



Ensuring Teacher Quality in Pennsylvania

Executive Summary

To say that quality teaching is the cornerstone of an effective education, is like saying that air is necessary for people to breath. The statement is obvious, yet quality teaching remains a difficult concept to define and measure.

According to the highly qualified teacher provisions of the No Child Left Behind Act (NCLB), a highly qualified teacher is someone who is fully certified, has a bachelor’s degree and has completed a content area major or passed a content area test in the subject he/she is assigned to teach. While this definition seems relatively straightforward, its specificity fails to recognize the challenges that some districts face in finding and retaining quality teachers.

Unfortunately, NCLB does little with respect to policies, support, or flexibility to help high-poverty urban, suburban and rural school districts attract and retain better teachers. In Pennsylvania, this is a significant problem and has resulted in widespread use of emergency certificates. According to the Governor’s Commission on Training America’s Teachers created during the Fall of 2005, “several districts - primarily urban, older suburban, and rapidly growing suburban and rural districts - have been heavy users of emergency permits.” A quick look at some of the statistics below, substantiates this claim:

Top 10 Pennsylvania School Districts with Heavy Use of Emergency Permits 2001-02 through 2004-05

School District	2001-02	2002-03	2003-04	2004-05	Grand Total	% of State Total	Cumulative %
Philadelphia City SD	2,650	2,597	2,389	2,167	9,803	48.2%	48.2%
Harrisburg City SD	90	68	83	90	331	1.6%	49.9%
Reading SD	59	64	61	102	286	1.4%	51.3%
Downingtown Area SD	61	54	51	51	217	1.1%	52.4%
East Stroudsburg Area SD	46	62	48	33	189	0.9%	53.3%
York City SD	50	44	42	36	172	0.8%	54.1%
Lancaster SD	27	27	42	58	154	0.8%	54.9%
Chester-Upland SD	53	39	23	31	146	0.7%	55.6%
Neshaminy SD	34	29	38	44	145	0.7%	56.3%
Upper Darby SD	29	30	26	42	127	0.6%	56.9%
Pocono Mountain SD	29	41	28	12	110	0.5%	57.5%
Chambersburg Area SD	18	24	23	25	90	0.4%	57.9%

(from <http://www.pateach.org/documents/teacherEdSummary.htm>)

In part, these problems are related to the fact that teachers who begin teaching in high-poverty schools tend to leave the profession more quickly than those who teach in other schools. These types of school districts tend to have little stability with respect to students, teachers, and administrators. The conditions in these communities with respect to poverty and mobility make it difficult to attract highly qualified candidates and even more difficult to get teachers to make long-term commitments.

These issues, along with teacher shortages in specific subjects such as elementary education, special education, mathematics, English, various science disciplines, foreign languages, and social studies were the driving force behind the following set of policy recommendations - each of which, are meant to address the need for highly qualified teachers in Pennsylvania.

Moving beyond narrow definitions of “highly qualified”, the following recommendations identify several important, though often neglected, aspects of quality. These aspects include dedication to the field of teaching, connection to the community in which the teacher is located, and the general effectiveness of the teacher with respect to the achievement of students. Our recommendations are organized within three broad and overlapping areas that have the potential to increase the number of highly qualified teachers in the Commonwealth. These areas are each described below.

Recruitment, Preparation and Induction

These recommendations focus on the role of higher education in preparing teachers, the state’s role in assisting school districts to recruit qualified teachers, and the school district’s responsibility to mentor incoming teachers.

Our analysis of higher education affirms the need for well-structured, high-quality preparation programs and identifies key steps to improve state communication with respect to expectations and monitoring of standards that could result in better prepared teachers.

In terms of recruitment, our research suggests that a greater and more focused effort must be made to make qualified candidates aware of school district openings and that the state could facilitate efforts to publicize and match such openings to qualified candidates. Our investigation also suggests a growing interest in alternative recruitment and certification programs. While these types of programs are growing in popularity, our recommendation advocates for the close monitoring of these programs to insure that teachers certified in this manner are as equally and effectively prepared as those certified through more traditional programs.

