2022 administration than eighth-grade scores (only one state, New Mexico, did not meet standards for reporting for fourth-grade scores when limited to the student and teacher groups of interest to this study).

Because the NAEP collects teacher demographic information associated with each test administration, using the NAEP data explorer tool allowed me to limit scores only to SWDs whose teacher held a valid regular or standard teaching license at the time of test administration (as opposed to teachers who held a temporary license, were working towards their full license, or did not plan to obtain a full license). This ensured that the NAEP scores reflected SWDs whose teachers were impacted by licensure renewal policies because they held a renewable regular or standard credential.

For the proportion of SWDs served inside general education classrooms for 80% or more of the school day, I used publicly available data from indicator 5a of the State Performance Plan/Annual Performance Report (SPP/APR) that states submit annually to the U.S. Department of Education's Office of Special Education Programs (OSEP, 2022). The most recent data

available were from the 2021-2022 SPP/APRs. Indicator 5a is a measure of least restrictive environment (LRE), which refers to the extent to which SWDs are educated in the general education setting to the maximum extent appropriate for their needs. When coupled with high levels of student achievement, a high proportion of SWDs served in general education classrooms was a confirming indicator that SWDs were experiencing success meeting grade-level academic standards.

Following precedent from Sindelar et al. (2019), I identified high-performing states by ranking all 50 states and the District of Columbia on the three measures described previously: fourth-grade NAEP reading scores for SWDs, fourth-grade NAEP math scores for SWDs, and the proportion of SWDs served inside regular classes for 80% or more of the school day. I defined high-performing states as those ranked in the top 10 for at least two of the measures and no lower than the top 20 states for the third measure. After identifying the group of high-performing states, I examined their data from the policy scan conducted for Q1 and offered a summary of the similarities and differences in their licensure renewal requirements.

Phase II: Study of Licensure Renewal Requirements and Student Outcomes

Data Collection

Building from the policy scan and analysis conducted in Phase I, I examined the quantitative relationship between the rigor of state licensure renewal policies pertaining to SWDs and outcome variables for student achievement. The following sections explain how I defined these variables.

Independent Variable

The independent variable for the study was rigor of licensure renewal requirements. Two studies offered precedent for quantifying rigor of licensure renewal requirements. Georges et al.

(2010) created an index to measure the rigor of mathematics content requirements within initial certification policies for elementary teachers across states. The index, scored on a scale of 0–3, rated the extent to which state certification policies included mathematics requirements and required certain types of licensure exams (e.g., Praxis I, Praxis II). Another precedent for quantifying licensure rigor came from Sindelar et al. (2019) who examined the relationship between state-level structures for initial special education teacher licenses and multiple dependent measures for teacher shortage and student achievement. Rigor of state licensure structures was quantified via two categorical dimensions: generic or differentiated structures (i.e., non-categorical licenses versus licenses differentiated by severity or disability category) and expansive or restricted grade bands (i.e., K-12 licenses versus licenses limited by grade bands).

For the current study, I quantified rigor of licensure renewal requirements by scoring state policies on three indicators: (a) renewal content requirements related to SWDs, (b) special education teacher renewal requirements related to SWDs, and (c) general education teacher renewal requirements related to SWDs. Table 3.1 presents the scoring criteria for the three indicators. The following sections define the indicators and further explain the scoring criteria.

Table 3.1

Scoring Criteria for Rigor of Licensure Renewal Requirements

Indicator	Score	Criteria
Indicator 1: Renewal Content Requirements Related to SWDs	0	State policy has no specifically named content requirements related to the education of SWDs.
	1	State policy has specifically named content requirements related to the education of SWDs (e.g., science of reading, dyslexia, behavior supports).
Indicator 2: Special Education Teacher Requirements Related to SWDs	0	State policy has no content requirements related to SWDs for special education teachers.
	1	State policy requires special education teachers to complete renewal activities that relate to their area of endorsement (e.g., K-12 special education) which may include specifically named content requirements related to the education of SWDs.
Indicator 3: General Education Teacher Requirements Related to SWDs	0	State policy has no content requirements related to SWDs for general education teachers.
	1	State policy requires some general education teachers to fulfill specifically named content requirements related to the education of SWDs.
	2	State policy requires all general education teachers to fulfill specifically named content requirements related to the education of SWDs.

Indicator 1: Renewal Content Requirements Related to Students with Disabilities.

This indicator referred to whether states had specifically named requirements for teachers to engage in licensure renewal activities pertaining to SWDs. Specifically named requirements related to SWDs stated the nature of the licensure renewal content and/or activities related to SWDs. For example, a state might require that a certain portion of continuing education units covers content related to SWDs or states might require teachers to engage in professional learning activities on named topics such as dyslexia or behavior supports.

Indicator 2: Special Education Teacher Requirements Related to Students with Disabilities. This indicator referred to whether states required special education teachers to participate in licensure renewal activities that covered content related to SWDs. State licensure renewal policies fell into one of two categories within this indicator. The first category was states that had specifically named content requirements related to SWDs that applied to special education teachers (e.g., special education teachers must complete continuing education on a specifically named topic such as dyslexia or behavior supports). The second category was states that had a general requirement that teachers must complete some or all of their licensure renewal continuing education activities in their area of endorsement, meaning that special education teachers had to complete continuing education activities related to special education.

Indicator 3: General Education Teacher Requirements Related to Students with Disabilities. This indicator refers to whether states require general education teachers to participate in licensure renewal activities that cover content related to SWDs. Because some state polices only required certain types of general education teachers to participating in licensure renewal activities related to SWDs (e.g., elementary teachers only), this indicator was scored on three levels to allow for differentiation between licensure renewal policies pertaining to SWDs that targeted none, some, or all general education teachers.

Using the Phase I state policy scan data, I scored states on each of the three indicators and then added the individual indicator scores to generate an overall licensure renewal rigor score on a scale from zero to four. Next, I assigned states to one of three licensure renewal rigor levels—low, medium, or high—based on their overall licensure renewal rigor score. The purpose of translating the overall score into three leveled categories for licensure renewal rigor was to improve the statistical power of later analyses while preserving the flexibility to conduct separate

analyses for the three individual indicators of rigor. The following criteria were used for assigning states to low, medium, and high licensure renewal rigor levels:

- low rigor = overall score of 0;
- medium rigor = overall score of 1 or 2; and
- high rigor = overall score of 3 or 4.

Dependent Variable

The dependent variable in this study was student achievement. I chose student achievement because of the availability of the NAEP dataset, which offered consistent test score measures to facilitate comparisons across states. I used four measures of student achievement from the NAEP, specifically fourth- and eighth-grade reading and mathematics scores for SWDs. I limited the sample to scores from SWDs whose teachers held a valid regular or standard license since these teachers were directly impacted by licensure renewal policies.

Data Analysis

Question 3 investigated the relationship between the rigor of state licensure renewal requirements and student achievement as measured by the NAEP. To prepare for analysis, I examined the data for the independent variable (relicensure rigor scores) and dependent variable (NAEP student achievement scores) to ensure key assumptions were met. I conducted analysis for Q3 in four steps using the Statistical Package for Social Sciences (SPSS) version 29.0.1.0.

Step 1

I conducted two separate multivariate analysis of variance (MANOVA) procedures to examine the relationship between a factor variable for relicensure rigor and response variables for 2022 state test scores. The MANOVA assessed differences for multiple continuous dependent variables (e.g., 2022 reading and math scores together by grade) by an independent grouping

variable (low, medium, or high rigor of state relicensure policy). I performed a MANOVA once for fourth-grade reading and math scores together and again for eighth-grade reading and math scores together.

Step 2

I conducted four separate analysis of covariance (ANCOVA) procedures to examine the relationship between a factor variable for relicensure rigor and response variables for 2022 NAEP scores when moderated by a covariate for prior achievement. Adding a covariate for a state's prior achievement (defined as the average of the state's 2013, 2015, 2017, and 2019 NAEP scores for the applicable grade and subject) helped to control for the variation from the first post-pandemic administration of the NAEP in 2022. I conducted four separate ANCOVAs for fourth-grade reading, fourth-grade math, eighth-grade reading, and eighth-grade math using the appropriate covariates for states' average prior achievement in those grades and subjects.

Step 3

Building on step 2, I added a second independent variable to the analysis representing a state's high-performing status. I used two-way ANCOVAs to assess whether there was an interaction effect between two independent variables in terms of a continuous dependent variable after controlling for covariates: relicensure rigor (low, medium, high) and a state's high-performing status (low or high). I used the definition of high-performing and the procedures for categorizing states as low-performing or high-performing previously described in the analysis section for Q2. The dependent variable (2022 state test scores) and covariate (state's average prior achievement from 2013–19) remained the same from step 2. I conducted four separate two-way ANCOVAs for fourth-grade reading, fourth-grade math, eighth-grade reading, and eighth-grade math scores. For this analysis, I specifically looked for interaction effects between the

variables for state relicensure rigor and high-performance status as well as main effects of the variables.

Step 4

Finally, I examined the relationship between the three individual indicator scores for licensure renewal (described in detail in the independent variable section) and student achievement. For Indicator 1 (renewal content requirements related to SWDs) and Indicator 2 (special education teacher renewal requirements related to SWDs), I conducted a Hotelling's T^2 analysis, which is a special type of MANOVA in which the independent variable has two groups. I conducted separate analyses for fourth and eighth grades using combined dependent variables for reading and math scores. For Indicator 3 (general education teacher renewal requirements related to SWDs), I did not perform a separate analysis due to low sample sizes in certain groups of the independent variable. Combining groups to increase the sample sizes produced an analysis that was duplicative of the analysis conducted for Indicator 1.

This four-step analysis process helped to generate a comprehensive picture of the quantitative relationship between rigor of state relicensure policies and student achievement. Not only did the analysis include controls for states' prior achievement, it also examined the interaction between states that had rigorous licensure renewal policies and states that had high-performing SWDs. It also investigated the extent to which individual aspects of relicensure (e.g., requirements for special education teachers versus general education teachers) related to student achievement. These analyses expanded on previous research by exploring multiple aspects of state relicensure policy both individually and together.

CHAPTER IV

RESULTS

The purpose of this study was threefold: to describe the requirements related to students with disabilities (SWDs) in state teacher licensure renewal policies; to explore how states with high-performing SWDs relicensed teachers; and to investigate the relationship between the rigor of relicensure requirements and student achievement.

Research Question 1 Findings

Q1 What requirements related to SWDs are in current state teacher licensure renewal policies?

To answer this research question, I conducted a comprehensive electronic search of state education agency websites to gather information on current licensure renewal policies across 50 states and the District of Columbia. I collected information on the first credential for experienced educators that could be renewed an unlimited number of times, typically named a 'standard' or 'professional' teaching license (see the Definition of Terms in Chapter I for license terminology; although states use varying names for this credential, I used the term 'standard' in the results section to refer to this category of license). I did not collect information on initial or advanced teaching licenses and focused solely on requirements to renew—not initially obtain or advance—a standard license. I validated licensure renewal requirement information from the state education agency websites by cross-referencing it with relevant state statutes and/or regulations. Appendix Table B.1 contains links to the policy scan source material from state education websites and state regulations.

To address Q1 results, I provide a brief overview of basic state licensure renewal policy information followed by a discussion of state licensure renewal approaches, an analysis of licensure renewal requirements related to SWDs, and a summary of findings.

Licensure Renewal Overview

Appendix Table B.2 provides a summary of the names and the length of validity of standard teaching credentials across 50 states and the District of Columbia. Thirty-seven states called their base renewable credential for experienced educators a standard or professional teaching license. Nine states used level or tier terminology to name this credential, sometimes in conjunction with other terms (e.g., a Level II professional license, a Tier III license). Other terms used to refer to this credential included a regular, practitioner, experienced educator, continuing, or clear license. Connecticut used the term 'provisional educator certificate' for its first credential past the initial license, which was notable because the term 'provisional' was widely used in other states to refer to a time-limited, nonrenewable credential for novice teachers instead of a renewable credential for experienced teachers.

Thirty-seven states operated on five-year licensure renewal cycles. All but five states operated on licensure renewal cycles ranging between 3 and 10 years. These five states (Missouri, New Jersey, New York, Pennsylvania, and Wisconsin) offered lifetime or continuously valid licenses as their standard credential. Missouri, New York, Pennsylvania, and Wisconsin required periodic activities to maintain registration of the lifetime license (e.g., completing periodic professional development, submitting a background check or renewal fee) while New Jersey had no requirements for maintenance of the lifetime license.

Most states required a fee to renew standard teaching licenses. Of the 48 states for which I was able to locate information, 44 states required licensure renewal fees ranging from $10 to

$250. Across states that required renewal fees, the average cost was approximately $94. The fees went toward processing licensure renewal applications and did not include costs of things like external professional development, which teachers might have to pay for themselves.

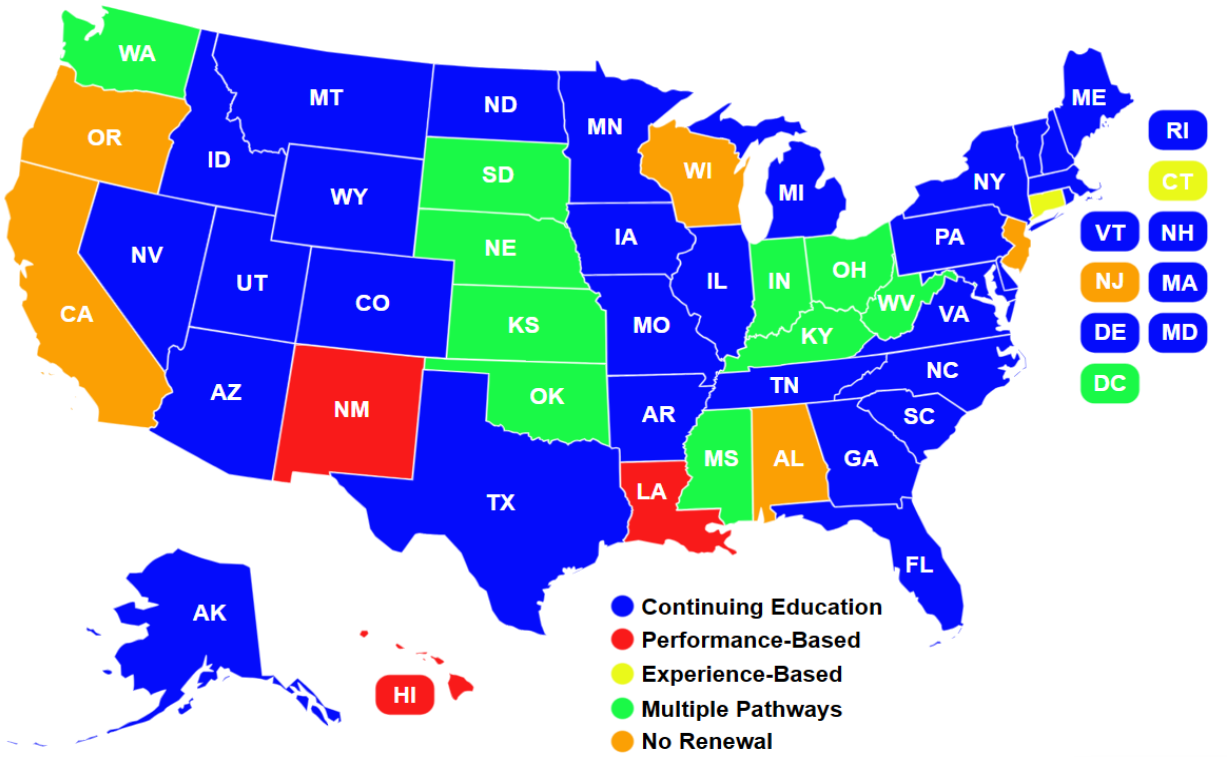
State Licensure Renewal Approaches

The following section summarizes the approaches to licensure renewal used by states. Licensure approaches are defined by the required or optional activities teachers complete to renew their license. Based on the results of the scan, states could be grouped into five categories based on their approach to teacher license renewal: (a) continuing-education based approaches, (b) performance-based approaches, (c) experience-based approaches, (d) multiple pathways approaches, and (e) no renewal activities required. Figure 4.1 shows which states used these approaches and the following sections explain those approaches.

Continuing education-based approaches were the most common method of licensure renewal with 31 states requiring teachers to complete some type of continuing education activity or activities to renew their license. Comparatively, performance-based and experience-based approaches to licensure renewal were relatively rare with only three states basing renewal solely on satisfactory summative evaluation performance ratings (Hawaii, Louisiana, and New Mexico) and one state basing renewal solely on teaching experience (Connecticut). Eleven states offered multiple pathways approaches, which provided teachers with a range of options to renew their license. These options commonly included continuing education, performance ratings, and years of experience but could include other qualifications and activities as well (e.g., attaining passing test scores on licensure content area exams). Finally, at the time this scan was conducted, five states did not require any activities for licensure renewal (Alabama, California, New Jersey, Oregon, and Wisconsin).

Figure 4.1

Overview of State Licensure Renewal Approaches



Within these overarching licensure renewal approaches, teachers had varying degrees of latitude to choose specific activities to satisfy the requirements. For example, in North Dakota, which had a continuing education-based renewal approach, the only accepted activity to satisfy the continuing education requirement was completing six semester hours of college-level coursework. However, in Ohio, which offered a multiple pathways renewal approach, teachers could meet their license renewal requirements through continuing education (which is a broad term that encompasses college coursework, locally-administered professional development, or a range of other activities related to their teaching assignment), attaining National Board certification, or providing evidence of consistently high summative evaluation ratings.

