THE STATE ROLE IN TEACHER PROFESSIONAL DEVELOPMENT AND EDUCATION THROUGHOUT TEACHERS' CAREERS

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Abstract

Professional development and teacher education policies have the potential to greatly affect teachers' abilities to teach and, as a result, students' abilities to learn. States can play varied roles in the provision of teacher education and professional development. This policy brief summarizes states' policy approaches to teacher professional development and education throughout teachers' careers. It explores what states are currently doing in the realms of pre-service education, induction and mentoring, ongoing professional development, and teacher evaluation, as well as the existing evidence regarding the effectiveness of such policies. We find that states play disparate roles in the provision of teacher education and professional development that fall along the regulatory spectrum from highly prescriptive to rather laissez-faire. Research on the effects of such policies is still in the early stages, and more attention is needed to determine the effectiveness of states' professional development policies.

INTRODUCTION

In the quest for improved student outcomes, teachers' professional development and education have reentered the public debate as a means to improve teaching. Professional development, or teacher education, comes in many forms and at many points throughout teachers' careers. Professional development, if well implemented, is a potentially promising strategy for improving teaching, and ultimately student learning, and state governments can serve many functions in its provision. States can play a very limited role, allowing districts to choose their own professional development policies and providing limited support or information to aid districts in professional development decisions. Alternatively, states may allow districts to choose their own approaches but can serve as a clearinghouse for effective teacher education and professional development strategies. At the other end of the spectrum, state governments can be highly regulatory, dictating specific aspects of districts' professional development and education programs. Examples include state regulation of the quantity and type of courses and hours of field experience teachers must complete in their pre-service work, the extent and character of the mentoring and induction teachers receive in their first years of teaching, the number of hours teachers must spend in professional development programs each year, the types of professional development required, and the manner in which teachers are evaluated and assisted throughout their careers. As we show in this brief, states differ in how they fulfill their roles along this regulatory spectrum.

In addition to regulating professional development, state governments can assist districts in funding professional development for teachers. Of the twenty-seven states for which data are available on funding for professional development, twenty-two provide some funding in this area. All states also support schools of education that supplement, to some degree, the training of pre-service teachers.

Given that state governments can play such a wide variety of roles in the provision and funding of education programs for teachers, it is worth exploring what states are currently doing, and any existing evidence regarding the effectiveness of professional development policies. This policy brief summarizes the policy approaches of all fifty states and the District of Columbia, drawing from an extensive technical report (Loeb and Miller 2007). Our primary sources of information were state statutes and administrative codes, accessed via LexisNexis. The initial data collection occurred in the summer and fall of 2005, with an additional wave of data collection in the fall of 2006.[1] We

1. We characterize the national state-level policy context as it was in 2005–6. While some aspects of these policies may have changed, the full picture is likely to look quite similar today.

initially compared the across-state policy summaries compiled by the Education Commission on the States with current state statutes and administrative codes, correcting and updating the policy descriptions where required. We also conducted our own search of each state's documents using a common set of keywords for each policy area to ensure a thorough review of all relevant language. We consulted state Web sites for additional information when the statutes and regulations were unclear. In the fall of 2006, we again conducted keyword searches on LexisNexis to fill in data missing in the policy descriptions compiled by the National Association of State Directors of Teacher Education and Certification (NASDTEC). Data for one policy aspect—how states hold teacher preparation programs accountable—were pulled from Education Week's Quality Counts 2005 (Education Week 2005).

We also provide an overview of extant evidence regarding the efficacy of professional development policies through a brief review of the literature. We focus our review on two types of studies: causal or carefully controlled correlational analyses of professional development or teacher education programs, and recent reviews of extant literature that have been published in reputable peer-reviewed journals. It is not our intent to provide an exhaustive review of the literature. For such work readers should refer to earlier studies and reviews, including those by Wilson, Floden, and Ferrini-Mundy (2002), Wayne and Youngs (2003), Clift and Brady (2005), Hill (2007), Harris and Sass (2007), and Yoon et al. (2007).