Finally, induction programs utilizing veteran teachers are recommended to improve teacher retention. The effectiveness of good mentoring programs is well documented and is an important aspect in the continued professional development of new teachers.

Math and Science Certification

According to Governor Rendell, the Commonwealth’s economic future will be predicated on our ability to provide students with an education that effectively prepares them for success in the workplace and focuses on higher levels of mathematics and physical science in the curriculum. In order to facilitate this goal, our recommendation is the creation of a “Highly Qualified Teacher Corps” that will recruit female and minority teaching candidates to these areas by providing targeted scholarships that require a five year commitment to teach within the state of Pennsylvania.

Engagement of Higher Education

Institutions of higher education have significant influence over the structure and content of teacher education programs. As previously mentioned, our analysis suggests that these institutions should also play a larger role in expanding the supply of highly qualified teachers, particularly in urban areas, through more proactive outreach and support.

Specifically, teacher education institutions could provide candidates with mentoring and support throughout high school and college, enabling more individuals interested in teaching to see it as a viable career option. In addition, teacher education institutions could form collaborative professional partnerships with junior and community colleges to identify and recruit quality teacher candidates into four year teacher programs. Finally, these institutions should seek out opportunities to help communities develop their own highly qualified teaching staff by recruiting community members, paraeducators, career change adults, and other quality candidates into teacher education programs, while providing them with the necessary supports for them to succeed.

Conclusion

Developing and retaining a highly qualified teaching force in certain school districts and in certain curricular areas is a significant challenge. Because this problem is complex and can be attributed to many causes, no single policy proposal will be effective in changing the current situation. Instead, our analysis has suggested the need for a multifaceted approach that looks at institutions of higher education, school districts, and the state as major players that could work together to increase the pool of qualified teachers, recruit these teachers for the schools and subjects where they are needed the most, and then retain these teachers into the future. The challenge for Pennsylvania is for these systems and institutions to effectively work together for the betterment of children across the state.

Ensuring Teacher Quality in Pennsylvania

If efforts to raise student achievement are to succeed, all school children must have access to highly skilled teachers. Good teachers know their subjects deeply and understand how to teach them. They understand how standards, curriculum, and assessments interact and how to use these tools in their classrooms. They know how to diagnose student learning and adapt instructional approaches to meet student needs. And, they know how to adapt to ever-changing classroom situations. Research increasingly demonstrates that teachers are critical influences on student learning.

The Elementary and Secondary Education Act (ESEA), as reauthorized through the No Child Left Behind (NCLB) Act of 2001 has added a number of important components and requirements within the federal law regarding teacher qualifications. One important requirement is that all teachers of core academic subjects, including elementary grades, be "highly qualified" by the 2005-2006 school year. The law lists as core subjects English, reading/language arts, mathematics, science, foreign language, civics and government, economics, the arts, history, and geography.

The federal law also places boundaries around the definition of a highly qualified teacher. According to the U.S. Department of Education, a highly qualified teacher is one who is fully certified, has a bachelor's degree and has completed a content area major or has passed a content area test in the subject he/she is assigned to teach. The law encourages states to employ both traditional teacher preparation programs and alternative routes to meet the goal of a highly qualified teacher in every classroom.

However, each state has the discretion to decide what highly qualified means and what steps will be required for their teachers to meet the definition. This makes the concept of a teacher being highly qualified quite fluid. The specific minimum criteria identified in NCLB are quite general and states have had varying



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degrees of difficulty in meeting these requirements. In Pennsylvania, a highly qualified teacher must be fully certified, have a bachelor's degree, a content area major and have passed a content area test. In addition, to be fully certified, teachers must complete pedagogical course work in education, including a sequence of field experiences with a minimum of 12 weeks of student teaching.