Appendix Table B.3 summarizes the activities most commonly associated with licensure approaches in each state: (a) continuing education, (b) individual professional development and growth plans, (c) National Board certification, (d) performance evaluations, (e) teaching experience, (f) test scores, (g) other requirements, and (h) no requirements. Appendix Table B.3 provides information about whether the listed activities were a requirement for renewal, an option for renewal, or partially met requirements for renewal in each state. The following sections summarize information gathered through the scan for each of these licensure renewal activities.

Continuing Education

Continuing education remains the most commonly approach for teachers to renew their licenses with 42 states requiring or offering continuing education as an approach for licensure renewal. Of these 42 states, 28 states required some form of continuing education to renew a license with 19 states solely relying on continuing education and nine states requiring continuing education plus some other requirement(s; e.g., implementation of a professional development plan, proof of years of teaching experience, participation in a mentoring program, or some combination thereof). Eleven states offered continuing education as an option to renew licensure within a multiple pathways approach. Three states (Missouri, New York, and Pennsylvania) required teachers with lifetime licenses to complete periodic professional development as a condition of continued employment. For the purposes of this scan, I noted these states as requiring maintenance in the form of continuing education for ongoing licensure (see Appendix Table B.3).

Appendix Table B.2 shows continuing education requirements for each state in terms of the amount and type of acceptable activities. To compare the amount of continuing education

required for licensure renewal across states, I converted the professional learning unit used by the state (e.g., continuing education units, professional development points, semester hours, credits) to equivalent contact hours. In most cases, states published guidance about these equivalencies (e.g., one professional development point equals one contact hour). One semester hour was calculated as the equivalent of 15 contact hours unless otherwise noted in state guidance. Then, to facilitate comparisons across states with different lengths of licensure renewal cycles, I divided the equivalent contact hours for renewal by the number of years in the renewal cycle. Of states with a continuing education requirement, the number of continuing education hours required per renewal cycle ranged from 36 hours per year (Arkansas and Ohio) to nine hours per year (Rhode Island). The mean number of continuing education hours required per renewal cycle was approximately 20 hours per year and the median was 18 hours per year. Appendix Table B.2 shows continuing education requirements, equivalent contact hours, and renewal hours per year by state.

Individual Professional Development Plans

Seven states (Georgia, Maryland, Massachusetts, Minnesota, New Hampshire, Ohio, and Virgina) required educators to create an individual professional development plan in conjunction with the completion of continuing education requirements to renew their license. Teachers typically worked with their supervisor to develop and approve these plans, which might include professional development goals and student growth goals. Five additional states (Arkansas, Indiana, Iowa, Kansas, and Washington) allowed implementation of a professional development plan to satisfy or partially satisfy licensure renewal requirements. Since Tooley and White's 2018 scan, two states have eliminated the requirement of a professional development plan for licensure renewal and replaced it with an experience-based renewal option (Kentucky) and an option to

allow credit for service during the Coronavirus disease (COVID)-19 pandemic (Utah). Since 2018, two additional states (Maryland Minnesota) have added a requirement for educators to develop an individual professional development plan for licensure renewal.

National Board Certification

Six states (Indiana, Kansas, Mississippi, Ohio, South Dakota, and Washington) allowed earning National Board certification as a standalone option for licensure renewal, meaning that earning or renewing the certification automatically renewed the educator's license. Eleven states allowed earning National Board certification to fully satisfy continuing education requirements, while an additional five states stipulated it could partially satisfy continuing education requirements. Some of these states specifically named National Board certification as an acceptable activity for continuing education while other states had less defined policies that might allow for National Board certification to count toward continuing education without explicitly naming it as an acceptable activity.

Performance Evaluations

Seven states used summative performance evaluation ratings to fully or partially count toward license renewal. Three states—Hawaii, Louisiana, and New Mexico—used performance evaluations as the sole path to licensure renewal. Hawaii revised its policy in January 2023 to require that teachers submit performance evaluations to verify successful teaching experience. An additional two states (District of Columbia and Ohio) allowed successful performance evaluations to serve as a standalone option for licensure renewal while an additional two states (Tennessee and Utah) allowed successful performance evaluations to partially meet licensure renewal requirements. Rhode Island used to require performance evaluations for licensure renewal but changed their renewal requirement to continuing education only in 2020.

Teaching Experience

Eight states had provisions that required or allowed teaching experience to count toward license renewal. Only one state, Connecticut, renewed licenses solely on the basis of teaching experience, requiring district superintendents to submit a statement of professional experience form for the teacher renewing their license verifying they had successfully completed 10 months of full-time teaching in a Connecticut public school during the last renewal cycle. Four states with a multiple pathways renewal model allowed proof of teaching experience within the past five-year renewal cycle to serve as a standalone option for renewal: Kansas (three years of experience—option only available to teachers holding a master's degree), Kentucky (three years of experience), Nebraska (one year of experience at half time or more), and Oklahoma (three years of experience). Finally, three states required proof of teaching experience in addition to other activities for teachers to renew their license. Maryland required three years of satisfactory full-time teaching experience plus completion of continuing education activities in conjunction with their personal professional development plan to renew a license. In Arkansas, teachers must complete at least two years of teaching experience during the previous five-year renewal cycle in addition to 36 hours of professional development annually. In North Dakota, teachers must submit evidence of 30 days of contracted teaching service within the last five-year renewal cycle in addition to completing six semester hours of college coursework.

Test Scores

Two states allowed passing scores on a subject area knowledge exam to count toward license renewal. In the District of Columbia, teachers had the option to renew their teaching license solely on the basis of achieving passing test scores on the Praxis II subject content exam in their area of licensure. No other state offered an option to renew solely based on passing

licensure exam scores. In Florida, earning a passing score on the Florida subject area exam in the area of the licensure being renewed could count for three of the six semester hours of college credit required for renewal.

Other Requirements

Several states required activities or qualifications for licensure renewal beyond those already covered in this section. For example, Delaware and Minnesota specified that teachers must complete a mentoring program—if they had not done so already—to renew their standard license. This was a notable requirement because in many states, completing a mentoring and induction program was a condition to advance from an initial to a standard license rather than a condition of standard license renewal. Minnesota further elaborated that teachers renewing a Tier 3 (standard) license must participate in "mentorship and evaluation aligned with the district's teacher development and evaluation model" (Minnesota Professional Educator Licensing and Standards Board [MPELSB], 2020, para. 1). South Dakota, which offered teachers a multiple pathways renewal approach, allowed teachers who participated as a mentee or a mentor in a state-approved mentor program for at least two years during their current renewal cycle to renew their license with no additional requirements.

West Virginia, also a multiple pathways state, offered several unique options to renew a standard license. In addition to a traditional renewal pathway via coursework, West Virginia teachers had two additional pathways to renewal. The first was a qualifying degree and professional salary classification pathway in which teachers with a master's degree who had attained an MA+30 salary classification might renew without additional requirements. The second was a qualifying age pathway in which teachers who were 60 years or older might renew without additional requirements. No other state offered these types of renewal options.

No Requirements

Five states required no substantive activities to renew a teaching license. In California, the standard ‘clear credential’ was valid for five years and might be renewed without the completion of professional development or service obligations. New Jersey and Wisconsin offered lifetime licenses as their standard credential. Wisconsin teachers must submit a background check and renewal fee every five years to maintain their standard license, which was effectively the same as the procedure to renew a standard license in California. New Jersey was the only state that offered a continuously valid standard license with no action required for maintenance.

The remaining two states, Alabama and Oregon, had temporarily suspended licensure renewal requirements due to teacher shortages. In Alabama, teachers with expiring licenses might submit a one-time certificate continuation form that allowed them to continue to practice for another renewal cycle without meeting any academic, professional development, or service requirements. Previously, Alabama offered an extensive multiple pathways renewal approach in which teachers could choose between completing 100 clock hours of professional development, six semester hours of college credit, attaining National Board certification, completing three years of full-time teaching plus 50 clock hours of professional development, or various other combinations of these activities. New renewal requirements were supposed to go into effect on July 1, 2023 but have been delayed until July 1, 2024.

In Oregon, recognizing the heavy burden the COVID-19 pandemic caused to Oregon's K-12 schools, legislators temporarily suspended the continuing education requirements for license renewal via House Bill 4030 (Oregon Teacher Standards and Practices Commission, n.d.). Through December 31, 2023, teachers with expiring licenses might submit an application to

renew their license without evidence of completed professional development. When this provision expires in 2024, it is likely that Oregon teachers will resume having to complete continuing education to renew their license.

Licensure Renewal Requirements Related to Student with Disabilities

The purpose of Q1 was to investigate what requirements related to SWDs were in state teacher licensure renewal policies. States employed two types of policies for requiring content related to SWDs within the licensure renewal process. The first type of policy required that educators complete renewal activities related to their area of endorsement. Under this type of policy, only teachers certified in special education areas were required to complete licensure renewal activities related to special education. Fourteen states required teachers to complete some or all of their continuing education units in their area of licensure or endorsement.

The second type of policy required educators to complete licensure renewal activities that addressed specifically named content requirements related to special education and/or students with disabilities. This scan found 13 states had specifically named licensure renewal content requirements related to SWDs across five topic areas: (a) special education and/or SWDs generally, (b) reading instruction, (c) dyslexia, (d) behavior, and (e) other types of requirements. Table 4.1 shows which states had these requirements.

In accordance with study parameters, for this portion of the scan, I focused exclusively on SWD-related content requirements tied to the licensure renewal process. I did not include requirements for one-time endorsements or standalone professional development required of in-service teachers. For example, Arizona's current requirement for practicing K-5 literacy teachers to earn a K-5 literacy endorsement with a focus on reading instruction and intervention would

not count for the purposes of this scan because it was a one-time requirement and not a recurring requirement for licensure renewal. The following sections summarize requirements by state across the five topic areas.

Table 4.1

Licensure Renewal Content Requirements Related to Students with Disabilities

Topic	States
Special education and/or SWDs	CO, FL, MA, TX, VA
Reading instruction	AR, MD, MN, NC, SC, TN
Dyslexia	TX, VA
Behavior	CO, MN
Other	AK, WA

Topic Area 1: Requirements Related to Special Education or Students with Disabilities

Five states requires licensure renewal content related to special education or SWDs generally: Colorado, Florida, Massachusetts, Texas, and Virginia. Table 4.2 summarizes the statutory or regulatory requirements for renewal content related to special education or SWDs in these states.

Table 4.2

Statutory or Regulatory Requirements for Licensure Renewal Content Related to Special Education or Students with Disabilities

State	Statutory or Regulatory Requirements
CO	May require all or a portion of the professional development activities to be related to…increasing awareness of laws and practices relating to educating students with disabilities in the classroom, including but not limited to Child Find and inclusive learning environments." (Colorado Revised Statutes § 22-60.5-110, 2022)
FL	"Credits or points that provide training in the area of scientifically researched, knowledge-based reading literacy grounded in the science of reading, including explicit, systematic, and sequential approaches to reading instruction, developing phonemic awareness, and implementing multisensory intervention strategies, and computational skills acquisition, exceptional student education, normal child development, and the disorders of development may be applied toward any specialization area. (Florida Statute § 1012.585, 2013)
MA	At least 15 PDPs [professional development points] related to training in strategies for effective schooling for students with disabilities and instruction of students with diverse learning styles. (Massachusetts Code, 603 CMR 44.06, 2017)
TX	Must attain some hours of CPE [continuing professional education] that includes… educating diverse student populations, including: (i) students who are educationally disadvantaged; and (ii) students at risk of dropping out of school. (Texas Administrative Code § 232.11, 2021)
VA	Every person seeking renewal of a license as a teacher shall complete training in the instruction of students with disabilities that includes (i) differentiating instruction for students depending on their needs; (ii) understanding the role of general education teachers on the individualized education program team; (iii) implementing effective models of collaborative instruction, including co-teaching; and (iv) understanding the goals and benefits of inclusive education for all students. (Virginia Administrative Code, 8VAC20-23-110, 2023)

Colorado. House Bill 20-1128, enacted in March 2020, required all Colorado teachers, administrators, and related service providers holding professional licenses to complete professional development for licensure renewal related to educating SWDs (CDE, 2023). Of the 90 contact hours of professional development required to renew a professional license, a

minimum of 10 hours must be related to the education of SWDs and behavioral health (CDE, 2023). Of these 10 contact hours, a minimum of one hour must specifically address educating SWDs and one hour must specifically address behavioral health strategies (behavioral health content requirements is discussed in a later section).

This requirement might be satisfied through any single course or combination of courses as long as there was 'substantial' coverage of the content in both areas (CDE, 2023). The CDE (2023) did not require pre-approval of the professional development activities used to fulfill this requirement. Beyond legislative references to Child Find and inclusive learning environments, no additional guidance was given as to the content of the SWDs' training requirement.

Originally, teachers who had less than three years remaining on their licenses as of June 30, 2020 had until the end of the next renewal period to fulfill these requirements. However, House Bill 21-1104, passed in July 2021, extended the professional license validity period from five years to seven years, automatically extending all unexpired licenses for another two years and thus extending the time for practicing teachers to fulfill the SWDs training renewal requirement (CDE, 2023). Effective June 30, 2025, teachers must complete SWD training as a recurring requirement for every future renewal cycle.

Florida. Per Senate Bill 1108 passed by the Florida Legislature in 2013, all Florida teachers must complete six semester hours of college credit, at least one semester hour of which must be related to teaching SWDs, to renew their professional certificate. Effective July 1, 2014, this requirement must be satisfied with each license renewal cycle. The Florida Department of Education (FDE, 2023a) provided guidance for acceptable equivalencies for one semester hour of college credit, which included earning 20 in-service points from a state-approved master in-service program, a passing score on Florida's Exceptional Student Education (K-12) subject area

exam, or an Exceptional Needs Specialist certificate from the National Board for Professional Teaching Standards (FDE, 2023a).

To help teachers meet this requirement, the FDE Bureau of Exceptional Education and Student Services maintains a portal to professional learning alternatives (PLAs) that lists free, state-approved facilitated and self-paced online courses designed specifically for Florida educators (FDE, 2023b). The PLA course topics included behavior, transition, multi-tiered systems of supports, reading, math, and student services. The foundation-level PLA course to satisfy the license renewal requirement, titled *Teaching Students with Disabilities*, is an asynchronous online course that covers content related to federal legislation and state processes; understanding disabilities and models of support; responsive classroom practices; differentiated environments; and explicit and intensive instruction (FDE, 2023b).

Massachusetts. In June 2017, the Massachusetts Board of Elementary and Secondary Education approved regulatory changes for licensure renewal requirements for Massachusetts educators. The impetus for these changes was to streamline content area requirements while elevating the importance of equipping Massachusetts educators with skills to serve students with diverse learning needs (Massachusetts Department of Elementary and Secondary Education, 2017). To that end, a previous round of regulatory changes in 2012 added licensure renewal requirements related to the education of English language learners, specifically Sheltered English Immersion training. The regulatory changes in 2017 added licensure renewal requirements related to the education of SWDs. Massachusetts educators seeking to renew their professional license must work with their supervisor to develop an individual professional development plan consisting of 150 PDPs, at least 15 of which must relate to strategies for instructing SWDs and other students with diverse learning needs.

State regulations did not provide any further guidance about the content of this training. However, the Massachusetts Department of Elementary and Secondary Education (2017) offered a free, online course titled *Foundations for Inclusive Practice: Educator* aimed at general education and special education teachers working in inclusive settings. Participants might satisfy the 15 PDP requirement related to SWDs via this course. The content of this course was designed to leverage the Massachusetts *Educator Effectiveness Guidebook for Inclusive Practice*, a compendium of evidence-based materials designed to align best practices for inclusion with the state's educator evaluation framework and tools.

Texas. Per the Texas Administrative Code, all Texas teachers must complete continuing professional education (CPE) training regarding "educating diverse student populations, including students who are educationally disadvantaged and students at risk of dropping out of school" (Texas Administrative Code § 232.11, 2021, p. 1). This training must include content specific to educating students with dyslexia (these requirements are discussed in a later section).

In 2021, the Texas Legislature made significant changes to the CPE requirements for licensure renewal, specifically the educating diverse student populations requirement, by removing several student groups specifically named in code. Senate Bill 1267 removed the following three groups from the educating diverse student populations requirement: (a) students eligible to participate in special education programs; (b) students eligible for services under Section 504 of the Rehabilitation Act of 1973; and (c) students with intellectual and developmental disabilities (Texas Legislature, 2021). Other groups and requirements removed included students of limited English proficiency, students with mental health needs or substance abuse issues, and grief- and trauma-informed strategies to support student learning and behavior. As a result of these changes, the only two remaining student groups named under the educating

diverse student populations requirement were students who are educationally disadvantaged and students at risk of dropping out of school.

Legislative changes further specified that effective September 1, 2023, one-quarter of the 150 CPE hours required to renew a standard license must be directly related to the topics specified in code. Prior to September 1, 2023, the requirement had been that 'some' hours of CPE training had to directly relate to these topics (Texas Education Agency, 2022, p. 1). Texas did not provide specific state-developed trainings to meet these requirements but maintains an extensive list of pre-approved CPE providers that offer training on these topics (e.g., State Board for Educator Certification, accredited IHEs, regional educational service centers).

Virginia. In Virginia, all teachers seeking to renew a professional license must meet multiple statutory requirements. Two of these statutory requirements—special education training and dyslexia awareness training—pertained to the instruction of SWDs (dyslexia requirements are discussed in a later section). To satisfy the statutory requirement related to special education, the Virginia Department of Education (VDOE, 2022) required all teachers to complete two state-mandated online asynchronous modules every renewal cycle. The first module, *Meaningful IEP Online Training: How to Build Relationships and Ensure Results*, addressed the purpose of an IEP, roles and responsibilities of IEP team members, and components of an IEP. The second module, *Evidence-Based Instruction: Strategies and Inclusive Practice*, covered differentiated instruction, effective models of inclusive instruction, and evidence-based and high-leverage practices. Every teacher must complete both modules every renewal cycle.