PROFESSIONAL DEVELOPMENT AND TEACHER EDUCATION THROUGHOUT TEACHERS' CAREER CYCLES

Professional development and teacher education, broadly viewed, are used in various ways throughout teachers' careers. From before a teacher begins teaching to well into his or her teaching career, professional development and teacher education programs are intended to strengthen skills and/or assist in achieving specific goals. State teacher education and professional development policies begin with pre-service and licensure requirements that affect teachers before they enter the teaching force. Induction and mentoring policies aim to support teachers as they transition into the workforce and during their first years of teaching. Ongoing professional development programs serve more experienced teachers. These programs can aid in the implementation of school reforms or simply help teachers improve their teaching in their current contexts. Finally, evaluation policies supplement professional development in that they can provide the information needed to tailor professional development to teachers' needs. This brief focuses on each of these areas in turn—pre-service requirements, induction and mentoring, ongoing professional development,

Table 1. Professional Development Goals and State Strategies

Type	Pre-service Education	Induction/ Mentoring	Ongoing Professional Development	Evaluations and Resulting Professional Development
Goal	• Prepare future teachers to teach public school students	• Assist new teachers in transitioning to classroom practice	• Keep teachers abreast of new curriculum and policies	• Assess teachers' continuing professional growth and provide ongoing assistance
Strategies	• Quantity of subject matter coursework • Field experience and student teaching • Methods of holding teacher preparation programs accountable for teacher quality	• Minimum length of participation • Mentor eligibility criteria • Resources provided to beginning teachers • Resources provided to mentors • Completion requirements • Link to licensure	• Minimum professional development credits/hours in specific amounts of time • Approval of professional development standards	• Plan requirements (i.e., inclusion of student performance) • Frequency of evaluations • Actions following unsatisfactory review • Evaluator

and evaluation strategies and programs. We use the phrases "professional development" and "teacher education" interchangeably throughout the rest of this essay. Table 1 outlines the goals and example strategies associated with the four types of professional development addressed.

PRE-SERVICE TEACHER EDUCATION

Teachers begin their experiences with professional development when they first enroll in a pre-service education program. Despite the marked growth in programs offering alternative ways to earn a teaching certificate, most new teachers continue to enter the labor force through the traditional route of completing an undergraduate or a graduate teacher preparation program. State-supported universities produce the majority of teacher candidates.

States' policies regarding teacher education programs are therefore a significant means through which states can influence teachers' qualifications and educational opportunities. These policies stipulate the amount of subject matter coursework, education-specific coursework, and clinical experiences (student teaching and field experiences, more generally) that all teacher candidates must complete in order to be eligible for full state certification. Most

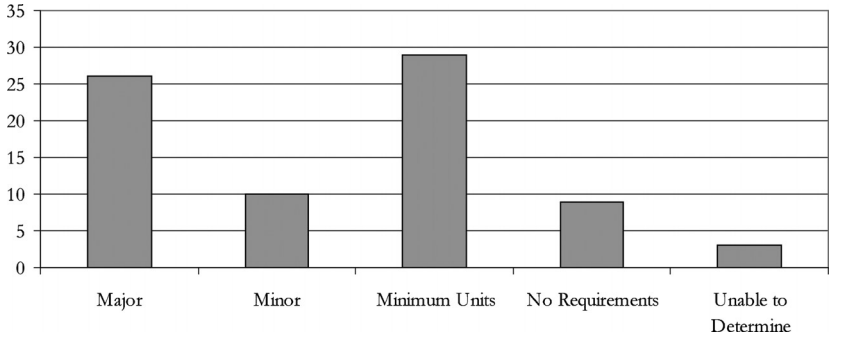

Figure 1. Frequency of States' Subject Matter Coursework Requirements for Middle and Secondary Teacher Candidates. Within a state, the minimum degree or coursework requirements may vary across subjects or within individuals across endorsement areas (i.e., the teacher needs a major for the first subject endorsement but can add additional endorsements with coursework less than a major). Major states include AL, CT, DE, ID, IL, KS, KY, LA, MD, MN, MS, MO, NE, NV, NJ, NM, NY, ND, OH, OK, PA, SC, TN, VT, VA, and WY; minor states, ID, IL, IA, LA, MI, MT, NV, TN, WI, WY; minimum units, AL, AR, CA, CO, CT, DE, DC, ID, IA, KY, LA, MI, MO, MT, NE, NV, NH, NM, NY, ND, OK, RI, SC, SD, TN, TX, VT, WA, and WI; no requirements, AK, AZ, GA, IN, ME, MA, OR, WA, and WV. We were unable to determine the requirements in HI, NC, and UT.

states require teachers to complete some prescribed amount of clinical experience and education-specific coursework. However, minimum subject matter coursework requirements tend to target high school teachers, although middle school teachers have been increasingly covered by these requirements since the passage of the No Child Left Behind Act of 2001 (NCLB).

Subject Matter Coursework

Figure 1 shows that most states require a major or a minimum number of coursework units in a teacher's subject matter specialty. For instance, twenty-six states require teachers to have a major in the subject area they teach, while twenty-nine states specify a minimum amount of coursework completed in their field.[2] In some states, minimum unit requirements may equate to a major, while in other states candidates may only need to complete units generally viewed as a minor.[3]

Student Teaching and Field Experience

In addition to subject matter coursework minimums, many states outline minimum requirements for student teaching and field experience. Field

2. NASDTEC does not specify how much coursework is required in this latter group.
3. Many states are counted twice in the numbers outlined above. Although the reason for this is not clear in NASDTEC, we surmise that the duplications are due to different coursework requirements across subjects within states. According to Education Week (2005), there are several states that require teachers to hold a major in the primary endorsement area but allow additional endorsements to be added with only a minor.