Understanding the importance of having highly qualified teachers educate students in Pennsylvania's schools, five educational professionals participating in the 2005-06 Educational Policy Fellowship Program came

together to explore, analyze and make policy recommendations that would help to improve teacher quality in Pennsylvania. Project members consisted of stakeholders representing diverse views and perspectives from school district administration, academia and educational resource development. A complete list of members is included in this paper. (*See Attachment 1*)

Recognizing that the term “highly qualified” with respect to teachers is contested space, and will continue to be contested space, project members agreed to develop a set of policy recommendations that focused on areas of consistent need within the field of public school teaching - the continual shortage of qualified teachers in certain geographic areas and in certain subjects across Pennsylvania. The 2002-03 preliminary report on highly qualified teachers issued by the Pennsylvania Department of Education (PDE) substantiates this concern by indicating that 3,545 teachers working in school districts do not meet the state’s definition of highly qualified.

Working within Pennsylvania’s definition of highly qualified, members identified several aspects of quality as central to addressing the shortages identified above. These included, dedication to the field of teaching, connection to the community in which the teacher is located, general effectiveness with respect to the achievement of students, and the achievement of students from historically marginalized groups such as females and minorities. Using the research findings and information obtained, workgroup members developed nine policy recommendations for consideration by the Commonwealth. Presented with each policy recommendation is the rationale, the current state of practice in Pennsylvania and the supportive research that guides each proposal. Recommendations are organized within three broad and overlapping areas that have the potential to increase the number of highly qualified teachers in the Commonwealth. These areas are:

- Recruitment, Preparation and Induction
- Math and Science Certification
- Engagement of Higher Education

Teacher Quality Policy Recommendations

These are the nine policy recommendations developed by workgroup members for consideration by the Commonwealth. Each policy recommendation discusses the rationale, the current state of practice in Pennsylvania and supportive research. Recommendations are organized within three broad areas that have the potential to *increase the number of highly qualified teachers in the Commonwealth*.

Recruitment, Preparation and Induction Recommendations

1-A. Review the structure for the state's teacher education program, including core knowledge, pedagogical skills training, and sequential field experience for all teaching candidates to ensure state-wide quality.

1-B. Require Pennsylvania's institutions of higher education for teacher preparation to adopt the National Council for Accreditation of Teacher Education (NCATE) standards.

2. Invest in resources and websites (with appropriate training) that will assist school districts in the development of promotional materials, campus visits and intensive teacher recruitment.

3. Increase the pool of qualified teachers by examining the effectiveness of non-traditional teacher recruitment and preparation programs.

4. Ensure that induction programs are of high quality and include mentoring from veteran teachers.

Math and Science Certification Recommendations

5. Develop a "Highly Qualified Teacher Corp" for Pennsylvania's high schools to increase the number of female and minority college students seeking teaching certification in the fields of mathematics and physical sciences.

Engagement of Higher Education Recommendations

6-A. Pennsylvania should develop a "pipeline program" of intending teacher candidates (K-12) using the existing 95 teacher education institutions, providing candidates with mentoring and support throughout high school and college.

6-B. Each of the existing 95 teacher education institutions in Pennsylvania should form collaborative professional partnerships with junior and community colleges to identify/recruit quality intending teacher candidates.

6-C. Pennsylvania's 95 teacher education institutions should seek out opportunities to recruit community members, paraeducators, career change adults, and other quality teacher candidates, providing necessary support/transition to their programs.

Recruitment, Preparation and Induction

Recommendation 1-A

Review the structure for the state’s teacher education program, including core knowledge, pedagogical skills training, and sequential field experience for all teaching candidates to ensure state-wide quality.

Recommendation 1-B

Require Pennsylvania’s institutions of higher education for teacher preparation to adopt the National Council for Accreditation of Teacher Education (NCATE) standards.

Rationale

Reviewing the structure of state approved teacher preparation programs is necessary for the 501 school districts to be assured that any teacher hired from any of the teacher preparation programs will have similar knowledge bases and proven pedagogical skills.