Analysis of Requirements Related to Special Education or Students with Disabilities. Notably, all five states with specific content requirements related to special education or SWDs embedded in their renewal process had the same requirements for general education teachers and

special education teachers. In other words, all teachers renewing licenses in these states, regardless of their role, must complete renewal activities designed to strengthen their knowledge and skills related to SWDs. This requirement reinforced that general education and special education teachers shared responsibility for educating SWDs in inclusive settings.

Two of the states (Colorado and Massachusetts) provided minimal guidance as to required topics within continuing education training related to special education and SWDs, while the remaining three states (Florida, Texas, and Virginia) had specific statutory language about topics to be covered within trainings. States differed as to whether they provided state-approved trainings to satisfy renewal requirements with Florida, Massachusetts, and Virginia offering free, state-developed online trainings or modules to meet requirements. Colorado and Texas did not offer state-developed trainings to satisfy their renewal requirements.

States also differed in the percentage of their licensure renewal activities that must be devoted to special education or SWD-related content. For example, Massachusetts requires 10% of a teacher's license renewal activities be related to educating SWDs (15 of 150 professional development points), Colorado required 11% (10 of 90 hours), and Florida required 17% (one of six semester credit hours). Texas required 25% of renewal activities (37.5 of 150 hours) to be on various topics named in state statute but did not provide guidance as to how many of these hours should be devoted to educating SWDs. Finally, Virginia's requirement for special education training was separate from and in addition to the 180 professional development points required for license renewal.

Topic Area 2: Requirements Related to Reading Instruction

Six states required licensure renewal content related to reading instruction: Arkansas, Maryland, Minnesota, North Carolina, South Carolina, and Tennessee. Reading instruction

requirements in these states were inclusive of reading instruction for SWDs and other students needing intensive reading instruction. Table 4.3 summarizes the statutory or regulatory requirements for renewal content related to reading instruction.

Table 4.3

Statutory or Regulatory Requirements for Licensure Renewal Content Related to Reading Instruction

State	Statutory or Regulatory Requirements
AR	All teachers employed in any of the following teaching positions shall demonstrate proficiency in knowledge and practices of scientific reading instruction. (Arkansas Code § 6-17-429, 2022)
MD	(a) Twelve semester hours in reading theory and methodology for early childhood, elementary, or special education at that level taken at an IHE [institution of higher education or through [continuing professional development] CPDs, which shall include: (i) Processes and acquisition of reading skills; (ii) Best practices in reading instruction that include the cuing systems of graphophonics, semantics, and syntactics; (iii) Use of reading assessment data to improve instruction; and (iv) Materials for teaching reading in order to gain literary experience, perform a task, and read for information; (b) Six semester hours in reading methods for secondary education or special education at that level, taken at an IHE or through CPDs which shall include: (i) Types of reading; (ii) Use of reading assessment data to improve instruction; (iii) Skills in reading including cognitive strategies in reading; (iv) Reading instruction including reading aloud strategies and methods for diagnosing reading difficulties and making instructional modifications and accommodations for the student; (v) Strategies for intrinsic and extrinsic motivation for reading; (vi) Teaching students to learn from text by applying theories, strategies, and practices in daily classroom use including additional content in types of reading using authentic texts; (vii) Skills in reading including processing of multimedia information and strategies to connect reading with study skills; and (viii) Reading instruction that integrates content area goals with reading goals including strategies for students to communicate effectively orally and in writing about what they have read in content area texts. (Maryland Code § 13a.12.01.11, 2021)

Table 4.3 Continued

State	Statutory or Regulatory Requirements
MN	The Professional Educator Licensing and Standards Board must adopt rules that require all licensed teachers who are renewing a Tier 3 or Tier 4 teaching license…to include in the renewal requirements further reading preparation. (Minnesota Statute § 122A.187, 2022b) Comprehensive, scientifically based reading instruction" includes a program or collection of instructional practices that is based on valid, replicable evidence…the program or collection of practices must include, at a minimum, effective, balanced instruction in all five areas of reading: phonemic awareness, phonics, fluency, vocabulary development, and reading comprehension. (Minnesota Statute § 122A.06, 2022a)
NC	Literacy renewal credits shall include evidence-based assessment, diagnosis, and intervention strategies for students not demonstrating reading proficiency. Oral language, phonemic and phonological awareness, phonics, vocabulary, fluency, and comprehension shall be addressed in literacy-related activities leading to license renewal for elementary school teachers. (North Carolina General Statute § 115C-270.30, 2020)
SC	Classroom teachers use evidence-based reading instruction in prekindergarten through grade twelve, to include oral language, phonological awareness, phonics, fluency, vocabulary, and comprehension; administer and interpret valid and reliable assessments; analyze data to inform reading instruction; and provide evidence-based interventions as needed so that all students develop proficiency with literacy skills and comprehension. (South Carolina Code § 59-155-110, 2014)
TN	Teachers in kindergarten through grade five (K-5) must complete at least one (1) professional development course on foundational literacy skills instruction approved by the department. (Tennessee Code § 49-1-906, 2021)

Arkansas. The Arkansas State Legislature passed Act 1063, the Right to Read Act, in 2017. Per an amendment in 2021, by the beginning of the 2023–24 school year, all holders of K-6 elementary licenses and K-12 special education licenses must show evidence of ‘proficiency’ in scientific reading instruction practices. Holders of other types of licenses must demonstrate ‘awareness’ of these practices. The Arkansas Division of Elementary and Secondary Education (2023) created over 20 different pathways for educators to demonstrate awareness or proficiency in the science of reading. Each pathway consisted of a Phase I requirement, which outlined the

professional development needed (e.g., LETRS training, state-approved professional development sequence), and a Phase II requirement, which required educators to demonstrate their knowledge and skills in the science of reading. Phase II was typically satisfied through observation by a state-certified science of reading assessor or by achieving a passing score on the Pearson Foundation of Reading exam (Arkansas Division of Elementary and Secondary Education, 2023).

Maryland. Effective July 1998, Maryland educators must complete specific requirements related to the teaching of reading (Maryland Code § 13a.12.01.11, 2021). Some of these requirements might be fulfilled at the time of initial licensure, at which point a "reading summary" is issued along with the initial license outlining the specific requirements the teacher must fulfill during the renewal process. In Maryland, teachers seeking to renew a Standard Professional II certificate must submit evidence of credit earned within the last five-year validity period of the license, which might include required reading coursework from their reading summary (Maryland State Department of Education, 2020). Maryland teachers are required to take courses through a regionally accredited college or university or through Maryland-approved continuing professional development credits; however, teachers with early childhood, elementary, or elementary/middle school special education licenses might test out of the requirement for 12 semester hours of reading coursework by achieving a minimum score on the Praxis Teaching Elementary Reading exam.

Minnesota. Minnesota has a tiered system of licensure in which teachers hold one of four successively advanced tiers of licensure based on their preparation route, completion of an educator preparation program, and years of experience. To renew a standard Tier 3 license, educators must complete 75 clock hours of professional development in every three-year renewal

cycle. Effective June 2004, teachers must show evidence of professional development related to reading instruction during the renewal cycle. Guidance published by MPELSB (2020) further defined reading instruction as "instruction and practice in phonemic awareness, phonics and other word-recognition skills, and guided oral reading for beginning readers, as well as extensive silent reading, vocabulary instruction, instruction in comprehension, and instruction that fosters understanding and higher-order thinking for readers of all ages and proficiency levels" (p. 1). No additional guidance was given in statute or by MPELSB as to the minimum amount of professional development or required methods of delivery.

North Carolina. Effective February 2021, North Carolina educators must complete eight licensure renewal credits (equivalent to 80 clock hours of professional development) every five years as part of their licensure renewal cycle. Educators must fulfill differentiated content requirements for their renewal credits based on whether they held a grades K-5, grades 6-12, student services personnel, or administrator license. Only educators holding a grades K-5 license were required to complete renewal credits related to literacy with three credits devoted to subject area content, two credits to digital learning, and three credits to literacy (North Carolina Department of Public Instruction, 2023). No additional guidance pertaining to this requirement was given other than college coursework, locally administered in-service courses, classes, or workshops might count toward this requirement.

South Carolina. The Read to Succeed Act (R2S) Act was enacted in 2014 to ensure that all South Carolina students were reading on grade level and would graduate from high school college and career ready (South Carolina Department of Education, 2023). The Act required all South Carolina professional educator certificate holders to earn an R2S endorsement during their licensure renewal cycle.

There are two types of required endorsements: a R2S literacy teacher endorsement for teachers holding early childhood, elementary, English for speakers of other languages, or special education licenses; and a R2S literacy requirement endorsement for teachers holding middle school, high school, career and technical education, administration, instructional support personnel and other types of licenses (South Carolina Department of Education, 2023). The R2S literacy teacher endorsement required four approved courses in foundations of reading, instructional strategies, reading assessment, and reading and writing in content areas. Educators needing the R2S literacy teacher endorsement were required to complete two of the four courses by the end of their first license renewal cycle (2020-2024) and the remaining two courses by the end of their next license renewal cycle (2025-2029). Educators needing the R2S literacy requirement endorsement only had to complete one course in content area reading and writing but must do so within their first licensure renewal cycle, meaning all applicable teachers must have met this requirement by June 30, 2024. The South Carolina Department of Education (2023) maintains a list of approved R2S courses that meet the licensure renewal requirements in the four areas, many of which are offered through in-state colleges and universities.

Tennessee. In 2021, the Tennessee General Assembly passed the Tennessee Literacy Success Act, a wide-ranging piece of legislation intended to improve reading outcomes for students by the end of third grade (Tennessee Department of Education [TDOE], 2022). The Act included mandatory literacy trainings for teachers and leaders that would be implemented in two stages. For the first phase of implementation and by August 1, 2023, all teachers holding a license that authorized them to teach reading in grades K-5 must have complete at least one foundational literacy skills course. The TDOE (2022) offered a free online course in early reading training to satisfy this requirement. The early reading course covered five topics: (a)

Sounds First, a research-based approach to foundational literacy; (b) print concepts and phonological and phonemic awareness; (c) phonics and word recognition; (d) decoding, fluency, and the role of connected text; and (e) high-quality instructional materials. The early reading course required a passing score on a summative knowledge assessment (TDOE, 2022).

For the second phase of implementation after August 1, 2023, teachers holding an endorsement in 15 different areas related to early childhood education, elementary education, special education, English as a second language education, and instructional leadership must complete at least one foundational literacy skills course to renew their license. Documentation of successful completion of the course must be provided to TDOE (2022) at least one year prior to the expiration of the license.

Analysis of Requirements Related to Reading Instruction. Four of the six states that required licensure renewal content related to reading instruction did so because of ambitious, far-reaching legislation related to reading passed within the last decade (e.g., Arkansas Right to Read Act of 2017, North Carolina Excellent Public Schools Act of 2021, South Carolina Read to Succeed Act of 2014, Tennessee Literacy Success Act of 2021). The purpose of this legislation was to institute comprehensive reforms through measures such as state-mandated targets for reading proficiency, approved lists of reading intervention platforms, and mandated progress monitoring. In addition to these measures, each of these acts contained information about educator preparation requirements, in-service professional development supports, and licensure renewal requirements related to reading. The remaining two states (Maryland and Minnesota) had long-standing licensure renewal requirements related to reading that had been in statute since 1998 and 2004, respectively.

Another commonality across all states was the emphasis on scientifically-based, research-based, and/or evidence-based reading instruction. Although exact terminology differed across the states, most states had statutory language requiring training activities that covered at least some of the five essential components of reading (i.e., phonemic awareness, phonics, fluency, vocabulary, and comprehension) as defined by the National Reading Panel of 2000. Furthermore, several states had statutory language reinforcing the importance of explicit, direct instructional strategies for teaching reading.

Another notable commonality was that five of the six states differentiated reading content requirements within licensure renewal activities based on the type of license held by the educator. Generally, teachers holding licenses authorizing them to teach elementary grades have different reading content requirements than teachers holding licenses authorizing them to teach secondary grades. Elementary licenses tended to focus on basic reading instruction and secondary licenses tended to focus on literacy instruction within content areas. Requirements also differentiated for special education teachers and general education teachers with special education teachers generally having to complete renewal content related to basic literacy instruction.

Finally, only Tennessee required specific state-developed courses for teachers to meet licensure renewal requirements related to reading. The remaining five states required educators to take courses and/or trainings from state-approved providers. Several states encouraged educators to complete higher education coursework to meet this requirement (e.g., Maryland) while other states provided more flexibility as to the pathways educators could use to meet reading requirements (e.g., Arkansas).

Topic Area 3: Requirements Related to Dyslexia

Two states required licensure renewal content related to dyslexia: Texas and Virginia. Dyslexia policies in these states pertained to students identified as having disabilities and those who were not identified as having disabilities but might receive instruction related to dyslexia.

Texas. As discussed in a previous section, all Texas educators must complete continuing professional education credits related to educating SWDs with the stipulation that this must include information on educating students with dyslexia. However, virtually no guidance was given as to the depth or breadth of information related to dyslexia that should be covered within continuing education activities for most teachers. For "educators who teach students with dyslexia," the continuing education requirements were more prescriptive, indicating that renewal activities for these educators "must include training regarding new research and practices in educating students with dyslexia" (Texas Administrative Code § 232.11, 2021, p. 3).

To meet this requirement, the Texas Education Agency (2022), in collaboration with the Meadows Center at the University of Texas at Austin and Lehigh University, developed a free online dyslexia course. This course met both the dyslexia training requirements for educators seeking initial certification and the continuing professional education requirement for educators of students with dyslexia. Per statutory requirements, the information in the course included the characteristics of dyslexia, how to identify students with dyslexia, and multisensory instructional strategies for teaching students with dyslexia. The course consisted of four modules on (a) how dyslexia impacted student learning; (b) screening, identification, and schoolwide systems of support; (c) systematic, explicit, and evidence-based instructional strategies; and (d) the development of a personal action plan.

Virginia. In Virginia, all teachers were required to complete dyslexia awareness training with each five-year renewal cycle. This requirement was introduced via House Bill 842 in the 2016 session of the Virginia General Assembly. Per Virginia Administrative Code 8VAC20-23-110 (2023), the training must focus on "indicators of dyslexia" and "evidence-based interventions and accommodations for dyslexia" (pp. 1–2). This statutory requirement, which became effective July 1, 2017, required all individuals seeking relicensure to complete the requirements including instructional support personnel and administrators. Notably, dyslexia awareness training was also a requirement for initial licensure.

To meet this requirement, VDOE (2022) offered a free online dyslexia awareness training module, which counted toward five professional development points of the 270 professional development points required for renewal. House Bill 842 mandated that the Virginia Department of Education collaborate with the State Council of Higher Education for Virginia to develop the content. Topics covered in the training included (a) the definition of dyslexia per Virginia regulations, (b) indicators and characteristics of dyslexia, (c) screening for dyslexia, (d) the definition and content of structured literacy, (e) principles of quality instruction (i.e., explicit and direct, cumulative, systematic and sequential, diagnostic, multisensory), (f) accommodations, and (g) assistive technology.

Analysis of Requirements Related to Dyslexia. Texas and Virginia required licensure renewal content related to SWDs generally and students with dyslexia specifically. Both states offered a free online course that met the licensure renewal requirement related to dyslexia; however, completion of the state-developed course was required in Virginia and optional in Texas (other offerings could satisfy this requirement). Both state-developed courses covered similar content related to dyslexia stressing evidence-based, explicit, direct instruction.

Furthermore, both courses emphasized screening and identification procedures related to dyslexia. Virginia required every teacher to complete the same dyslexia training with every renewal cycle regardless of their role. In Texas, all teachers must receive some exposure to dyslexia content during continuing education required for license renewal, while teachers who worked directly with students with dyslexia had more intensive content requirements.

Topic Area 4: Requirements Related to Behavior

Two states required licensure renewal content on behavior-related topics: Colorado and Minnesota (note that this analysis did not include states that required general training related to mental health or suicide prevention).

Colorado. As discussed in a previous section, House Bill 20-1128, passed in March 2020, required all Colorado educators to complete professional development related to educating SWDs to renew their license. Colorado House Bill 20-1312, passed in the same legislative session, added to these renewal requirements by mandating "behavioral health training that is culturally responsive and trauma- and evidence-informed" aimed at "increasing awareness and knowledge of behavioral health concerns, responses, and strategies" (Colorado General Assembly, 2020, p. 2). Teachers holding professional licenses were required to complete a minimum of 10 contact hours of the 90 hours required for licensure renewal with a minimum of one contact hour in behavioral health and one contact hour in educating SWDs (CDE, 2023). This requirement is effective June 30, 2025 and is a recurring requirement for licensure renewal.

Minnesota. In addition to demonstrating evidence of professional development related to reading during the licensure renewal process, Minnesota educators also had to complete professional development related to positive behavior interventions. Minnesota Statute stated that renewal content must include "further preparation in the areas of using positive behavior

interventions and in accommodating, modifying, and adapting curricula, materials, and strategies to appropriately meet the needs of individual students" (Minnesota Statute § 122A.187, 2022b, p. 1). No additional guidance was provided about this requirement.

Analysis of Requirements Related to Behavior. Colorado and Minnesota required a minimal amount of training on behavior-related topics as part of their licensure renewal requirements. Colorado required 10 contact hours on educating SWDs and behavioral health for licensure renewal with a minimum of one contact hour on each topic. Minnesota required training on positive behavior interventions as part of licensure renewal but did not provide guidance about the amount of training. Neither state provided substantive information about the topics that must be covered as part of these behavior-related training requirements.