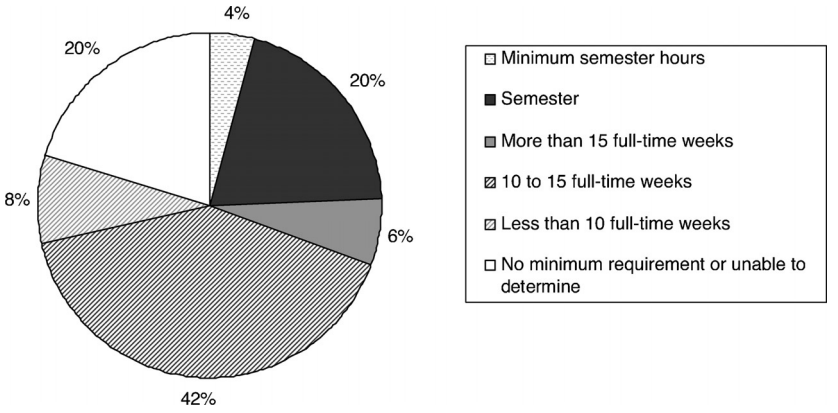

Figure 2. Minimum State Requirements for Student Teaching at State-Approved Teacher Preparation Programs. More than 15 full weeks include CO, MD, and WI; 10–15 weeks, AK, CT, FL, GA, IA, KS, KY, MN, MS, NE, OK, OR, PA, RI, SC, SD, TN, TX, UT, VT, and WV; less than 10 weeks, IN, MI, MO, NY, and VA; a semester, AL, DE, IL, LA, MA, MT, NH, NJ, NM, and OH; minimum semester hours, AZ and NV.

experience and student teaching provide opportunities for teacher candidates to draw connections between coursework and professional practice. At least thirty-seven states require field experience (often classroom observations) prior to their student teaching.[4] As student teachers, candidates assume greater instructional responsibilities under the supervision of an experienced teacher. At least forty-one states have established a minimum amount of time teacher candidates must spend as student teachers. As is shown in figure 2, most (twenty-one) states require between ten and fifteen full-time weeks. Another ten states require that candidates spend a semester student teaching.

During this pre-service time period in which teachers are student teaching, states have the ability to evaluate their would-be teachers. Individual pre-service programs can evaluate their own students, but at least twenty-two states require that student teachers be evaluated on the basis of a single statewide set of requirements.

States also hold teacher preparation programs accountable for the quality of the teachers they train through such means as publishing pass rates/ratings of institutions, publishing report cards for institutions, holding them accountable for the classroom performance of their graduates, and identifying low-performing programs. Failure to meet a state's standards jeopardizes the program's state accreditation and hence its graduates' eligibility for full state certification. Figure 3 outlines the means by which states hold teacher preparation programs accountable for teacher quality, the most common of which

4. Another five state policies regarding field experience requirements prior to student teaching could not be determined from available sources.

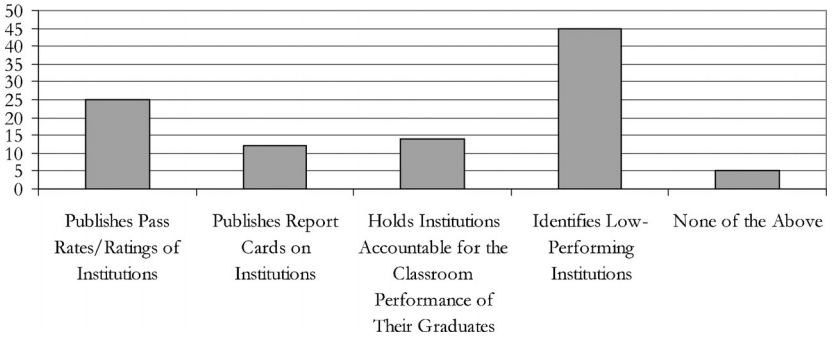

Figure 3. Means by which States Hold Teacher Preparation Programs Accountable for Teacher Quality, 2004–5. States publishing pass rates and/or ratings of institutions: AL, AR, CA, IL, IN, KS, KY, LA, MD, MA, MO, OH, OK, NE, NY, NC, SC, TN, VA, and WV. States publishing report cards: AL, IL, KS, KY, LA, OH, NC, SC, TN, and WV. States holding institutions accountable for classroom performance of their graduates: AL, CT, FL, IN, KY, LA, MO, OH, OK, NC, and SC. States identifying low-performing institutions: AL, AR, CA, CO, CT, FL, IL, IN, IA, KS, KY, LA, MD, MA, MO, NE, NJ, NM, NY, NC, OH, OK, PA, SC, TN, VA, WV, and WI. AK, AZ, DE, ID, and UT do none of the above.

is by identifying low-performing institutions. Forty-five states do so. Twenty-five states publish institution passage rates or institution ratings. Only twelve states publish report cards on each program, and fourteen states hold programs accountable for the classroom performance of their graduates.