There are a significant number of schools and classrooms in the State of Pennsylvania that are staffed with teachers who do not meet the NCLB criteria of highly qualified teacher. This situation exists even if all teachers who meet the credential requirements are considered to be high quality. Again, we are limiting ourselves to the defined criteria of “highly qualified” and not a true assessment of the quality of these teachers. Even then, depending on which data set you use, state or federal government, the percentage of teachers who are not highly qualified based upon NCLB criteria, is between 10% and 32%.

Pennsylvania Practice

Pennsylvania statutes governing teacher education programs are “relatively brief” according to the Governor’s Commission on Training America’s Teachers (2005c:1). Existing statutes require schools to employ “the necessary qualified” teachers to operate schools. This language is contained in The Public School Code of 1949. Although the Code has been modified many times since 1949, there have been no substantial changes to what constituted a qualified teacher in Pennsylvania until the passage of No Child Left Behind (NCLB).

The School Code requires teachers to be at least 18 years old, of good moral character, and a citizen of the United States. In addition, teachers must hold valid teaching certificates issued by the State.

Some of the modifications that did occur in the requirements for certification and employment in the State’s public schools between 1949 and NCLB are as follow: criminal history clearances, child abuse clearance, and continuing professional development after employment.

The regulation of teacher preparation programs is under the control of the State Board of Education. Authority to set standards for teacher preparation programs rests with the Pennsylvania Department of Education (PDE). PDE approves teacher preparation programs that meet the 10 criteria outlined in the School Code and also meet specific guidelines developed by PDE for each certification area.

The 10 criteria outlined in the School Code include knowledge of the content to be taught, child development, methods of planning instruction, instructional strategies, communication skills, and formal and informal assessment strategies. In addition, teachers must pass tests in reading, writing, mathematics, and content knowledge as well as examinations of their pedagogical skills. Recently with the revision of Chapter 49 regulations, the period between reviews of teacher preparation programs by PDE has been extended from five to seven years.

Upon achievement of these criteria, teachers receive a license to teach for six (6) years. During that time, they must complete 24 hours of additional course work and complete a one-year induction program.

Even with these seemingly specific criteria, colleges and universities are free to formulate their programs within well-defined standards which allow flexibility in developing programs across differing types of institutions. Pennsylvania stipulates specific criteria and standards for each certification program that must be met by teacher education candidates before they can be recommended for certification. The State requires that teacher education programs contain the “equivalent content of academic majors for areas to be taught...courses that meet the state standards, sequential field experiences and a minimum of 12 weeks of student teaching” (2005c:2).

Supportive Research

Wenglinsky concluded, in his summary on “How Teaching Matters”, that “policymakers are correct in emphasizing the importance of improving teacher quality as a mechanism for improving student academic performance” (2000:2). The Education Trust reached a stronger conclusion in stating that “teacher quality is the single most important factor in determining the success of children in school, more than race, poverty, or any other outside influence” (2003:2).

Gitomer, in his forward to Wenglinsky’s “How Teaching Matters”, states that there is ample evidence “that well-prepared teachers produce successful learners” (2002b:2). And, again in the forward to Wenglinsky’s “Teaching the Teacher: Different Settings, Different Results”, Gitomer wrote that “there is almost universal agreement that student success is predicated on effective teachers” (2000:2).

The National Governors Association reached the same conclusion in its 2004 report, “Developing State Policy to Ensure a ‘Highly Qualified’ Teacher in Every Classroom.” Koppich



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summarized these findings in concluding that “Teacher effectiveness trumps nearly every other variable...as the determinant of student achievement” (2004:2).

Some research has concluded that the pathway taken into the teaching profession has found no discernable difference in the quality of the teaching pool. Cochran-Smith’s analysis of this body of research led her to conclude that many years of research on the various kinds of teacher preparation programs “have not shown the superiority of one route” (2006:21). Proponents of alternative pathways to teacher preparation or certification have great cause for celebration if this conclusion is correct.

Yet, this conclusion seems incongruous with common sense and is definitely out-of-step with the works of Darling-Hammond (2004) and the review of research conducted by the Center for the Study of Teaching and Policy (CTP, 2005). Darling-Hammond found teacher preparation

and certification to be the strongest correlates of student achievement in reading and mathematics.