Topic Area 5: Other Requirements

Two states had various other requirements related to educating SWDs not previously covered: Alaska and Washington.

Alaska. Separate from the six renewal credits required to maintain a professional license, all teachers must complete a sequence of four mandatory trainings every five years. Three of the trainings were on topics not relevant to this study. The fourth training was on prenatal alcohol and drug-related disabilities. Citing the pervasiveness of substance abuse in Alaska as the rationale for mandatory training, the Alaska Department of Education and Early Development (n.d.) offered a state-approved eLearning course to fulfill this requirement. Per state statute, the training covered the medical and psychological characteristics of fetal alcohol spectrum disorders, the importance of early diagnosis and intervention, and strategies to improve the learning and behavior of students with these disorders (Alaska Statute §14.20.680, 2015).

Washington. Washington state required educators to provide evidence of 15 clock hours of professional development focused on "equity-based school practices" as part of their licensure renewal cycle (Washington State Professional Educator Standards Board, 2023, para. 1). This requirement was intended to promote diversity, equity, and inclusion principles with a specific focus on meeting the individualized needs of SWDs and other learners. Professional development on equity-based school practices must be provided by an organization approved by the state legislature.

Summary of Research Question 1
Findings

State teacher licensure renewal policies have changed little since Tooley and White's 2018 scan. This might be due in part to the COVID-19 pandemic but might also reflect the slow pace of policy change. In an attempt not to overwhelm already burdened teachers, several states have delayed or extended implementation timelines for new licensure renewal requirements (e.g., Arkansas and Colorado) or temporarily eliminated renewal requirements altogether (e.g., Alabama and Oregon). Notable state relicensure policy changes also occurred in Hawaii, which now renews licenses solely based on verification of successful teaching experience via performance evaluation ratings. Conversely, Rhode Island used to rely solely on summative evaluation performance for licensure renewal but has recently shifted to a continuing education-based approach. Although states might have slightly shifted options to meet or partially meet renewal requirements, the overall landscape of teacher relicensure looks much as it did in 2018.

Continuing education remains the most commonly utilized approach for licensure renewal with 42 states currently requiring or offering continuing education as an option to renew a licensure. Accounting for Alabama and Oregon, which would likely return to a continuing education-based approach to renewal after ending their temporary suspension of licensure

renewal requirements due to COVID, this brought the total to 44 states, which was the same number of states that had a continuing education-based approach at the time of the last national scan (Tooley & White, 2018). Because all but a handful of states required or offered continuing education as a renewal option, the quality of continuing education is of special concern to the field.

Another key finding from the scan was there were relatively few differences between licensure renewal requirements for special education teachers and general education teachers. When specific content requirements were named in state policy (e.g., reading, dyslexia, behavior), they were generally required of all teachers or at least broad groups of teachers. Additionally, the scan did not find evidence of differences in relicensure requirements for teachers who participated in traditional educator preparation programs versus alternative preparation programs, nor did it find differences in relicensure requirements across types of special education endorsements (e.g., early childhood).

Within the specifically-named renewal content requirements related to SWDs, generic content related to special education and educating SWDs was the most common requirement. Reading instruction was the next most common requirement, followed by dyslexia and behavior. In conjunction with these requirements, many state policies contained language related to research and evidence-based practices, direct and explicit instruction, and the science of reading. Many states that developed their own trainings aligned with these requirements, which further reinforced effective instructional practices for SWDs.

Research Question 2 Findings

Q2 How do states with high-performing SWDs relicense teachers?

I defined states with high-performing SWDs via three criteria: NAEP fourth-grade reading scores for SWDs, NAEP fourth-grade math scores for SWDs, and the proportion of SWDs served in general education settings for 80% or more of the school day. For the NAEP scores, I limited the sample to SWDs whose teacher held a valid standard or regular license, thus ensuring the teacher was impacted by their state's licensure renewal policies. To identify the group of high-performing states, I ranked states by their performance on the three criteria and selected states that ranked in the top 10 for at least two criteria but no lower than the top 20 for the third. After identifying the group of states with high-performing SWDs, I used data from the state scan performed for Q1 to look for common themes across their licensure renewal policies.

To address Q2 results, I summarized licensure policies in states with high-performing SWDs as defined through their performance in the 2021-22 school year. Next, I expanded this analysis to see if results differed when examining states that had consistently high-performing students with disabilities over time as defined by their average NAEP and LRE performance over the last decade. I concluded with a summary of findings.

Analysis of the 2021-22 School Year

Using data from the 2022 administration of the NAEP and 2021-22 OSEP (2022) SPP/APR Indicator 5a LRE data, I ranked states according to their performance and applied the selection criteria previously described. Four states met criteria: Florida, Indiana, Mississippi, and Wyoming. Notably, four additional states met the condition of ranking in the top 10 for at least two of the criteria but failed to meet the condition of ranking no lower than the top 20 on the

third (Massachusetts, Minnesota, and New Jersey missed the top 20 for their LRE score and Nebraska missed for its reading score).

Florida, Indiana, Mississippi, and Wyoming utilized a range of licensure renewal approaches. Florida was a continuing education only state, requiring six semester hours of college credit or its equivalency every five-year renewal cycle. National Board certification might be used to meet this requirement and recent passing scores on the Florida subject area exam corresponding with the area of licensure to be renewed might be counted as the equivalent of three semester hours of credit. Indiana offered three pathways to licensure renewal: take six semester hours of college coursework, earn National Board certification, or complete a professional growth plan identifying 90 clock hours of approved professional development activities every five-year renewal cycle. Mississippi also offered multiple pathways to licensure: either requiring six semester hours of college coursework, 10 continuing education units, or National Board certification to renew a standard license on five-year cycles. Finally, Wyoming, a continuing education only state, required five renewal credits corresponding to 75 clock hours of professional development activities every five years, which might include National Board certification.

The first common element across the licensure renewal policies in these states was the reliance on continuing education as the primary mechanism for renewal. Even Indiana and Mississippi, which provided multiple pathways to licensure renewal, offered options that were primarily reliant on college coursework or professional development. This was not a particularly remarkable finding given that 42 states required or offered some kind of continuing education for license.

Another common element was none of these four states required performance-based licensure renewal. National Board certification, which required a performance-based component, was offered as an option to renew or option to meet continuing education requirements in all four states; however, without individual state data, it was impossible to know how many teachers utilized this option. Only Indiana required teachers to develop and carry out an individual professional development and growth plan to renew their license, but it was unclear whether this plan required evidence of student growth.

Beyond a general reliance on continuing education-based licensure renewal over performance-based renewal, there did not appear to be any other noteworthy commonalities in the licensure renewal policies across these states. Although these states were identified for having high-performing SWDs, only Florida had any special requirements related to SWDs built into the renewal process. Florida teachers must complete at least one of the six required semester hours per renewal cycle (or an equivalent amount of professional development) on teaching SWDs. There did not appear to be any other special circumstances or requirements in the licensure policies in common across these states.

Analysis of Average Performance from 2013–2022

The previous analysis for Q2 used NAEP and OSEP (2022) LRE used data from the 2021-22 school year, which were the most recent data available and thus provided a snapshot of SWDs' achievement that was closest in time to when I conducted the state policy scan. However, given the continued disruption caused by the COVID-19 pandemic into the 2021-22 school year—most particularly the disruption to the normal NAEP testing schedule—I conducted additional analysis to investigate whether a state's average performance over the last decade on

the three criteria (fourth-grade reading, fourth-grade math, and LRE) would yield a different group of states to analyze for Q2.

To identify a group of states with high-performing SWDs based on their performance over time, I averaged fourth-grade reading and math scores from the past five administrations of the NAEP (2013, 2015, 2017, 2019, and 2022) and LRE data from the past eight years of OSEP (2022) SPP/APRs (2014-15 through 2021-22). Using the same procedure described earlier in this section, I selected states that ranked in the top 10 for at least two criteria but no lower than the top 20 for the third.

Repeating the identification procedures with NAEP and LRE average performance over the last decade yielded a group of five states: Florida, Indiana, Nebraska, New Hampshire, and Wyoming. Three of the states were the same as the 2021-22 analysis (Florida, Indiana, and Wyoming) with two states added to the analysis (Nebraska and New Hampshire) and one state dropped from analysis (Mississippi).

Nebraska and New Hampshire had slightly different requirements for relicensure than the states previously discussed. Nebraska offered two pathways to relicensure: submitting verification of one year of teaching experience or completing six graduate-level semester hours of coursework within the past five-year renewal cycle. New Hampshire, which operated on three-year renewal cycles, required teachers to have an individual professional development plan that outlined a minimum of 75 continuing education hours, 45 of which must be job-embedded or formal professional development and 30 must relate to the area of endorsement.

Even with a new group of high-performing states, the common elements across their licensure renewal policies remained largely unchanged. All five states still relied heavily on continuing education as the primary mechanism for licensure renewal. Nebraska was the only

state to allow something other than continuing education as a standalone renewal option, which was providing evidence of one year of teaching experience.

None of the five states offered performance-based renewal options. New Hampshire required teachers to have a professional development plan for renewal (as opposed to Indiana, which allowed a professional growth plan as one of three renewal options). However, there did not appear to be any student growth component to this professional development plan. Neither Nebraska nor New Hampshire had any special relicensure requirements related to SWDs, meaning that Florida was still the only state in the expanded group with such a requirement.

Summary of Research Question 2 Findings

The only notable commonality in the licensure policies of states identified as having high-performing SWDs was the universal presence of continuing education-based licensure renewal approaches and the absence of performance-based renewal approaches. This held true whether identifying states with high-performing SWDs based on their NAEP and LRE performance from the 2021-22 school year (Florida, Indiana, Mississippi, and Wyoming) or identifying states based on their average NAEP and LRE performance over the last decade (Florida, Indiana, Nebraska, New Hampshire, and Wyoming). However, this was not a particularly surprising or consequential finding given that 42 states had some type of continuing-education based renewal approach while only three had a performance-based renewal approach. There did not appear to be any other noteworthy commonalities in the licensure renewal policies across high-performing states.

The most notable finding for Q2 was only four states met the original criterion to be identified as a high-performing states for SWDs based on their NAEP reading, NAEP math, and LRE performance in the 2021–2022 school year. This group of states—Florida, Indiana,

Mississippi, and Wyoming—did not include several states that had traditionally been recognized for the achievement of their SWDs. The original criterion defined high-performing states as those ranking in the top 10 on at least two criteria but no lower than the top 20 on the third. These criteria, although ideal for generating a small group of states to analyze Q2, were not inclusive enough to capture a sufficient sample size to analyze for Q3. For example, Florida, Indiana, Massachusetts, Minnesota, New Jersey, and Wyoming ranked in the top 10 states for both fourth-grade reading and fourth-grade math. However, three of these states did not meet the original criterion because they ranked lower than the top 20 for LRE (Massachusetts, Minnesota, and New Jersey). Similarly, Nebraska was in the top 10 for LRE and math scores but did not meet the original criterion because it missed the top 20 for reading.

Because of the prohibitively small sample size of high-performing states identified via the original criteria, for the purposes of Q3 analysis, I chose to expand the criteria for identifying high-performing states to include any state ranking in the top 10 on any of the three criteria in the 2021–2022 school year. Broadening the high-performing state identification criterion based on Q2 findings expanded the final sample to 19 high-performing states for SWDs, which was the sample used in Q3 analysis. A list of the high-performing states is located in Appendix Table B.4.

Research Question 3 Findings

Q3 Are state licensure renewal requirements related to student achievement?

To address this research question, I conducted a four-step analysis to investigate various aspects of the relationship between the rigor of state licensure renewal policies and academic achievement. In step one, I conducted two MANOVAs to assess the effect of licensure renewal rigor on the academic achievement of fourth- and eighth-grade SWDs, respectively, on the 2022 administration of the NAEP. In step two, I conducted four one-way ANCOVAs to assess the

effect of licensure renewal rigor on fourth- and eighth-grade reading and math scores for SWDs, respectively, on the 2022 administration of the NAEP while adding a covariate to control for prior achievement on the NAEP. In step three, I conducted four two-way ANCOVAs to assess the effects of state-level licensure rigor and SWDs' high-performing status on 2022 fourth- and eighth-grade reading and math NAEP scores for SWDs while controlling for prior achievement on the NAEP. In step four, I separately examined the three indicators used to calculate overall scores for state licensure renewal rigor to assess their individual relationships to student academic achievement.

Licensure Rigor Scores and Categories

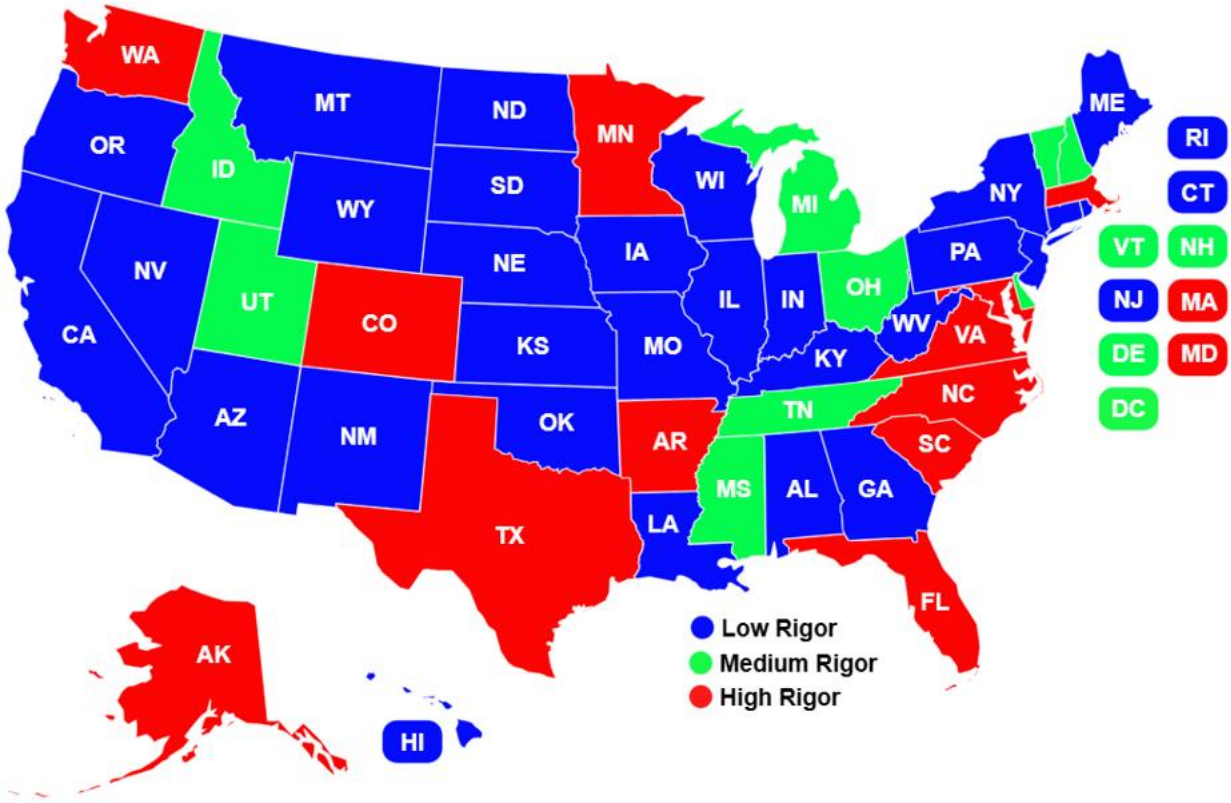
Research question 3 used rigor of state licensure renewal policies as an independent variable. The methodology section described how I used information from the comprehensive state scan to score three licensure renewal rigor indicators, calculate an overall licensure renewal rigor score, and assign states to low, medium, and high rigor categories based on the overall score. Appendix Table B.4 presents the three indicator scores, the overall rigor score, and the rigor category for each state.

As shown in Figure 4.2, 29 states were categorized as having low rigor licensure renewal policies, 10 states as having medium rigor policies, and 12 states as having high rigor policies. Effectively, states in the low tier for licensure renewal rigor had no licensure renewal requirements related to SWDs for any teachers. States in the medium rigor tier had content requirements related to SWDs for special education teachers but not for general education teachers (Tennessee was the only exception, having no requirements for special education teachers but requirements for some general education teachers). States in the high rigor tier had

content requirements related to SWDs for special education teachers and some or all general education teachers.

Figure 4.2

Licensure Rigor Category by State



Step 1: Multivariate Analyses of Variance

For the first step of the analysis, I performed one-way MANOVAs to determine the relationship between the rigor of states' licensure renewal policies and the academic achievement of SWDs as measured by their performance on the 2022 administration of the NAEP. I conducted separate MANOVAs for fourth-grade academic achievement and eighth-grade academic achievement. The two dependent measures for each grade level were the 2022 scaled

score in reading and 2022 scaled score in math for SWDs whose teachers held a standard or professional credential. Rigor of state licensure renewal policies was categorized by three levels: low, medium, and high.

Before proceeding with the MANOVAs, I conducted testing to ensure key assumptions were met. For the fourth-grade analysis, visual inspection of a boxplot revealed the presence of two univariate outliers associated with Hawaii. On the 2022 fourth-grade administration of the NAEP, Hawaii was the second lowest scoring state in reading (161) and the lowest scoring state in math (194). However, I chose to keep Hawaii's scores in the dataset as later analysis demonstrated that removing these outliers did not affect the final result of the MANOVA. Fourth-grade reading and math scores were normally distributed for each of the three levels of licensure rigor as assessed by Shapiro-Wilk's test ($p > .05$). No multicollinearity was assessed by Pearson correlation ($r = .707$, $p < .001$). There was a linear relationship between fourth-grade reading and math scores for each level of licensure rigor as assessed by visual inspection of a scatterplot. There were no multivariate outliers in the data as assessed by comparing Mahalanobis distance values against a $\chi 2$ distribution with two degrees of freedom (equal to the number of dependent variables) ($p > .001$). There was homogeneity of variance-covariances matrices as assessed by Box's test of equality of covariance matrices ($p= .213$).