Pre-service education requires substantial investments of both states and individual teacher candidates. Unfortunately, little is known about the effects of teacher preparation programs on student outcomes. While all states have policies regarding teacher education, there is very little available data including information on both teachers' preparation experiences and the outcomes of those teachers' students. Lack of evidence of effects on student outcomes in this area does not necessarily imply that there are no effects—only that we do not know what those effects are.

Extant research on the relationship between teachers' subject matter coursework and their students' outcomes is solely correlational and not entirely conclusive. Eberts and Stone (1987) find no relationship between the number of college-level math courses a teacher took and the math gains of fourth-grade students. In contrast, Monk and King (1994) and Monk (1994) find that students of teachers who took more math courses had better high school math gains, but the effects are generally modest. It may be that teachers' additional math courses make a difference for those teaching high school but not for those teaching elementary students. Moreover, it appears that there is a threshold effect such that there is little additional benefit of math courses beyond five math courses on students' math outcomes (Wilson, Floden, and Ferrini-Mundy 2002). Similar research on science courses is inconclusive—it appears that there is no beneficial impact of teachers' coursework in life

sciences on student outcomes, but there is a positive relationship between teachers' undergraduate coursework in physical sciences and student outcomes (Wilson, Floden, and Ferrini-Mundy 2002). There is little or no conclusive research on teachers' course taking in other subject areas. As such, the evidence provides only modest support for the value of math coursework for high school math teachers.

A number of studies have examined the relationships between student outcome gains and teachers' undergraduate majors. Betts, Andrew, and Rice (2003) find that elementary school teachers who majored in the subject they taught did not perform significantly better (i.e., their students did not gain in test scores to any greater degree) than did education majors. Conversely, middle and high school teachers who majored in the social sciences had students who gained significantly more than the students of education majors. Goldhaber and Brewer (1997) and Monk (1994), among others, find that teachers with math majors are more effective at raising students' math scores than are teachers without math majors.

The evidence for other areas of teacher preparation is even sparser. Most teacher preparation programs contain multiple courses in pedagogy. Only a few studies examine the relationship between pedagogy coursework and student achievement, and only a small subset of these provide any causal or correlational evidence. For example, Monk (1994) finds that content-related pedagogy coursework in mathematics is positively associated with student achievement and is more closely associated with higher gains than is additional content coursework. In their recent working paper, Harris and Sass (2007) use Florida administrative data to look at the causal relationship between pedagogical coursework and student outcomes. They do not find a significant association between student test score gains and coursework in pedagogy, education theory, or subject content. They do find, however, that content-oriented math professional development is linked to gains in middle school student outcomes in the three years following the receipt of the math professional development. This indicates that there may be a lagged effect of professional development such that the beneficial effects of math professional development occur in the years after the implementation.

Researchers have also attempted to understand the impact of education courses by examining the relationship between teacher certification and student outcomes. The review by Wilson, Floden, and Ferrini-Mundy (2002) finds that the extant research provides some weak evidence that the students of certified teachers perform better than those of uncertified or emergency-certified teachers, although there is some uncertainty as to the magnitude of the effect.

Nearly all preparation programs also include field experiences, such as student teaching, where these skills may be learned and practiced. Many close

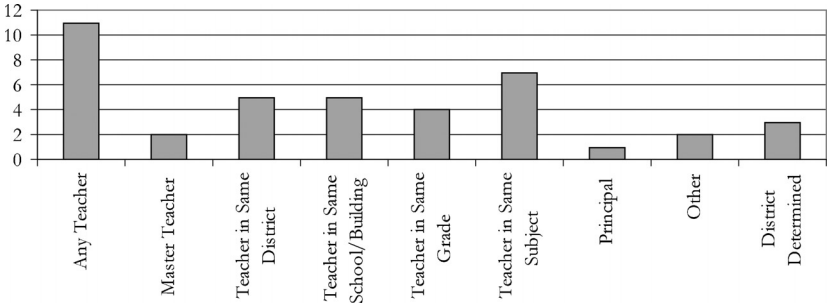

Figure 4. Individuals Eligible to Serve as Mentors in States' Beginning Teacher Induction and Mentoring Programs, 2005. Any teacher states include CA, CO, CT, DE, IL, IA, KY, MD, MA, NC, and SC; master teacher, AR and MI; teacher in same district, KS, LA, NJ, OK, and RI; teacher in same school, AR, IN, UT, VA, and WV; teacher in same grade, IN, OK, PA, and WV; teacher in same subject, CT, IN, OH, PA, UT, and WV; principal, KY; other, KY and MI; and district determined, MO, NM, and WI.