Darling-Hammond's work is generally cited as the most authoritative on the topic. In short, this synthesis of work concludes that teacher quality is greatly influenced by the pathway to the profession. Darling-Hammond concluded that teachers who obtained better scores on licensure exams are more effective teachers than those with lesser scores.

This conclusion is supported by the body of works the CTP cited in its summary of pertinent research on teacher preparation under its third conclusion, "Teacher Preparation Works: It Helps Candidates Acquire Essential Skills and Knowledge and Develop Teaching Skill." Wilson, Golden, and Ferrini-Mundy (2001), in an earlier summary of teacher preparation research, had concluded that "the pedagogical aspects of teacher preparation matter, both for their effects on teaching practice and for their ultimate impact on student achievement." Monk (1994) similarly found that teachers' completing courses in teaching methods were positively correlated with student achievement in math and science.

The inverse was found to be true in studies that focused on the effect teachers with emergency permits had on student achievement. Goe (2002) found that higher numbers of emergency certified teachers in a school was directly related to low student achievement. Fuller (1998) reached the same conclusion in finding that students who had fully licensed teachers outperformed students enrolled in classes taught by unlicensed teachers.

An additional contribution that teacher preparation programs make is an increase in the rate of retention of new teachers. Shen (2003) studied the attrition rate of new teachers and found that 34% of those sampled had left teaching after five years. However, those teachers who had completed a traditional teacher certification route - student teaching, certification, and induction - were 111 percent

more likely to remain in teaching than new teachers who did not. Boe, Bobbitt, Cook, and Weber (1997) similarly concluded that teachers, who participated in the traditional teacher preparation pathway, including training in pedagogy, are less likely to leave teaching than those who obtained partial certification.

In short, these works support the proposition that the quality of teaching is greatly improved when candidates to the profession participate in traditional teacher education programs. Furthermore, CTP's analysis of teacher preparation programs that follow the standards of the National Council for Accreditation of Teacher Education (NCATE). NCATE produces teachers who demonstrate a higher quality of teaching as measured in student achievement. Conclusion four of CTP's analysis is that NCATE makes a difference in teacher preparation (2005).

ETS studied the impact of NCATE teacher preparation programs on the pass rate on PRAXIS II exams. ETS found that the pass rate for teacher candidates was higher than that of graduates of non NCATE institutions (1999). Darling-Hammond (2000) concluded matriculation through an NCATE affiliated teacher preparation program was one of the two greatest factors in teacher quality in a state. NCATE's (2005) own survey of deans and coordinators in the NCATE system reached the following conclusions: 93 percent of respondents stated that NCATE standards resulted in better alignment between standards, curriculum, instruction and assessment and, 84% reported that NCATE standards have led to more attention to teacher candidate knowledge and skill in helping all students learn.

Recruitment, Preparation and Induction

Recommendation 2

Invest in resources and websites (with appropriate training) that will assist school districts in the development of promotional materials, campus visits and intensive teacher recruitment.

Rationale

Schools in Pennsylvania that have a history of using high numbers of emergency permits need to employ marketing strategies to attract new teachers to their districts. It is estimated that the average cost of replacing every teacher who leaves a district is approximately 20% to 200% of the departing teacher's salary (WestEd R&D Report, 2005:7).

A striking indicator in the need for Pennsylvania to take a proactive stance in recruitment is the fact that 32 states have enacted laws to attract and retain teachers. Among the actions taken by other states is raising the minimum teacher salary at the state level. In addition, some states have specifically provided for signing bonuses and merit pay increases (CTP, 2001:21-24). Other incentives include college scholarships and loan forgiveness. One very notable incentive is Baltimore's offer of \$5000 toward the closing costs on a home in the city and \$1200 in relocation expenses.