For the eighth-grade analysis, preliminary assumption checking revealed the presence of multiple univariate outliers but only for reading scores. There were three outlying reading scores for states in the low level of rigor (Alabama = 208; West Virginia = 208; New Jersey = 238) and two outlying reading scores for states in the medium level of rigor (Utah = 228; New Hampshire = 230). Like the fourth-grade analysis, a comparison of the final results with outliers included and excluded for eighth grade showed that including the outliers had no effect on the final

MANOVA result, so I kept the outliers in the dataset. Eighth-grade reading and math scores were normally distributed for each of the three levels of licensure rigor as assessed by Shapiro-Wilk's test ($p > .05$). No multicollinearity was assessed by Pearson correlation ($r = .618$, $p < .001$). There was a linear relationship between eighth-grade reading and math scores for each level of licensure rigor as assessed by visual inspection of a scatterplot. No multivariate outliers in the data were assessed by comparing Mahalanobis distance values against a $\chi 2$ distribution with two degrees of freedom (equal to the number of dependent variables) ($p > .001$). Homogeneity of variance-covariances matrices was assessed by Box's test of equality of covariance matrices ($p = .320$).

Table 4.4 shows means and standard deviations for fourth- and eighth-grade reading and math scores at each of the three levels of licensure renewal rigor.

Table 4.4

Multivariate Analyses of Variance: Means and Standard Deviations

Rigor Level	NAEP Fourth Grade					NAEP Eighth Grade			
		Reading		Math		Reading		Math	
	n	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Low	28	177.96	6.29	208.46	5.94	221.82	6.70	237.96	5.57
Medium	10	176.20	9.47	205.20	6.61	222.90	3.67	236.00	5.70
High	12	179.83	9.84	208.75	7.07	223.50	8.01	238.92	7.94
Total	50	178.06	7.84	207.88	6.37	222.44	6.49	237.80	6.18

Note. New Mexico was excluded from analysis for not meeting reporting standards for the 2022 NAEP administration.

For fourth-grade reading scores, states with a high level of licensure renewal rigor had the highest average reading scores ($M = 179.83$, $SD = 9.84$) followed by low rigor states ($M =$

177.96, *SD* = 6.29) and medium rigor states (*M* = 176.20, *SD* = 9.47). Fourth-grade math scores followed the same pattern: states with a high level of licensure renewal rigor (*M* = 208.75, *SD* = 7.07) had the highest average math scores followed by low rigor states (*M* = 208.46, *SD* = 5.94) and medium rigor states (*M* = 205.20, *SD* = 6.61). However, the difference between the licensure rigor levels on the combined dependent variables for fourth-grade reading and math achievement was not statistically significant, $F(4, 92) = .739$, $p = .568$, Wilks' $\Lambda = .939$, partial $\eta 2 = .031$.

For eighth-grade reading scores, states with a high level of licensure renewal rigor had the highest average reading scores (*M* = 223.50, *SD* = 8.01) followed by medium rigor states (*M* = 222.90, *SD* = 3.67) and low rigor states (*M* = 221.82, *SD* = 6.70). For eighth-grade math scores, states with a high level of licensure renewal rigor still had the highest average math scores (*M* = 238.92, *SD* = 7.94) followed by low rigor states (*M* = 237.96, *SD* = 5.57) and medium rigor states (*M* = 236.00, *SD* = 5.70). The difference between the licensure rigor levels on the combined dependent variables for eighth-grade reading and math achievement was not statistically significant, $F(4, 92) = .704$, $p = .591$, Wilks' $\Lambda = .941$, partial $\eta 2 = .030$.

In summary, neither the fourth-grade level nor eighth-grade level MANOVA analyses revealed a statistically significant relationship between states' licensure renewal rigor levels and combined reading and math scores for SWDs on the 2022 administration of the NAEP.

Step 2: One-Way Analyses of Covariance

For the second step of the analysis, I performed one-way ANCOVAs to determine the relationship between the rigor of states' licensure renewal policies and the academic achievement of SWDs when controlling for their prior achievement on the NAEP. I conducted four separate one-way ANCOVAs for fourth-grade reading, fourth-grade math, eighth-grade reading, and eighth-grade math using 2022 NAEP scores from SWDs whose teachers held a standard or

professional credential as the dependent measures. The independent variable, rigor of state licensure renewal policies, was categorized into low, medium, and high levels. The covariate for prior achievement was calculated for each grade and subject area by averaging the scores from the previous four administrations of the NAEP in 2013, 2015, 2017, and 2019.

I conducted preliminary testing to ensure key assumptions for ANCOVA were met. Visual inspection of scatterplots confirmed the assumption of linear relationships between the dependent variables (2022 NAEP scores) and covariates (average prior NAEP scores) for each level of the independent variable (low, medium, and high licensure rigor) across the four sets of analyses. Visual inspection of scatterplots of the dependent variable and covariate relationships between the three levels did not reveal outliers or unusual patterns, confirming the homogeneity of regression slopes assumption across the four sets of analyses. Standardized residuals for the 2022 NAEP scores were normally distributed for each level of licensure rigor across the four sets of analyses as assessed by Shapiro-Wilk's test ($p > .05$) with the lone exception of the distribution of standardized residuals for eighth-grade reading scores at the high level of licensure rigor ($p = .048$). Because this was a weak violation of normality and one-way ANCOVAs are fairly robust to deviations from normality, I continued analysis without further action. All four sets of analyses met the assumption of homoscedasticity as assessed by visual inspection of the standardized residuals plotted against the predicted values for the 2022 NAEP scores. Fourth-grade math, eighth-grade reading, and eighth-grade math scores met the assumption of homogeneity of variances as assessed by Levene's test of equality of error variances ($p > .05$); however, fourth-grade reading scores violated the assumption ($p = .006$). There were no outliers across the four sets of analyses as assessed by examining standardized residuals for values greater than three standard deviations.

Table 4.5 presents the results from the four one-way ANCOVAs. After adjusting for prior achievement on the NAEP, there were no statistically significant differences between licensure rigor levels and 2022 NAEP scores for any grade level and subject combination. In summary, there was no relationship between licensure rigor and student performance on the 2022 administration of the NAEP after controlling for prior NAEP scores.

Table 4.5

Results of One-Way Analyses of Covariance

	Df	*F*	*p* value	partial η2
Grade 4 Reading	2	.354	.704	.015
Grade 4 Math	2	1.555	.222	.063
Grade 8 Reading	2	1.401	.257	.057
Grade 8 Math	2	.252	.778	.011

Step 3: Two-Way Analyses of Covariance

For the third step of the analysis, I performed two-way ANCOVAs to determine the effects of states' licensure renewal rigor and SWD performance on the academic achievement of SWDs when controlling for their prior achievement on the NAEP. I conducted four separate two-way ANCOVAs for fourth-grade reading, fourth-grade math, eighth-grade reading, and eighth-grade math using 2022 NAEP scores from SWDs whose teachers held a standard or professional credential as the dependent measures. The first independent variable, states' licensure renewal rigor, was categorized into low, medium, and high levels. The second independent variable, states' SWD performance, was categorized in low and high levels. Keeping the same procedures

from the step 2 analysis, the covariate for prior achievement was calculated for each grade and subject area by averaging the scores from the previous four administrations of the NAEP.

I conducted testing to ensure that ANCOVA assumptions were met. A visual inspection of scatterplots confirmed the assumption of linear relationships between the dependent variables (2022 NAEP scores) and covariates (average prior NAEP scores) for every combination of the two independent variables (licensure renewal rigor and SWD performance) across the four sets of analyses. Comparisons between the two-way ANCOVA model with and without interaction terms confirmed homogeneity of regression slopes for fourth-grade reading, fourth-grade math, and eighth-grade math; however, eighth-grade reading scores violated the assumption, [$F(2, 44) = 3.338$, $p = .045$]. Further inspection of scatterplots of the dependent variable and covariate relationships between the three levels did not reveal any unusual outliers. The homoscedasticity assumption was confirmed via a visual inspection of the studentized residuals plotted against the predicted values for each combination of groups of the two independent variables across the four sets of analyses. Homogeneity of variances was assessed by Levene's test of equality of error variances across the four sets of analyses ($p > .05$). Examination of studentized residuals for values greater than three standard deviations confirmed no outliers were present in the data and examination of leverage values and Cook’s distance confirmed no leverage or influential points. The assumption of normality was assessed via Shapiro-Wilk's test ($p > .05$). Studentized residuals were normally distributed for all combinations of the independent variables across the four sets of analyses with three exceptions (fourth-grade reading high rigor level and low SWD performance level, $p = .008$; fourth-grade math medium rigor level and high SWD performance level, $p = .047$; and eighth-grade reading medium rigor level and high SWD performance level, p

= .035). Because ANCOVAs are generally robust to deviations from normality and these violations were limited in nature, I continued analysis without further action.

Table 4.6 shows means and standard deviations for fourth- and eighth-grade reading and math NAEP scores for each combination of groups for licensure renewal rigor (low, medium, and high) and SWD performance (low and high).

Table 4.6

Two-Way Analyses of Covariance: Means and Standard Deviations

Rigor	SWD Perf.	NAEP Fourth Grade					NAEP Eighth Grade			
			Reading		Math		Reading		Math	
		n	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Low	Low	18	175.50	5.65	206.17	5.49	222.06	5.72	237.33	5.72
	High	10	182.40	4.93	212.60	4.40	221.40	8.51	239.10	5.38
	Total	28	177.96	6.29	208.46	5.94	221.82	6.70	237.96	5.57
Medium	Low	7	173.86	8.47	204.29	6.70	222.29	3.90	234.00	5.13
	High	3	181.67	11.15	207.33	7.23	224.33	3.22	240.67	4.51
	Total	10	176.20	9.47	205.20	6.61	222.90	3.67	236.00	5.67
High	Low	6	172.33	5.50	203.50	4.46	219.67	5.24	236.50	6.95
	High	6	187.33	6.92	214.00	4.90	227.33	8.85	241.33	8.73
	Total	12	179.83	9.84	208.75	7.07	223.50	8.01	238.92	7.94
Total	Low	31	174.52	6.26	205.23	5.54	221.65	5.21	236.42	5.81
	High	19	183.84	6.73	212.21	5.22	223.74	8.16	240.05	6.25
	Total	50	178.06	7.84	207.88	6.37	222.44	6.49	237.80	6.18

Note. New Mexico excluded from analysis for not meeting reporting standards for the 2022 NAEP administration. SWD = students with disabilities. Perf. = performance.

There was no statistically significant two-way interaction between licensure renewal rigor level and performance level of SWDs when controlling for prior achievement for fourth-grade reading, $F(2, 43)= 1.609$, $p = .212$, partial $\eta2 = .070$, or fourth-grade math, $F(2, 43) = .841$, $p = .438$, partial $\eta2 = .038$. Therefore, I analyzed main effects for licensure renewal rigor and SWD performance separately. There were statistically significant main effects for performance level of SWDs on adjusted marginal mean fourth-grade reading scores ($p < .001$) and fourth-grade math scores ($p = 0.27$). This result was not especially surprising because of the way in which SWDs performance level was calculated for states (three criteria: NAEP reading achievement, NAEP math achievement, and time spent in the general education setting). However, there were no statistically significant main effects for licensure rigor level on adjusted marginal means in either fourth-grade reading or math.

For eighth-grade reading, there was no statistically significant two-way interaction between licensure renewal rigor level and performance level of SWDs while controlling for prior achievement, $F(2, 43) = 1.766$, $p = .183$, partial $\eta2 = .076$. Follow-up analysis revealed no statistically significant main effects for performance level of SWDs or licensure rigor level on adjusted marginal mean eighth-grade reading scores.

For eighth-grade math, there was a statistically significant two-way interaction between licensure renewal rigor level and performance level of SWDs while controlling for prior achievement, $F(2, 43) = 4.008$, $p = .025$, partial $\eta2 = .157$. Therefore, I analyzed simple main effects for licensure rigor with Bonferroni adjustments.

With a Bonferroni adjustment setting statistical significance at the $p < .0167$ level (corresponding with three simple main effects for three levels of licensure renewal rigor), the effect of SWD performance level at the medium licensure renewal rigor level was statistically

significant, $F(1, 43) = 9.813$, $p = .003$, partial $\eta 2 = .186$. However, the effect of SWD performance level was not statistically significant at the low rigor level, $F(1, 43) = .001$, $p = .979$, partial $\eta 2 = .000$, or the high rigor level, $F(1, 43) = .008$, $p = .930$, partial $\eta 2 = .000$. With a Bonferroni adjustment setting statistical significance at the $p < .025$ level (corresponding with two simple main effects for two levels of SWDs performance), the effect of licensure rigor level was not statistically significant at the low SWD performance level, $F(2, 43) = 2.264$, $p = .116$, partial $\eta 2 = .095$, or the high SWD performance level, [$F(2, 43) = 1.973$, $p = .151$, partial $\eta 2 = .084$.

In summary, the only statistically significant two-way interaction effect between licensure renewal rigor and achievement occurred for eighth-grade math scores. Follow-up analysis of simple main effects for eighth-grade math scores showed only one statistically significant main effect—the effect of SWD performance level at the medium level of licensure renewal rigor.

Step 4: Individual Indicator Analysis

For the fourth step of the analysis, I separately examined the three indicators used to calculate the overall licensure rigor score to assess their relationship with the academic achievement of SWDs:

- Indicator 1: Renewal content requirements related to SWDs.
- Indicator 2: Special education teacher renewal requirements related to SWDs.
- Indicator 3: General education teacher renewal requirements related to SWDs.

Indicator 1: Renewal Content Requirements Related to Students with Disabilities

Indicator 1 measured the presence or absence of content renewal requirements related to SWDs. Indicator 1 was scored as follows:

- 0 = State policy had no specifically named content requirements related to the education of SWDs.
- 1 = State policy specifically named content requirements related to the education of SWDs (e.g., science of reading, behavior supports).

As is presented in Appendix Table B.4, 38 states had no specifically named content requirements related to the education of SWDs (score of 0) while 13 states had specifically named content requirements (score of 1).

For indicator 1, I performed a Hotelling's T^2 analysis to determine the relationship between the presence or absence of content renewal requirements related to SWDs and the academic achievement of SWDs. Hotelling's T^2 is a special type of MANOVA analysis in which the independent variable has two groups, in this case, states that had content renewal requirements related to SWDs and states that did not have content renewal requirements related to SWDs. This analysis was essentially a variation of the one-way MANOVA analyses performed in step 1 but instead of categorizing licensure renewal rigor by three levels (low, medium, or high), rigor was categorized by two levels (low or high corresponding with the absence or presence of content renewal requirements related to SWDs). I conducted separate analyses for fourth-grade and eighth-grade academic achievement and used 2022 scaled scores in reading and math for SWDs whose teachers held a standard or professional credential as the combined dependent measures for each grade level.

Before conducting the Hotelling's T^2 analysis, I performed testing to ensure key assumptions were met. For the fourth-grade analysis, visual inspection of scatterplots confirmed a linear relationship between fourth-grade reading and math scores at both levels of indicator 1. There was no multicollinearity, as assessed by Pearson correlation, below a 0.9 threshold for

states with requirements related to SWDs (r = .854, p < .001) and without requirements (r = .634, p < .001). I visually inspected boxplots to check for univariate outliers, which are outlying values of a dependent variable within each group of the independent variable. A visual inspection of the scatterplot for states without content requirements related to SWDs revealed the presence of two univariate outliers associated with fourth-grade reading scores in Hawaii (161) and Idaho (158), which were the two lowest scoring states. There were no univariate outliers for states with content requirements for SWDs. I chose to keep all outliers in the dataset because a subsequent analysis demonstrated that removing them had no effect on the final result. There were no multivariate outliers in the data as assessed by comparing Mahalanobis distance values against a $\chi 2$ distribution with two degrees of freedom (equal to the number of dependent variables) and an alpha level of .001 (p > .001). Fourth-grade reading and math scores were normally distributed for states with and without content requirements related to SWDs, as assessed by Shapiro-Wilk's test (p > .05). There was homogeneity of variance-covariances matrices, as assessed by Box's test of equality of covariance matrices (p = .411).

For preliminary assumption testing for the eighth-grade analysis, visual inspection of scatterplots confirmed a linear relationship between eighth-grade reading and math scores at both levels of indicator 1. There was no multicollinearity, as assessed by Pearson correlation, below a 0.9 threshold for states with requirements related to SWDs (r = .799, p < .001) and without requirements (r = .511, p < .001). Visual inspection of boxplots for univariate outliers within each group of the independent variable showed three outliers for reading scores in states that did not have content requirements related to SWDs (Alabama = 208, West Virginia = 208, New Jersey = 238). For states that had content requirements related to SWDs, there was one outlier in reading scores (Massachusetts = 240). Once again, I chose to keep these outliers in the dataset as

later analysis demonstrated that removing them had no effect on the final result. There were no multivariate outliers as assessed by comparing Mahalanobis distance ($p > .001$), and eighth-grade reading and math scores were normally distributed as assessed by Shapiro-Wilk's test ($p > .05$). There was homogeneity of variance-covariances matrices as assessed by Box's test of equality of covariance matrices ($p = .405$).