observers of teacher education believe that field experiences exert an important influence on teacher preparation. Nonetheless, there is only limited empirical research that links field experience to student achievements and none that sorts out the content and duration of field experiences that are the most influential. As summarized by Wilson, Floden, and Ferrini-Mundy (2002) and in Clift and Brady (2005), evaluations of field experiences typically focus on teachers' perceptions of the problems of how experiences are structured or self-identified changes in beliefs or practice. Perhaps the most convincing evidence on the effects of field experience comes from studies that follow teachers during the first few years in the classroom, which show that teachers improve with experience.

INDUCTION AND MENTORING

Twenty-seven states require beginning teachers to complete some sort of induction and mentoring program. These programs vary along multiple dimensions, including the required minimum length of participation, eligibility criteria for serving as mentors, resources provided to beginning teachers and mentors, and completion requirements. Of the states that require beginning teacher induction and mentoring programs, the majority (fifteen) require teachers to participate for at least one year. Seven states require teachers to participate for at least one and a half or two years. Only three states require teachers to participate in induction and mentoring programs for at least three years, and two allow districts to determine the minimum length of participation.

Fellow teachers typically serve as mentors to beginning teachers, although Kentucky and Michigan allow nonteachers to fulfill this role. Fifteen states place additional restrictions on the types of teachers who are eligible to be mentors. As shown in figure 4, two states restrict mentor teachers to those designated master teachers, five require the mentor teachers to be in the same

Table 2. Completion Requirements of Beginning Teacher Induction and Mentoring Programs, 2005

Completion Requirement	Frequency	States
District determined	9	KS, MD, MI, MO, PA, RI, SC, VA, WI
State determined	18	AR, CA, CO, CT, DE, IL, IN, IA, KY, LA, MA, NJ, NM, NC, OH, OK, UT, WV
Performance assessment or evaluation	12	AR, CA, DE, IN, IA, KY, LA, MA, NJ, NM, OH, WV
Formative assessment	2	CO, IL
Portfolio assessment	2	CT, NC
Other	3	CA, OK, UT
Completion linked to licensure	23	AR, CA, CO, CT, DE, IL, IN, IA, KY, LA, MD, MA, MO, NJ, NM, NC, OH, OK, PA, SC, UT, WV, WI

district, and four require them to be in the same grade as the beginning teacher. Kentucky allows principals to serve as mentors. Figure 4 outlines the number of states with specific requirements regarding the eligibility of teachers and administrators to serve as mentors for beginning teachers.

Beginning teacher induction and mentoring programs can be time and energy intensive, so many states offer mentors and beginning teachers a variety of resources to ease the burden of participating in such programs. Examples include additional training and salary supplements for mentors and release time or additional professional development for mentors and beginning teachers. Only one state, California, provides the possibility of a reduced workload for mentor and beginning teachers to facilitate opportunities for mentors and beginning teachers to work together on an ongoing basis, while fourteen states provide additional release time to serve this purpose. To aid in the professional acculturation of beginning teachers, programs in nine states provide extra professional development activities. Twelve states provide supplemental salaries for mentor teachers to help compensate them for their increased time constraints and responsibilities, and fourteen states provide extra training for mentor teachers.

Most states that require beginning teacher induction and mentoring programs tie successful completion of the program to licensure. Most often teachers advance to the next level of teaching license upon completion of the induction program. Nine states allow the districts to determine what constitutes "successful completion" of induction programs, while states determine this in eighteen states. There is substantial variation among these states with regard to the detail of the state guidance. Table 2 outlines state requirements for successful completion of the mentoring programs.