Table 4.7 shows means and standard deviations for fourth- and eighth-grade reading and math scores for states with and without licensure renewal content requirements related to SWDs as measured via indicator 1.

Table 4.7

Indicator 1: Means and Standard Deviations

Indicator 1	NAEP Fourth Grade					NAEP Eighth Grade			
		Reading		Math		Reading		Math	
	n	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
No reqs.	37	177.38	7.22	207.49	6.25	222.14	6.10	237.49	5.67
Reqs. SWDs	13	180.00	9.44	209.00	6.83	223.31	7.70	238.69	7.64
Total	50	178.06	7.84	207.88	6.37	222.44	6.49	237.80	6.18

Note. New Mexico excluded from analysis for not meeting reporting standards for the 2022 NAEP administration. Reqs. = requirements. SWDs = students with disabilities.

For fourth-grade reading, states that had content requirements related to SWDs scored higher than states without content requirements related to SWDs ($M = 180.00$, $SD = 9.44$ and $M = 177.38$, $SD = 7.22$, respectively). The same was true for fourth-grade math: states that had content requirements related to SWDs scored higher than states that did not have content requirements related to SWDs ($M = 209.00$, $SD = 6.83$ and $M = 207.49$, $SD = 6.25$, respectively). However, the difference between states with and without licensure renewal content requirements

related to SWDs on the combined dependent variables for fourth-grade reading and math scores was not statistically significant, $F(2, 47) = .527$, $p = .594$, Wilks' $\Lambda = .978$, partial $\eta^2 = .022$.

Results for the eighth-grade analysis were similar. In reading, states that had content requirements related to SWDs scored higher than states that did not have content requirements related to SWDs ($M = 223.31$, $SD = 7.70$ and $M = 222.14$, $SD = 6.10$, respectively). In math, states that had content requirements related to SWDs scored higher than states that did not have content requirements related to SWDs ($M = 238.69$, $SD = 7.64$ and $M = 237.49$, $SD = 5.67$, respectively). However, once again, there was no statistically significant difference between states with and without licensure renewal content requirements related to SWDs on the combined dependent variables for eighth-grade reading and math scores, $F(2, 47) = .204$, $p = .816$, Wilks' $\Lambda = .991$, partial $\eta^2 = .009$.

Indicator 2: Special Education Teacher Renewal Requirements Related to Students with Disabilities

Indicator 2 measured the presence or absence of content renewal requirements related to SWDs specifically for special education teachers. Indicator 2 was scored as follows:

- 0 = State policy had no content requirements related to SWDs for special education teachers.
- 1 = State policy required special education teachers to complete renewal activities that related to their area of endorsement (e.g., K-12 special education), which might include specifically named content requirements related to the education of SWDs.

As presented in Appendix Table B.4, 30 states had no content requirements related to SWDs for special education teachers (score of 0) while 21 states required special education

teachers to complete renewal activities that related to their area of endorsement, which might include specifically named content requirements (score of 1).

Mirroring the procedure for indicator 1, I used a Hotelling's T^2 analysis for indicator 2 because the independent variable had two groups (states that had content requirements for special education teachers related to SWDs and states that did not have content requirements for special education teachers related to SWDs). Once again, I conducted separate analyses for fourth-grade and eighth-grade academic achievement and used 2022 scaled scores in reading and math for SWDs whose teachers held a standard or professional credential as the combined dependent measures for each grade level.

Next, I conducted preliminary assumptions testing. For the fourth-grade analysis, visual inspection of boxplots revealed the presence of two univariate outliers in the group of states that did not have SWDs content requirements for special education teachers, both associated with Hawaii (reading score = 161; math score = 164). For the eighth-grade analysis, there was one outlying reading score for states with requirements for special education teachers (Massachusetts = 240) and three outlying reading scores for states with no requirements for special education teachers (Alabama = 208, West Virginia = 208, New Jersey = 238). In accordance with previous analyses, I chose to keep the univariate outliers in the dataset as their inclusion had no effect on the final result.

All other assumptions were met for both the fourth- and eighth-grade analyses. There were linear relationships between reading and math scores, as assessed by visual inspection of scatterplots for both levels of indicator 2, and no multicollinearity as assessed by Pearson correlation ($r < 0.9$). There were no multivariate outliers in the data as assessed by comparing Mahalanobis distance values; reading and math scores were normally distributed for states with

and without content requirements related to SWDs for special education teachers as assessed by Shapiro-Wilk's test ($p > .05$); and there was homogeneity of variance-covariances matrices as assessed by Box's test of equality of covariance matrices ($p > .001$).

Table 4.8 shows means and standard deviations for fourth- and eighth-grade reading and math scores for states that had content requirements related to SWDs for special education versus states that did not have content requirements for special education teachers as measured via indicator 2.

Table 4.8

Indicator 2: Means and Standard Deviations

Indicator 2		NAEP Fourth Grade				NAEP Eighth Grade			
		Reading		Math		Reading		Math	
	n	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
No reqs. for SETs	29	178.10	6.22	208.59	5.87	221.79	6.58	237.90	5.48
Reqs. for SETs	21	178.00	9.82	206.90	7.03	223.33	6.41	237.67	7.17
Total	50	178.06	7.84	207.88	6.37	222.44	6.49	237.80	6.18

Note. New Mexico excluded from analysis for not meeting reporting standards for the 2022 NAEP administration. Reqs. = requirements. SETs = special education teachers.

Notably, analysis of fourth-grade reading scores showed that states that required special education teachers to complete renewal activities related to their areas of endorsement, including any specifically named requirements related to SWDs, scored slightly lower than states that had no requirements for special education teachers ($M = 178.00$, $SD = 9.82$ and $M = 178.10$, $SD = 6.22$, respectively). The same was true for fourth-grade math with states that had renewal requirements for special education teachers scoring lower than states that had no requirements ($M = 206.90$, $SD = 7.03$ and $M = 208.59$, $SD = 5.87$, respectively). Although the difference

between states with and without renewal requirements related to SWDs for special education teachers was not statistically significant, $F(2, 47) = .783$, $p = .463$, Wilks' $\Lambda = .968$, partial $\eta^2 = .032$, the directionality of the relationship showed that states that had specific renewal requirements for special education teachers actually performed worse than states that did not have specific renewal requirements for special education teachers on the 2022 fourth-grade administration of the NAEP.

This pattern did not hold true for analysis of eighth-grade reading scores. States that required special education teachers to complete renewal activities related to SWDs scored higher than states that had no requirements for special education teachers ($M = 223.33$, $SD = 6.41$ and $M = 221.79$, $SD = 6.58$, respectively). However, analysis of eighth-grade math scores followed the same pattern as fourth-grade reading and math scores—states that required special education teachers to complete renewal activities related to SWDs scoring lower than states that had no requirements for special education teachers ($M = 237.67$, $SD = 7.17$ and $M = 237.90$, $SD = 5.48$, respectively). Once again, the difference between states with and without renewal requirements special education teachers related to SWDs was not statistically significant, $F(2, 47) = .666$, $p = .518$, Wilks' $\Lambda = .972$, partial $\eta^2 = .028$.

Indicator 3: General Education Teacher Renewal Requirements Related to Students with Disabilities

Indicator 3 measured the presence or absence of content renewal requirements related to SWDs specifically for general education teachers. Indicator 3 was scored as follows:

- 0 = State policy had no content requirements related to SWDs for general education teachers.

- 1 = State licensure renewal policy required *some* general education teachers to fulfill specifically named content requirements related to the education of SWDs.
- 2 = State licensure renewal policy required *all* general education teachers to fulfill specifically named content requirements related to the education of SWDs.

As presented in Appendix Table B.4, 38 states had no content requirements related to SWDs for general education teachers (score of 0); three states had content requirements for some general education teachers (score of 1); and 10 states had content requirements for all general education teachers (score of 2). However, the low sample size for the group of states with content requirements for some general education teachers (n =3) made it difficult to meet the assumptions associated with MANOVAs. A solution to address this issue was to combine the independent variable into fewer categories, i.e., two categories instead of the current three categories. The most logical way to accomplish this was to combine states scoring a 1 or 2 into one category. However, combining the states in this way produced the same group of 13 states that was used in the analysis for indicator 1 (renewal content requirements related to SWDs). Because this analysis would be duplicative of the analysis already performed for indicator 1, I did not perform a separate analysis for indicator 3.

Summary of Research Question 3
Findings

Quantitative analyses performed for Q3 did not provide evidence to support a relationship between rigor of state licensure renewal policies and student achievement. The only statistically significant finding was a two-way interaction effect between licensure renewal rigor and achievement for eighth-grade math scores when examining licensure rigor and SWD performance as independent variables with NAEP achievement as a covariate. Follow-up analysis showed only one statistically significant simple main effect—the effect of SWD

performance level at the medium level of licensure renewal rigor. No other analysis performed for Q3 yielded statistically significant results. In all, this did not provide compelling evidence to demonstrate a relationship between relicensure rigor and student achievement.

Analysis of the individual licensure renewal indicators (step 4) yielded some interesting results. Across all Q3 analyses, although virtually none demonstrated statistical significance, the directionality of the relationship between relicensure rigor and student achievement largely followed expected patterns (i.e., high rigor states had higher student achievement scores than low or medium rigor states). However, in the analysis for indicator 2 (special education teacher renewal requirements related to SWDs), the directionality of the relationship between the rigor of the indicator and student achievement was largely opposite from what might be expected—states that had more rigorous licensure renewal requirements for special education teachers actually performed slightly worse (although not to a statistically significant degree) in fourth-grade reading, fourth-grade math, and eighth-grade math than states with less rigorous requirements for special education teachers. This was a notable observation from the data, although it could not support any conclusions about the relationship between the rigor of special education teacher renewal requirements and student achievement.

As previously noted, it was important to reiterate that the analyses conducted for this study could not establish causality but they did provide evidence to support the presence or absence of a relationship between rigor of state licensure renewal policies and student achievement. The fact that there were very few conclusive findings associated with Q3 was in and of itself important information about the extent of the relationship between relicensure rigor and student achievement. Chapter V discusses the implications of these findings across research questions in the context of research, policy, and practice.

CHAPTER V

DISCUSSION

The purpose of this study was threefold: to describe the requirements related to students with disabilities (SWDs) in state teacher licensure renewal policies; to explore how states with high-performing SWDs relicensed teachers; and to investigate the relationship between the rigor of relicensure requirements and student achievement. Teacher licensure renewal policy is a particularly timely issue, especially as the field recovers from the disruptions of the COVID-19 pandemic. For example, in May 2023, the VDOE unanimously voted to extend the expiration date for more than 15,500 renewable educator licenses set to expire in June 2023, citing a severe backlog of renewal requests and limited capacity at the VDOE to process this volume of requests in a timely manner (Cline, 2023). This decision was primarily driven by the current teacher shortage, which has reached record highs in the wake of the pandemic, and recognition of the extreme staffing burden that would fall on Virginia school divisions if educators were unable to practice until their applications were processed. Virginia teachers now have until June 2024 to meet their renewal requirements, which include statutory requirements for dyslexia and special education training (VDOE, 2023).

North Carolina is another state grappling with the implications of revising licensure renewal policy. In July 2023, the Professional Educator Preparation and Standards Commission voted against a proposal to increase teacher licensure fees, which would have increased the cost of renewing a continuing professional license from $35 to $75, citing concerns about forcing teachers to shoulder the costs (McClellan, 2023). Combined with fee increases for other license

types, this proposal would have generated an additional $1.2 million per year to fund licensure office staff and operations. Although the fee increase was not approved, the Professional Educator Preparation and Standards Commission voted to approve several other amendments to the state's licensure renewal policy to make it easier to reinstate an expired professional license and reaffirming expectations for North Carolina educators to complete licensure renewal credits in the areas of subject area knowledge, digital learning competencies, and literacy (North Carolina Department of Public Instruction, 2023).

Virginia and North Carolina are only two recent examples of states considering teacher licensure renewal as a policy lever to influence teacher and student outcomes. This chapter interprets the findings of this study in the context of current policy discussions, provides an analysis of the study's limitations, and discusses implications for future research, policy, and practice.

Restatement of Problem

In the first chapter, I posed two essential questions to guide research on state licensure renewal policies. First, is there compelling evidence to demonstrate that rigorous state licensure renewal policies are linked to better teacher and student performance? And second, based on this evidence, how can states structure their licensure renewal policies to realize these outcomes?

The current study sought to investigate the first essential question via a two-phase research design consisting of a comprehensive scan of state licensure renewal policies related to SWDs followed by a quantitative analysis of the relationship between the rigor of state licensure renewal policies and student achievement outcomes. The study was organized around the following research questions:

Q1 What requirements related to SWDs are in state teacher licensure renewal policies?

Q2 How do states with high-performing SWDs relicense teachers?

Q3 Are state licensure renewal requirements related to student achievement?

The current study yielded three main findings. First, 13 states currently have specific content requirements related to SWDs in their licensure renewal policies. Content requirements included continuing education and standalone trainings on SWDs and special education generally, reading instruction, dyslexia, behavior, alcohol-related disabilities, and equity-based classroom practices. Second, there were few noteworthy commonalities in how states with high-performing SWDs relicensed their teachers beyond the use of continuing education-based approaches. Finally, quantitative analysis did not demonstrate evidence of a relationship between the rigor of state licensure renewal requirements pertaining to SWDs and student achievement outcomes.

In response to the first essential question, the current study did not find compelling evidence linking state licensure renewal policies to the performance of SWDs. This mirrored findings from previous studies that did not find associations between state-level licensure structures and student outcomes (Goldhaber & Brewer, 2000; Sindelar et al., 2019).

The remainder of Chapter V addresses the implications of the second essential question—based on this evidence, how can states structure their licensure renewal policies to realize teacher and student outcomes? With neither the current nor previous studies able to lend support for using licensure reform as a policy lever to influence teacher and student performance, it raised important questions about how states should create policy, invest resources, and evaluate outcomes associated with licensure renewal.

Implications for Research

A major limitation of the current study was it did not investigate the relationship between the rigor of state teacher licensure renewal policies and teacher outcomes (see the Limitations section for further discussion). As illustrated in the logic model in Figure 1.1 (see Chapter I), the activities associated with licensure renewal policy are intended to produce changes in teacher knowledge and skill, which in turn should produce more effective teachers who are more likely to stay in the profession. Thus, measures such as teacher retention should play a central role in evaluating the relationship between state teacher licensure renewal policies and teacher and student outcomes.

Unfortunately, states varied widely as to how they measured teacher supply and demand. A recent scan conducted by the Education Commission of the States (2022) found that although 41 states provided some type of publicly-available teacher supply and demand data from the last five years, there was a wide range of methods used to quantify supply and demand (e.g., vacancies, shortages, attrition, recruitment, retention, mobility), making comparisons across all states very difficult. Furthermore, only 11 of these states provided their data disaggregated by teacher subgroups.

Researchers have long noted the need for better data systems to track the educator labor market, but the need has become especially pronounced in the wake of the COVID-19 pandemic (Bleiberg & Kraft, 2022). This need was especially pronounced in special education. A recent report from a special education workforce technical working group convened by the National Center for Special Education Research (NCSER, 2023a) noted that nationally representative datasets were often inadequate for the purpose of understanding the education teacher workforce because they sampled few special education teachers and did not include information about the

characteristics of students they taught. In the course of planning this study, I investigated the usability of teacher retention data from the National Teacher and Principal Survey, which was specifically mentioned in the technical working group summary because it allowed for disaggregation of special education teachers and teachers with full (as opposed to initial or temporary) licensure. However, managers of the National Teacher and Principal Survey dataset discourage using the data to makes comparisons across states due to the variability of state-level estimates (J. Merlin, personal communication, April 12, 2023).

A necessary first recommendation to conduct future research into the relationship between state teacher licensure renewal policy (or any type of policy) and teacher outcomes must be to collect nationally representative teacher workforce data that could be disaggregated by teacher subgroups and used to make reliable comparisons across states. Encouragingly, recent steps have been taken in this direction. In June 2023, U.S. Senator Tim Kaine introduced the *Supporting Teaching and Learning through Better Data Act*, which is intended to strengthen data collection on the teacher workforce in an effort to address shortages. The act includes a provision to identify gaps in federal datasets and provide recommendations for addressing those gaps. More recently, NCSER (2023b) announced a competition for a special education research and development center; one of the goals of was to "to improve inter- and intra-state data collection and infrastructure to facilitate ongoing research and data-based policy decisions related to the special education teacher workforce" (p. 8).

For future lines of research on teacher licensure renewal policies, expansion into other types of research designs might be fruitful. Aligned with Sindelar et al.'s (2019) conclusion that the state level might be "too coarse" of a unit of analysis for understanding the effects of licensure policy changes (p. 1), future studies could focus on a comparison of teacher and student

outcomes pre- and post-changes in licensure renewal policy within individual states by using data at the regional or district level. However, studies of this nature could only occur in states with robust existing state and district-level data systems because they would require data collection over multiple years until the policy achieved full implementation. Studies of this nature would also require the ability to disaggregate for student and teacher populations of interest (e.g., SWDs and their teachers, both general and special education) at the regional or district levels.

A final recommendation for a future line of research might focus on using economic impact methodology to explore return on investment for professional development and continuing education linked to licensure renewal. Currently, 42 states require or offer continuing education-based approaches to relicensure. As discussed in Chapter I, continuing education-based approaches to licensure renewal require considerable investment of resources (e.g., personnel, time, money, technology, professional learning delivery infrastructure). Future studies might focus on whether this investment was yielding desired improvements in teacher and student performance. Studies of this nature would most likely have to be conducted at the local or state level to have access to the necessary data points.

Implications for Policy

Teacher licensure has been a favored policy instrument to address a range of problems related to teacher quality and teacher shortages. Policy instruments are intended to translate goals (e.g., increase teacher quality, decrease shortages) into action. However, licensure—and particularly licensure renewal—has distinct strengths and weaknesses as a policy instrument.

When ineffectively implemented, licensure renewal policy does little to enhance the professional growth of teachers. Instead, the professional learning activities associated with

licensure renewal become compliance-driven exercises that lack substance and personalization (Hirsch, 2015; Procopio, 2021; Sawchuk, 2017). Furthermore, ineffective licensure renewal policy can lead to the creation of expensive and bloated administrative bureaucracies that add little value to teaching and learning.

However, when effectively implemented, licensure renewal policy is an opportunity to invest in the professional growth of teachers. Effective relicensure policy recognizes that the development of expert teachers takes time and intentionality. Relicensure requirements reinforce core values, i.e., renewal requirements related to special education signal that SWDs deserve effective teachers who are prepared to meet their needs. Licensure renewal is also an opportunity to create coherence across educator systems, e.g., linking goals and activities related to educator evaluation, professional learning, and teaching standards (Leo & Coggshall, 2013).

Moving away from the challenges toward opportunities would require a shift in how we think about licensure renewal as a policy instrument. Licensure renewal has traditionally functioned as a mandate or a rules-based policy instrument intended to elicit compliance (McDonnell & Elmore, 1987). For this reason, policy debate around licensure renewal has tended to focus less on the overall purpose and goals of professional learning and more on the specifics of professional learning implementation (e.g., who, what, when, how, and how much).

Conceptualizing licensure renewal as a capacity-building policy instrument, or one that invests resources in the development of human potential (McDonnell & Elmore, 1987), would be a more productive way to think about translating policy goals into action. This vision of licensure renewal places professional growth before compliance and gives teachers increased agency over their career development (Tooley & Connally, 2016; Tooley & White, 2018). Shifting to a capacity-building vision for licensure renewal would require a fundamentally different way of

doing business and supportive policies at the state, district, and educator preparation levels. The following recommendations speak to these potential policies and how they would benefit teachers and students.

The first recommendation is to create a coherent system of teacher development supports linking preservice preparation with in-service professional learning. It is not possible to cover all content related to teaching and learning within the span of a preparation program. Especially in the context of preparing general education teachers to support SWDs, we need to consider what all teachers need to know and be able to do on their first day in the classroom (e.g., supporting Tier 1 instruction) and use in-service professional learning and relicensure requirements to deepen that knowledge. For example, Texas and Virginia recently revised their preservice preparation and initial licensure requirements in addition to their relicensure requirements to align expectations related to reading instruction and dyslexia.

The second recommendation is to consider tiered models of licensure. Standard licensure renewal procedures lacked differentiation based on teacher experience, roles, and skills. Moving to a competency-based system of tiered licensure would set clear expectations for career advancement while recognizing that teachers at different stages of their career need different types of professional learning opportunities. Minnesota, a state that has had a tiered licensure system for over a decade, has articulated a clear vision for training related to reading instruction and behavior supports across the tiers of licensure.

A final recommendation for future licensure renewal policies is to consider a shift from input-based relicensure approaches such as continuing education to output-based approaches that require demonstration of knowledge and skills (Paliokas, 2013). Licensure activities might be input or output-focused depending on what actions are required of teachers. Continuing

education and classroom experience are considered input-based requirements because they only require teachers to document evidence of completing the activity. National Board certification and teacher evaluation ratings are considered output-based requirements because they require teachers to demonstrate evidence of effective teaching practice and/or student growth. Incentivizing National Board certification or offering full or partial continuing education credit for satisfactory evaluation scores might be ways to achieve this.

Implications for Practice

The most important consideration when considering future directions for licensure renewal policy is the impact it would have on teachers. A framing theoretical consideration of this study and others that preceded it was the tension between licensure renewal as a compliance exercise and licensure renewal as a mechanism to advance teachers' professional learning and growth (Tooley & White, 2018). In principle, both of these functions of licensure renewal had broad support. For example, most people agreed it was necessary and important to periodically affirm that adults entrusted to work with children were fit to do so (i.e., that they could pass a background check). Likewise, the concept of ongoing professional learning across the career continuum enjoyed enthusiastic support from a wide range of stakeholders, most notably teachers themselves (Will, 2017). However, in practical application, there was far less consensus about how to make the professional learning experiences associated with licensure renewal process effective and meaningful for every teacher.

This pointed to a second tension underlying licensure renewal policies: the balance between licensure renewal that promotes high-quality professional learning and requirements that are not overly burdensome on teachers. As discussed previously, teachers had justified criticisms of current licensure renewal policies ranging from lack of personalization to the

expense. There was also concern that overly burdensome requirements contributed to teachers' decisions to leave the profession. These criticisms might suggest doing away with or lessening licensure renewal requirements, which many states have done permanently or temporarily (e.g., Oregon and Alabama).

At the same time, teachers and advocacy organizations remained fiercely in support of professional learning. Some educators expressed concern about the lessening of renewal requirements and the message it sent that teaching is a stagnant profession that does not require effort to stay current on best practices. Others were concerned that without a state policy mandating continuing education, less-resourced districts would do away with professional development programs while better-resourced districts would continue investing in these programs, further exacerbating systemic inequities (Loewus, 2017).

A first recommendation to ensure that licensure renewal policies are meaningful for teachers is to ensure that content requirements, especially those related to the instruction of diverse learners, recognize the shifting demographics of SWDs. Federal data showed that SWDs increased from 13% to 15% of national public school enrollment between 2010-2011 and 2021-2022, representing over 7.3 million students (Schaeffer, 2023). Within this population, fewer students were being identified for specific learning disabilities and more students were being identified in other health impairment and autism categories. With these demographic shifts came the need for teachers to understand how to meet the needs of these students including strategies to implement personalized learning plans, support individual behavior concerns, and support postsecondary success.

Building from the first recommendation, a second recommendation is to ensure that licensure renewal content requirements recognize that in addition to shifting demographics of

SWDs, the way we serve SWDs is changing. Over the past two decades, the number of students served in restrictive placements has decreased while the number of students served in inclusive settings has increased (Williamson et al., 2020). This shift means that general education teachers bear increasing responsibility for directly educating SWDs. Professional learning on multi-tiered systems of supports, such as Positive Behavior Interventions and Supports, will be critical to ensuring that teachers, especially general education teachers, are equipped with the skills they need to serve SWDs in inclusive settings.

A final recommendation to ensure that licensure renewal policies are meaningful for teachers is to ensure that these policies align with and support other state policies related to the instruction of SWDs. For example, of the 13 states this study found that had specific requirements related to SWDs, eight of them had licensure renewal content requirements specifically to address science of reading and/or dyslexia. As of July 2023, 32 states and the District of Columbia have passed laws or implemented new policies related to evidence-based reading instruction (Schwartz, 2023). Additionally, as of July 2023, 29 states had in-service training or professional development requirements for dyslexia, although these might not necessarily be tied to licensure renewal (National Center on Improving Literacy Outcomes, 2023). As more policies related to reading instruction and dyslexia emerge, the need for educators who have the skills to work with these populations will grow. Beyond dyslexia, examples of other state policies that could be reinforced within licensure renewal content include those related to multi-tiered systems of supports, behavior, culturally responsive practices, and inclusive education.

Limitations of Study

Research question 1 explored what requirements related to SWDs were in current state teacher licensure renewal policies via comprehensive scan of information from state education agency websites. As with any scan of this nature, a major limitation was that state licensure policies are constantly changing. The scan was conducted during June and July 2023, but it is possible—even likely—that some state relicensure policies have already changed since then.

Another limitation associated with this research question was it focused solely on requirements to renew a standard teaching credential. The study did not focus on requirements to obtain an initial license or advance between tiers or levels of licenses. It is possible that in focusing solely on requirements related to standard licensure renewal I might have missed information about training requirements related to SWDs that were part of obtaining an initial license or advancing a license. Examining requirements related to SWDs that are part of states' policies for initial licensure or licensure advancement might be an interesting and productive area for future research.

Research question 2 investigated commonalities in how states with high-performing SWDs relicensed teachers. Originally, I intended to identify states with strong student and teacher outcomes to determine if there were similarities in how these states relicensed teachers. However, I was unable to find a suitable measure to represent state-level teacher outcomes (e.g., retention) that could be compared across states. Therefore, a major limitation of this study was that I had to frame this research question solely around student outcomes. I defined states with high-performing SWDs via three student outcomes: fourth-grade NAEP reading scores for SWDs, fourth-grade NAEP math scores for SWDs, and the proportion of SWDs served inside general education classes for 80% or more of the school day. Sindelar et al. (2019) investigated a

similar research question about how' effective' states structured initial licensing for special education teachers, defining effective states via eighth-grade NAEP reading scores, the proportion of SWDs served inside regular classes for 80% or more of the school day, and the proportion of highly-qualified special education teachers. Their study used LRE and highly qualified teacher data from 2013 and NAEP data from 2015. Because ESSA eliminated the highly-qualified requirement for teachers in 2015, this measure was not appropriate for the current study. I attempted to identify appropriate teacher outcome data for inclusion in this study but was unable to find a suitable alternative. For this reason, my study focused solely on the relationship between state teacher licensure renewal policy and student outcomes, not teacher outcomes. I discuss recommendations to remedy this issue in the next section on implications for research.

Research question 3 investigated the relationship between the rigor of state teacher licensure renewal requirements and student achievement. A notable limitation for this research question was the temporal nature of state relicensure policies and the availability of student achievement data. Although I conducted the state relicensure policy scan in summer 2023, the most recent NAEP data were from 2022 and OSEP's (2022) most recent LRE data were from 2021–2022. Some of the relicensure policies I found in the scan were in the relatively early stages of rollout (for example, Colorado's relicensure requirements related to SWDs do not go into full effect until 2025) and, therefore, might not represent fully implemented policies at the time of the NAEP or LRE data collections. However, all policies included in the scan were at least in some phase of initial implementation by the time of the 2022 NAEP administration, although some were certainly not in full implementation just yet.

It is also important to note the impact of the COVID-19 pandemic on this research question. From a state policy perspective, the COVID-19 pandemic caused many states to delay implementation of new relicensure requirements or temporarily reduce relicensure requirements so as not to burden teachers. From a data perspective, the 2022 administration of the NAEP (2023), which was delayed from its originally scheduled administration in 2021, was the first snapshot of student progress since the beginning of the pandemic. Long-term trend assessments administered in 2022 showed a considerable decline in reading and math scores for nine-year-old students (NAEP, 2023). I attempted to control for pandemic-related declines in 2022 scores by including prior NAEP achievement as a covariate in some of the analyses.

Conclusion

Shifting demographics, models of service delivery, and state policies meant that teachers need ongoing support to effectively serve SWDs. Licensure renewal policies, in spite of their strengths and weaknesses as a policy instrument, offer an opportunity to provide teachers with this support. Reimagining licensure renewal systems that balance high-quality professional learning opportunities with reasonable compliance requirements could help to ensure that relicensure systems promote positive outcomes for teachers and students.

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APPENDIX A

INSTITUTIONAL REVIEW BOARD APPROVAL

UNIVERSITY OF
NORTHERN COLORADO

Institutional Review Board

Date:	06/27/2023
Principal Investigator:	Lindsey Hayes
Committee Action:	**IRB EXEMPT DETERMINATION – New Protocol**
Action Date:	06/27/2023
Protocol Number:	2305049299
Protocol Title:	An Investigation of State Teacher Licensure Renewal Policies Related to Students With Disabilities
Expiration Date:	

The University of Northern Colorado Institutional Review Board has reviewed your protocol and determined your project to be exempt under 45 CFR 46.104(d)(702) (704) for research involving

Category 2 (2018): EDUCATIONAL TESTS, SURVEYS, INTERVIEWS, OR OBSERVATIONS OF PUBLIC BEHAVIOR. Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording) if at least one of the following criteria is met: (i) The information obtained is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained, directly or through identifiers linked to the subjects; (ii) Any disclosure of the human subjects' responses outside the research would not reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, educational advancement, or reputation; or (iii) The information obtained is recorded by the investigator in such a manner that the identity of the human subjects can readily be ascertained, directly or through identifiers linked to the subjects, and an IRB conducts a limited IRB review to make the determination required by 45 CFR 46.111(a)(7).

Category 4 (2018): SECONDARY RESEARCH USING IDENTIFIABLE DATA OR SPECIMENS. Secondary research for which consent is not required: Secondary research uses of identifiable private information or identifiable biospecimens, if at least one of the following criteria is met: (i) The identifiable private information or identifiable biospecimens are publicly available; (ii) Information, which may include information about biospecimens, is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained directly or through identifiers linked to the subjects, the investigator does not contact the subjects, and the investigator will not re-identify subjects; (iii) The research involves only information collection and analysis involving the investigator's use of

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Institutional Review Board

identifiable health information when that use is regulated under 45 CFR parts 160 and 164, subparts A and E, for the purposes of "health care operations" or "research" as those terms are defined at 45 CFR 164.501 or for "public health activities and purposes" as described under 45 CFR 164.512(b); or (iv) The research is conducted by, or on behalf of, a Federal department or agency using government-generated or government-collected information obtained for nonresearch activities, if the research generates identifiable private information that is or will be maintained on information technology that is subject to and in compliance with section 208(b) of the E-Government Act of 2002, 44 U.S.C. 3501 note, if all of the identifiable private information collected, used, or generated as part of the activity will be maintained in systems of records subject to the Privacy Act of 1974, 5 U.S.C. 552a, and, if applicable, the information used in the research was collected subject to the Paperwork Reduction Act of 1995, 44 U.S.C. 3501 et seq.

You may begin conducting your research as outlined in your protocol. Your study does not require further review from the IRB, unless changes need to be made to your approved protocol.

As the Principal Investigator (PI), you are still responsible for contacting the UNC IRB office if and when:

- You wish to deviate from the described protocol and would like to formally submit a modification request. Prior IRB approval must be obtained before any changes can be implemented (except to eliminate an immediate hazard to research participants).
- You make changes to the research personnel working on this study (add or drop research staff on this protocol).
- At the end of the study or before you leave The University of Northern Colorado and are no longer a student or employee, to request your protocol be closed. *You cannot continue to reference UNC on any documents (including the informed consent form) or conduct the study under the auspices of UNC if you are no longer a student/employee of this university.
- You have received or have been made aware of any complaints, problems, or adverse events that are related or possibly related to participation in the research.

If you have any questions, please contact the Interim IRB Administrator, Chris Saxton, at 970-702-5427 or via e-mail at chris.saxton@unco.edu. Additional information concerning the requirements for the protection of human subjects may be found at the Office of Human Research Protection website - http://hhs.gov/ohrp/ and https://www.unco.edu/research/research-integrity-and-compliance/institutional-review-board/.

Sincerely,
Michael Aldridge

Carter Hall 2008 | Campus Box 143 | Greeley, CO 80639 | Office 970-702-5427

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Institutional Review Board

Interim IRB Administrator

University of Northern Colorado: FWA00000784

Carter Hall 2008 | Campus Box 143 | Greeley, CO 80639 | Office 970-702-5427

APPENDIX B

SUPPLEMENTAL LICENSURE RENEWAL POLICY INFORMATION

Table B.1

State Licensure Renewal Policy Source Material

State	State Education Agency Policy	Statutory or Regulatory Authority
AL	Alabama State Department of Education: Certificate Renewal	Ala. Admin. Code r. 290-3-2-.29: Renewal Requirements: Continuation or Reinstatement
AK	Alaska Department of Education and Early Development: Renewal and Reinstatement Information	4 Alaska Admin. Code § 12.405: Renewal of Certificates
AZ	Arizona Department of Education: Educator Certification: Renew Your Certification	Ariz. Admin. Code § 7-2-619: Renewal Requirements
AR	Arkansas Division of Elementary and Secondary Education: Renewing a License	005-19-04 Ark. Code R. § 9: Procedures of Renewing a Standard Arkansas Teaching License
CA	California Commission on Teacher Credentialing: Renewal and Reissuance of Credentials (CL-494)	Cal. Code Regs. tit. 5 § 80552: Specific Requirements for Renewing Professional Clear Credentials
CO	Colorado Department of Education: Renew a Professional Teacher License	Colo. Rev. Stat. § 22-60.5-110: Renewal of Licenses
CT	Connecticut Bureau of Certification: How do I renew my Connecticut educator certificate?	Conn. State Board of Education (10-145d-400): Regulations Concerning State Educator Certificates, Permits and Authorizations

Table B.1 Continued

State	State Education Agency Policy	Statutory or Regulatory Authority
DE	Delaware Department of Education: License Renewal	14 Del. Admin. Code § 1511-4.0: Requirements for a Continuing License
DC	District of Columbia Office of the State Superintendent of Education: Credential Renewal	D.C. Municipal Regulations (DCMR 5-A1604): Credentials for Teachers and School Administrators
FL	Florida Department of Education: Florida Educator Certification Renewal Requirements	Fla. Admin. Code R. 6A-4.0051: Renewal and Reinstatement of a Professional Certificate
GA	Georgia Professional Standards Commission: Certificate Renewal	Ga. Comp. Rules & Regs. r. 505-2-.36: Renewal Requirements
HI	Hawai'i Teacher Standards Board: Renewing Your License	Haw. Rev. Stat. § 302A-805: Teachers; License or Permit Required; Renewals
ID	Idaho State Department of Education: Renewal of an Idaho Certificate	Idaho Admin. Code r. 08.02.02.060: Application Procedures/Professional Development
IL	Illinois State Board of Education: Educator Licensure License Renewal	105 Ill. Comp. Stat. § 5/21B-45: Professional Educator License Renewal
IN	Indiana Department of Education: Current Indiana Educator to Renew a License	511 Ind. Admin. Code § 14-2-3: Professional Growth Plan; Renewal
IA	Iowa Board of Education Examiners: Standard, Master, PSL, and Administrator Renewal Information	Iowa Admin. Code r. 282-20.5: Specific Renewal Requirements for the Standard License
KS	Kansas State Department of Education: Renewal of Professional License Requirements	Kan. Admin. Regs. § 91-1-205: Licensure Renewal Requirements
KY	Kentucky Education Professional Standards Board: Teacher Certification Renewal	16 Ky. Admin. Regs. § 4:060: Certificate Renewals and Teaching Experience