Transitioning from pre-service to full-time teaching can be difficult. The added responsibilities and stresses of managing a full-time teaching schedule

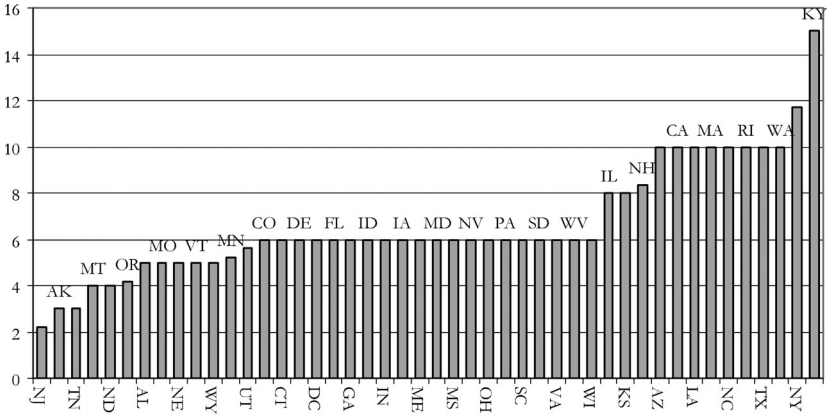

Figure 5. States' Requirements of Semester Credit Hours Achieved in Five Years. We were unsure how to translate the requirements in AR, HI, MI, NM, and OK into semester hours.

with new students in a new context can prove overwhelming. Beginning teacher mentoring and induction programs are geared to provide newer teachers with support from more experienced faculty to assist them with this transition. These programs, if they work well, should make new teachers' lives easier and their teaching better, thus helping both the teachers and their students.

Although there is not much definitive research assessing the effects of beginning teacher mentoring and induction programs on student outcomes, one recent study finds that these programs help to retain teachers in their current programs. Reed, Rueben, and Barbour (2006) find that during the 1990s, California's Beginning Teacher Support and Assessment program, which cost approximately $3,370 per participant, improved elementary school teacher retention by 26 percent.

ONGOING PROFESSIONAL DEVELOPMENT

Districts do not cease providing professional development once teachers have completed their first years of teaching. In fact, many states require that districts continue to provide sufficient professional development to keep their teachers abreast of useful curricular and policy changes. Most states' policies require teachers to complete a specified amount of professional development activities every five years. Only five states require specific amounts of professional development to be obtained in less than five years, and only six states require professional development to be completed in more than five years.[5] Figure 5 outlines which states require the least to the most professional development credits converted to semester credit hours per five years. Most states'

5. Note that some states have different professional development time frames for different categories of licenses. We attempt to compare similar licensing requirements across states.

policies require teachers to complete six semester credit hours of professional development every five years. New Jersey requires the least professional development (2.2 semester credit hours in five years) and Kentucky requires the most, with 15 semester credit hours in teachers' first five years and completion of a master's degree in the second five years.

Little is known about the efficacy of different professional development programs. Testament to this lack of evidence is the 2007 What Works Clearinghouse Report (see Yoon et al. 2007), for which researchers read 1,300 studies about the effects of teacher professional development programs but found only nine that provided causal evidence. This review finds that programs with more hours of professional development training for teachers lead to positive and significant effects on student outcomes. Hill (2007), in another recent review of the literature, also finds that most effective programs involve a substantial time commitment, such as a two- to four-week summer program. In addition, Hill's and Yoon et al.'s reviews outline other aspects of high-quality programs identified by existing studies. First, the content of programs should be targeted on specific content-knowledge, subject-matter-specific instruction, and/or student learning. Saxe, Gearhart, and Nasir (2001), Kennedy (1998), and McCutchen, Abbott, and Green (2002) find this to be true for mathematics, science, and early reading professional development programs, respectively. Harris and Sass (2007) find that professional development focused on course content is positively and significantly related to student math outcomes in both middle and high school but less so in the elementary grades. However, they find no significant effect of reading-oriented professional development in any grade level.

Second, Hill (2007) also concludes that teachers' professional development should be linked to the district's or school's instructional goals and curriculum materials. Teachers are likely to make better use of the materials that their schools and districts provide if their professional development is tied closely to these resources. Third, there is a commonly held belief that professional development is more effective if it involves groups of teachers at the same school and includes active participation, such as reviewing student work, giving presentations, and planning lessons. However, there is no research that directly estimates the benefits of these features of professional development. Finally, Yoon et al. (2007) find that the extant research points to the need for professional development programs to be based on accepted theories of teacher learning and change.