Table B.1 Continued

State	State Education Agency Policy	Statutory or Regulatory Authority
LA	Louisiana Department of Education: Certification Renewal, High, or Status Change Application	La. Admin. Code tit. 28 § CXXXI-507: Professional Level Certificates
ME	Maine Department of Education: Certification Renewals	Me. Stat. tit. 20-A § 13013: Professional Teacher Certificate
MD	Maryland State Department of Education: Renewal Requirements: Educators Employed in Local School Systems, Non-Public Special Education Facilities, and State Institutions	Md. Code Regs. § 13A.12.01.11: Renewal of Certificates
MA	Massachusetts Department of Elementary and Secondary Education: Advancing or Extending a License	Mass. Code (603 CMR 44.00): Educator License Renewal
MI	Michigan Department of Education: Standard Teaching Certificate Renewal	Mich. Admin. Code R. 390.1129b: Procedures at Expiration of Standard Teaching Certificate
MN	Minnesota Professional Educator Licensing and Standards Board: Renew My License	Minn. Admin. R. 8710.7100: Renewal of Tier 3 or 4 Teaching Licenses
MS	Mississippi Department of Education: Renew or Reinstate My License	Miss. Admin. Code (Title 7, Part 4): Guidelines for Mississippi Educator Licensure K-12
MO	Missouri Department of Elementary and Secondary Education: Upgrading from Initial Certificate to Career Certificate	Mo. Code R. (5 CSR 20-400.260): Certificate of License to Teach Classifications
MT	Montana Office of Public Instruction: Renew, Update, or Advance License	Admin. Rules of Mont. (ARM 10.57.215): Professional Development and Renewal Requirements
NE	Nebraska Department of Education: Certificate Renewals	Neb. Admin. Code (Title 92, Chapter 21, Rule 21): Regulations for the Issuance of Certificates and Permits to Teach, Provide Special Services, and Administer in Nebraska Schools

Table B.1 Continued

State	State Education Agency Policy	Statutory or Regulatory Authority
NV	State of Nevada Department of Education: Licensure Renewals	Nev. Admin. Code § 391.065: Renewal of License: Educational and Professional Requirements
NH	New Hampshire Department of Education: Bureau of Credentialing	N.H. Code Admin. R. Ed 509.01: Recommended Renewal; Process for Educators Currently Employed Under a Local NH Professional Development Master Plan
NJ	New Jersey Department of Education: Step 3: Becoming Permanently Certified	N.J. Admin. Code § 6A:9B-8.7: Requirements for the Standard Certificate
NM	New Mexico Public Education Department: Licensure Frequently Asked Questions	N.M. Code R. 6.60.6.9: Requirements for Advancement and Renewal of Teaching Licenses
NY	New York State Education Department: Professional Certificate	N.Y. Code (8 CRR-NY 80-6.6): Renewal of Registration
NC	North Carolina Department of Public Instruction: Renew or Update Your Professional Educator's License	N.C. Gen. Stat. § 115C-270.30: Licensure Renewal
ND	North Dakota Education Standards and Practices Board: Renewing a License	N.D. Admin. Code § 67.1-02-02-05: Professional Development for License Renewal
OH	Ohio Department of Education: How to Renew a Five-Year Professional, Advanced or Associate License	Ohio Admin. Code § 3301-24-08: Professional or Associate License Renewal
OK	Oklahoma State Department of Education: How to Renew Your Teacher Certification	Okla. Admin. Code § 210:20-9-96: Requirements for Renewal or Reissuance of Certificates
OR	Oregon Teacher Standards and Practices Commission: Renewal Information and Instructions	Or. Admin. R. 584-210-0040: Professional Teaching License

Table B.1 Continued

State	State Education Agency Policy	Statutory or Regulatory Authority
PA	Pennsylvania Department of Education: Act 48 and PERMS	22 Pa. Code § 49.11: General
RI	Rhode Island Department of Education: Certification Issuance and Renewal	200-20-20 R.I. Code R. § 1.8: Types of Certificates
SC	South Carolina Department of Education: Renewing a Professional Certificate	S.C. State Board Reg. (R. 43-55): Renewal of Credentials
SD	South Dakota Department of Education: Teacher Renewal Requirements	S.D. Admin. R. 24:28:17:13: Renewal Requirements for Standard Teaching Certificate
TN	Tennessee Department of Education: FAQ for Educators	Tenn. State Board of Education (Educator Licensure Policy 5.502-IV): Licensure Renewal and Advancement
TX	Texas Education Agency: Renewing My Standard Certificate	19 Tex. Admin. Code § 232.11: Number and Content of Required Continuing Professional Education Hours
UT	Utah State Board of Education: Renew an Educator License	Utah Admin. Code § 277-302-3: Educator License Renewal Requirements
VT	Vermont Agency of Education: Renew Your License	Vt. Standards Board for Professional Educators (Rules Governing the Licensing of Educators and the Preparation of Education Professionals § 5430): Licensure Renewal and Reinstatement
VA	Virginia Department of Education: Licensing Forms & Information	Va. Admin. Code (8VAC20-23-110): Requirements for Renewing a License
WA	Washington Office of Superintendent of Public Instruction: Professional Teacher	Wash. Admin. Code (WAC 181-79A-240): Certificate Renewal and Reinstatement

Table B.1 Continued

State	State Education Agency Policy	Statutory or Regulatory Authority
WV	West Virginia Department of Education: Renewal of a West Virginia Professional Teaching Certificate	W. Va. Board of Education (Policy 5202): Minimum Requirements for the Licensure of Professional/ Paraprofessional Personnel and Advanced Salary Classifications
WI	Wisconsin Department of Public Instruction: Apply to Obtain or Maintain Lifetime License	Wis. Admin. Code PI § 34.041: Tier III Lifetime License
WY	Wyoming Professional Teaching Standards Board: Renewal Requirements for Wyoming Educator License or Permit	019-8 Wyo. Code R. § 8-3: Renewal Requirements

Table B.2

Licensure Renewal Continuing Education Requirements by State

State	Name of Standard Credential	Length of Standard Credential	Continuing Education Requirement	Equivalent Contact Hours	Renewal Hours Per Year
AL	Professional Educator Certificate	5 yrs	Temporarily suspended	N/A	N/A
AK	Professional Teacher Certification	5 yrs	6 renewal credits	90 hrs	18 hrs/yr
AZ	Standard Teaching Certificate	6 yrs	15 clock hours of PD annually	90 hrs	15 hrs/yr
AR	Standard Teaching License	5 yrs	36 hours of PD annually	180 hrs	36 hrs/yr
CA	Clear Credential (Level II)	5 yrs	N/A	N/A	N/A
CO	Professional Teacher License	7 yrs	90 contact hours or 6 semester hours	90 hrs	~13 hrs/yr
CT	Provisional Educator Certificate	8 yrs	N/A	N/A	N/A
DE	Continuing License	5 yrs	90 clock hours	90 hrs	18 hrs/yr
DC	Standard Teacher Credential	4 yrs	120 clock hours or 8 semester credit hours	120 hrs	30 hrs/yr
FL	Professional Certificate	5 yrs	6 semester hours of college credit or equivalency	120 hrs	24 hrs/yr

State	Name of Standard Credential	Length of Standard Credential	Continuing Education Requirement	Equivalent Contact Hours	Renewal Hours Per Year
GA	Standard Professional	5 yrs	10 PLUs/CEUs or 100 hours of approved trainings	100 hrs	20 hrs/yr
HI	Standard License	5 yrs	N/A	N/A	N/A
ID	Standard Instructional Certificate	5 yrs	6 semester credits	90 hrs	18 hrs/yr
IL	Professional Educator License	5 yrs	120 hours	120 hrs	24 hrs/yr
IN	Practitioner License	5 yrs	90 PD points	90 hrs	18 hrs/yr
IA	Standard License	5 yrs	6 renewal credits	90 hrs	18 hrs/yr
KS	Professional License	5 yrs	120 or 160 PD points (depending on degree held)	120 or 160 hrs	24 or 32 hrs/yr
KY	Regular Certificate	5 yrs	6 semester hours of graduate credit	90 hrs	18 hrs/yr
LA	Level 2 Professional Certificate	5 yrs	N/A	N/A	N/A
ME	Professional Certificate	5 yrs	6 semester credits or 90 contact hours	90 hrs	18 hrs/yr
MD	Standard Professional Certificate II	5 yrs	6 semester hours	90 hrs	18 hrs/yr
MA	Professional License	5 yrs	150 PD points	150 hrs	30 hrs/yr

State	Name of Standard Credential	Length of Standard Credential	Continuing Education Requirement	Equivalent Contact Hours	Renewal Hours Per Year
MI	Standard Teaching Certificate	5 yrs	150 hours	150 hrs	30 hrs/yr
MN	Tier 3	3 yrs	75 clock hours	75 hrs	25 hrs/yr
MS	Standard License	5 yrs	10 CEUs or 6 semester hours	90 hrs	18 hrs/yr
MO	Career Continuous Professional Certificate	99 yrs	15 PD hours annually (lifetime license; CE required to maintain)	N/A	N/A
MT	Class 2 Standard Teaching License	5 yrs	60 PD units	60 hrs	12 hrs/yr
NE	Standard Certificate	5 yrs	6 graduate semester hours	90 hrs	18 hrs/yr
NV	Standard License	5 yrs	15 hours per year	75 hrs	15 hrs/yr
NH	Experienced Educator License	3 yrs	75 CE hours	75 hrs	25 hrs/yr
NJ	Standard Certificate	Continually valid	N/A (lifetime license; no CE required to maintain)	N/A	N/A
NM	Level 2 License	9 yrs	N/A	N/A	N/A
NY	Professional Certificate	Continually valid	100 clock hours (lifetime license; CE required to maintain)	N/A	N/A
NC	Continuing Professional License	5 yrs	8 CEUs or 80 clock hours of PD	80 hrs	16 hrs/yr
ND	Five-Year Renewal License	5 yrs	6 semester hours of college coursework	90 hrs	18 hrs/yr

State	Name of Standard Credential	Length of Standard Credential	Continuing Education Requirement	Equivalent Contact Hours	Renewal Hours Per Year
OH	Professional Educator License	5 yrs	6 semester hours or 18 CEUs	180 hrs	36 hrs/yr
OK	Standard Certificate	5 yrs	5 semester hours or 75 PD points	75 hrs	15 hrs/yr
OR	Professional License	5 yrs	Temporarily suspended	N/A	N/A
PA	Level II	Continuall y valid	180 hours of PD every 5 years (lifetime license; CE required to maintain)	N/A	N/A
RI	Professional Educator Certificate	5 yrs	45 PLUs	45 hrs	9 hrs/yr
SC	Professional Certificate	5 yrs	120 renewal credits	120 hrs	24 hrs/yr
SD	Professional Teaching Certificate	5 yrs	6 education-related transcripted credits or CE contact hours	90 hrs	18 hrs/yr
TN	Professional License	6 yrs	60 PD points	60 hrs	10 hrs/yr
TX	Standard Certificate	5 yrs	150 CE hours	150 hrs	30 hrs/yr
UT	Professional Educator License	5 yrs	100 hours of renewal activity	100 hrs	20 hrs/yr
VT	Level II License	5 yrs	6 credits or 90 hours	90 hrs	18 hrs/yr
VA	Collegiate Professional License	10 yrs	270 PD points	270 hrs	27 hrs/yr

State	Name of Standard Credential	Length of Standard Credential	Continuing Education Requirement	Equivalent Contact Hours	Renewal Hours Per Year
WA	Professional Teaching Certificate	5 yrs	100 clock hours or equivalent college credits	100 hrs	20 hrs/yr
WV	Professional Teaching Certificate	5 yrs	6 semester hours	90 hrs	18 hrs/yr
WI	Tier III Lifetime License	Continuall y valid	N/A (lifetime license; no CE required to maintain)	N/A	N/A
WY	Standard License	5 yrs	5 PD/renewal credits	75 hrs	15 hrs/yr

Note. Yrs = years; hrs = hours; CE = continuing education; CEUs = continuing education units; PLUs = professional learning units; PD = professional development; N/A = not applicable. One semester hour was calculated as the equivalent of 15 contact hours unless otherwise noted in the table.

Table B.3

Licensure Renewal Activities by State

State	Continuing Education	Individual PD Plan	National Board Certification	Performance Evaluations	Teaching Experience	Test Scores	Other
AL							None (temp.)
AK	R						
AZ	R		O-meet				
AR	R	O-meet	O-meet		R (2 years)		
CA							None
CO	R		O-meet				
CT					R (10 months)		
DE	R		O-partial				R (complete mentoring program)
DC	OR			OR		OR	
FL	R		O-meet			O-partial	
GA	R	R					
HI				R			

State	Continuing Education	Individual PD Plan	National Board Certification	Performance Evaluations	Teaching Experience	Test Scores	Other
ID	R						
IL	R		O-partial				
IN	OR	OR	OR				
IA	R	O-partial	O-partial				
KS	OR	O-meet	OR		OR (3 years)		
KY	OR				OR (3 years)		
LA				R			
ME	R						
MD	R	R	O-meet		R (3 years)		
MA	R	R	O-partial				
MI	R						
MN	R	R	O-meet				R (participate in mentoring and evaluation)
MS	OR		OR				

State	Continuing Education	Individual PD Plan	National Board Certification	Performance Evaluations	Teaching Experience	Test Scores	Other
MO	RM						
MT	R		O-meet				
NE	OR				OR (1 year)		
NV	R		O-meet				
NH	R	R					
NJ							None
NM				R			
NY	RM						
NC	R						
ND	R				R (30 days)		
OH	OR	R	OR	OR			
OK	OR				OR (3 years)		
OR							None (temp.)
PA	RM						
RI	R		O-meet				

State	Continuing Education	Individual PD Plan	National Board Certification	Performance Evaluations	Teaching Experience	Test Scores	Other
SC	R						
SD	OR		OR				OR (participate as mentee or mentor)
TN	R		O-partial	O-partial			
TX	R						
UT	R			O-partial			
VT	R		O-meet				
VA	R	R					
WA	OR	OR	OR				
WV	OR						OR (Qualifying degree/salary classification; age)
WI							None
WY	R		O-meet				

Note. PD = professional development; temp. = temporary; R = activity is required for renewal; OR = activity is offered as an option for renewal; RM = required for maintenance; O-meet = activity is an option to meet the continuing education requirement; O-partial = activity is an option to partially meet the continuing education requirement.

Table B.4

State Licensure Renewal Policy Rigor Scores

State	Indicator 1: Students with Disabilities Content	Indicator 2: Special Education Teachers	Indicator 3: General Education Teachers	Total Rigor Score	Rigor Category	High-Performing Category
AL	0	0	0	0	Low	High
AK	1	1	2	4	High	Low
AZ	0	0	0	0	Low	Low
AR	1	1	1	3	High	Low
CA	0	0	0	0	Low	Low
CO	1	1	2	4	High	High
CT	0	0	0	0	Low	Low
DE	0	1	0	1	Medium	Low
DC	0	1	0	1	Medium	Low
FL	1	1	2	4	High	High
GA	0	0	0	0	Low	High
HI	0	0	0	0	Low	Low
ID	0	1	0	1	Medium	Low
IL	0	0	0	0	Low	Low
IN	0	0	0	0	Low	High
IA	0	0	0	0	Low	Low
KS	0	0	0	0	Low	Low
KY	0	0	0	0	Low	High

State	Indicator 1: Students with Disabilities Content	Indicator 2: Special Education Teachers	Indicator 3: General Education Teachers	Total Rigor Score	Rigor Category	High-Performing Category
LA	0	0	0	0	Low	Low
ME	0	0	0	0	Low	Low
MD	1	1	2	4	High	Low
MA	1	1	2	4	High	High
MI	0	1	0	1	Medium	Low
MN	1	1	2	4	High	High
MS	0	1	0	1	Medium	High
MO	0	0	0	0	Low	Low
MT	0	0	0	0	Low	Low
NE	0	0	0	0	Low	High
NV	0	0	0	0	Low	Low
NH	0	1	0	1	Medium	Low
NJ	0	0	0	0	Low	High
NM	0	0	0	0	Low	Low
NY	0	0	0	0	Low	Low
NC	1	1	1	3	High	Low
ND	0	0	0	0	Low	Low
OH	0	1	0	1	Medium	Low
OK	0	0	0	0	Low	High
OR	0	0	0	0	Low	High

State	Indicator 1: Students with Disabilities Content	Indicator 2: Special Education Teachers	Indicator 3: General Education Teachers	Total Rigor Score	Rigor Category	High-Performing Category
PA	0	0	0	0	Low	Low
RI	0	0	0	0	Low	Low
SC	1	1	2	4	High	Low
SD	0	0	0	0	Low	High
TN	1	0	1	2	Medium	Low
TX	1	1	2	4	High	High
UT	0	1	0	1	Medium	High
VT	0	1	0	1	Medium	High
VA	1	1	2	4	High	Low
WA	1	1	2	4	High	High
WV	0	0	0	0	Low	Low
WI	0	0	0	0	Low	Low
WY	0	0	0	0	Low	High