EVALUATION AND RESULTING ASSISTANCE

Performance evaluations are a means to assess teachers' continued professional growth. For example, districts and schools frequently provide teachers

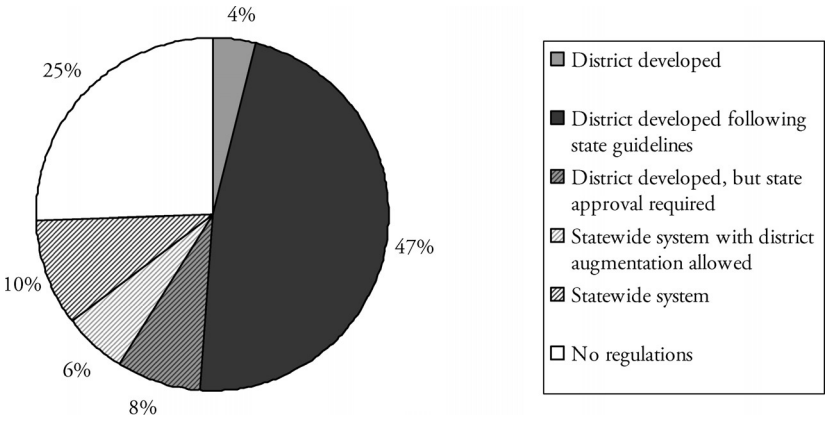

Figure 6. Types of Teacher Performance Evaluation Systems, 2005. District developed states include AR and MO; district developed following state guidelines, AK, AZ, CA, CO, CT, FL, IL, IA, KS, KY, LA, MA, MI, MN, NV, NC, ND, OH, OK, OR, SD, UT, VA, and WA; district developed but state approval required, IN, NE, TN, and WY; state system with district augmentation allowed, NM, SC, and TX; statewide system, DE, DC, GA, HI, and WV; no regulations, AL, ID, ME, MD, MS, MT, NH, NJ, NY, PA, RI, VT, and WI.

receiving unsatisfactory performance ratings additional professional development activities to enable them to improve in areas identified as weaknesses. Across the states, some performance evaluation systems are designed at the state level, while in other states system development is delegated to individual districts. There is also variation across the states in the frequency with which probationary and non-probationary teachers must be evaluated and whether or not student performance factors into the teacher's evaluation.

Figure 6 outlines the regulatory behavior of state governments in teacher evaluation systems. Thirteen states provide no regulations over districts' evaluation practices. Of the thirty-eight states that do provide some regulation, the majority (twenty-four) offer district guidelines but let the districts develop their own evaluation systems within those guidelines. For example, some states set the frequency of the evaluation and the broad standards to which teachers' performance should be judged but leave districts to figure out how to translate these standards into a more specific rubric for aligning observed performance with these standards.

The most common type of guidance states provide to districts concerns the frequency with which teachers must be evaluated (see figure 7). Typically, probationary teachers are evaluated more frequently than non-probationary teachers. Nineteen states mandate that districts evaluate probationary teachers at least once a year. With respect to non-probationary teachers, seventeen states mandate annual evaluations, while eight states mandate evaluations on a less frequent basis. Many states allow for less frequent performance

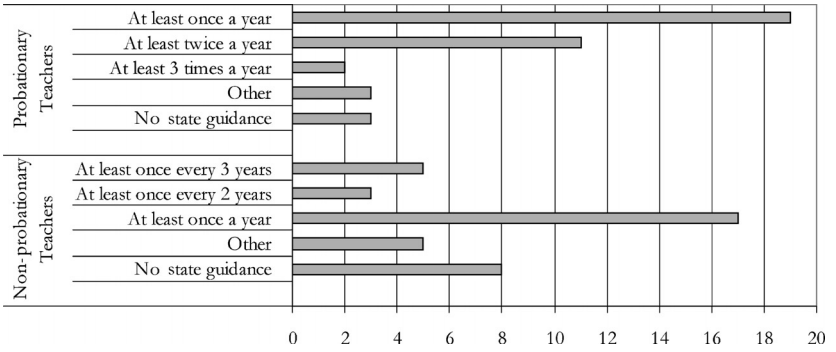

Figure 7. Frequency with which States Require Teachers' Performance to be Evaluated, 2005. For probationary teachers, at least once-per-year states include AR, CA, CO, DE, FL, GA, HI, IL, IN, KY, LA, MA, MI, NM, NC, TN, TX, VA, and WA; at least twice per year, AK, AZ, KS, NE, ND, OH, OK, OR, UT, WV, and WY; at least three times per year, MN and NV; other, IA, MO, and SC; no state guidance, CT, DC, and SD. For non-probationary teachers, at least once every three years include IA, KS, KY, LA, and MI; at least once every two years, CA, IL, and MA; at least once per year, AK, AZ, AR, CO, DE, DC, FL, GA, HI, NV, NM, NC, ND, OK, TX, WA, and WY; other, MO, OH, SC, TN, and WV; and no state guidance, CT, IN, MN, NE, OR, SD, UT, and VA. AK, CA, DE, IN, HI, KS, and TX allow for less frequent evaluations for certain teachers.

evaluations for certain teachers, usually those with previous successful evaluations.

With the advent of the accountability age, debate has become heated regarding two aspects of teacher performance evaluations: whether or not teachers are evaluated based on their students' performance and who conducts the evaluation. Most states offer no guidance on the appropriateness of evaluating teachers based on the performance of their students. However, as shown in figure 8, student performance is a required component of the teacher evaluation systems in twelve states. Twenty-three states offer no guidance on who should conduct teachers' evaluations. In most states, a teacher's supervisor or administrator is responsible for conducting the performance evaluation.

Unfortunately, there is little research on the efficacy of frequent as opposed to infrequent evaluations, nor is there much in the literature regarding who is the best evaluator for a teacher. Frequent evaluations of probationary teachers would likely provide supervisors and administrators with more information to assist them in making better tenure decisions, which might lead to a more effective teaching force. Similarly, more frequent evaluations of non-probationary teachers may allow administrators and supervisors to provide better and more targeted assistance to struggling teachers, helping them to refine their practice faster and earlier in their careers. However, frequent evaluations require substantial time as well as the cooperation of both teachers and evaluators. This combination has been difficult to achieve in most districts.

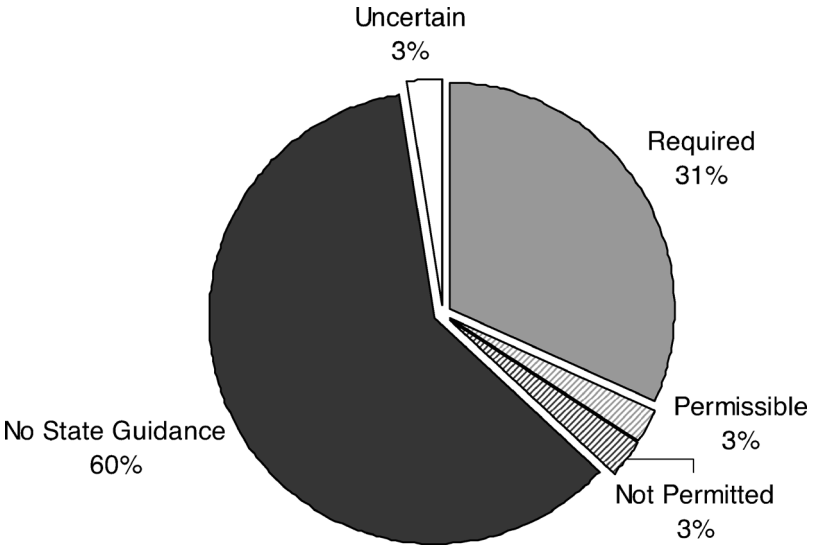

Figure 8. Whether or Not Teachers are Evaluated on Student Performance. Required states include CA, CO, DE, FL, GA, KS, LA, NM, OK, TN, TX, and VA; permissible, MA; not permitted, IN; no state guidance, AK, AZ, AR, CT, DC, IL, IA, KY, MI, MN, MO, NE, NV, NC, ND, OH, OR, SC, SD, UT, WA, WV, and WY. We were unable to determine the policy in HI.

California's Peer Assistance and Review program is one example, constructed jointly by the California teachers' union and district and state policy makers, in an effort to provide increased evaluation and targeted assistance to struggling teachers. We know of no evaluations of this program's effect on student learning.

Utilizing student performance for teachers' evaluations is complex. In theory, if a teacher's goal is to raise student performance, evaluating teachers on the achievement of the students in their classrooms makes sense. The trick is to determine the correct way to attribute student outcomes to teachers and to create a system that does not provide perverse incentives to teachers (such as to seek to teach some students but not others). Recent programs in California, Colorado, Delaware, Florida, Georgia, Kansas, Louisiana, New Mexico, Oklahoma, Tennessee, Texas, and Virginia may provide insight into the feasibility of this approach, but evaluations are still in the early stages.

CONCLUSION

Given the investment in professional development throughout teachers' careers, it is important to understand not only what sorts of policies different states are implementing but also the results of these policies. Are states achieving the goals of their professional development policies and training better teachers?

As is the unfortunate case in much of education policy, we have little evidence on which to assess these disparate state policies. Some mentoring and induction initiatives appear beneficial in helping to retain new teachers, but we know little about the majority of such programs. In addition, as Hill (2007) notes, effective ongoing professional development programs usually require large time commitments and are linked to the district's or school's instructional goals, curriculum, and materials. Most professional development programs do not share these features. There is little or no evidence on how best to evaluate teachers in order to help them grow professionally.

Yet while the evidence is weak, it is difficult to contemplate an effective education system that does not include infrastructures to support teachers in becoming more effective in the classroom, whether by improving their own skills or simply their familiarity with new curriculum or instructional programs. As states, districts, and schools experiment with different approaches, we can only hope that we will learn from our experiences so that professional development throughout a teacher's career becomes more successful at facilitating effective teaching.

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