Pennsylvania Practice

The shortage of highly qualified teachers in Pennsylvania exists despite the fact that Pennsylvania is a large-scale producer of certified and licensed teachers. However, a very large percentage of those who graduate from teacher education programs in the State, including those that are heavily supported with State taxpayer funds, take their training and skills to nearby states. In fact, Pennsylvania is an "exporter" of highly qualified teachers to New Jersey, New York, Maryland, Ohio, and Virginia. Higher salaries, and in some cases, better teacher development and induction programs serve as forces of attraction to these new teachers.

It would seem that the problem is not in the quantity of teachers trained in the State. Rather, it is in keeping graduates of the State's teacher preparation programs in the State after graduation and certification.

Supportive Research

There are presently 95 institutions in Pennsylvania that offer teacher education programs (2005b:6). According to the Governor's Commission on Training Teachers, Pennsylvania is one of the five leading states in training teachers with 13,000 new teachers finishing each year (2005:1). In 2003-04, the State produced 15,844 new teachers (2005b:1). The diversity of offerings and campus experiences differ tremendously from those offered in the



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internationally recognized universities like Temple and Penn State to the traditional “teacher colleges” in Lock Haven, East Stroudsburg, Edinboro, and Millersville. Even the private colleges in Pennsylvania contribute large numbers of teacher candidates each year: Bucknell, Lycoming, Lebanon Valley, Kutztown, Seton Hill, and Grove City.

In spite of these numbers of new teachers trained each year, the State issues thousands of emergency permits each year. The State issued an average of over 5,000 emergency permits in 2001-02, 2002-03, and 2003-04 (2005b:2). Why is this necessary? Would it be necessary if the State held on to its own graduates?

To answer this question we should look at where the teachers with emergency permits teach. The fact is that the greatest majority, over two-thirds, of teachers with emergency permits work in 12 of the 501 school districts in the State (2005b:3). These 12 districts are the largest urban centers in the State or among the fastest growing districts in the State. In fact, Philadelphia alone utilizes 48.2% of the teachers with emergency permits.

Clearly the problem is not in the number of teachers trained in the State. What, then, is the problem? Why do new teachers that are trained in Pennsylvania not teach in the schools that need them the most? Is it that the State’s teacher preparation programs do not train their graduates for the neediest schools?

One of the answers to this question is that districts in other states actively recruit new teachers out of Pennsylvania. They set up shop on campus each year much the same way that Fortune 500 companies do. These visits are advertised months ahead of time and prospective graduates sign up for presentations and interviews and prepare portfolios for these districts.

Who are these districts? Are they much different from those in Pennsylvania that need their services? The answers are that these districts mostly represent the large urban and

suburban areas of surrounding states. The various county systems outside of Washington, D.C. (Prince George, Prince Philip, Prince William) are in attendance at job fairs across Pennsylvania. So, too, are the large counties in Maryland, New Jersey, New York, and Ohio. So much so, in fact, that these county and urban districts are well-known to undergraduate students in the early stages of their preparation programs. Even Baltimore City School District, reputed to be one of the most troublesome districts in terms of student discipline and violence, fills its interview slots at these fairs.

Recruitment, Preparation and Induction

Recommendation 3

Increase the pool of qualified teachers by examining the effectiveness of non-traditional teacher recruitment and preparation programs.

Non-traditional teacher recruitment and preparation programs have grown in popularity in recent years, and have the potential to attract college graduates and mid-career professionals from other fields to the field of teaching. There have been few systematic evaluations of these programs and their impact on teacher quality (Mikulecky, Shkodriani, & Wilner, 2004). Alternative programs should only be supported if they have a demonstrated track record of helping to prepare teachers fully invested in their new careers and possessing the skills and dispositions necessary for successful classroom teaching.

Rationale

Since the early 1990s a variety of new programs have had a growing influence on the type of candidates entering the teaching profession. These programs, range from alternative recruitment programs that focus on recruiting individuals from other career fields into education to alternative certification programs which are actually able to provide training and recommend teachers for certification. According to a recent report from Harvard's Project on the Next Generation of Teachers, "The research generally indicates that such programs do attract people who might otherwise not enter teaching" (Johnson, Birkeland, & Peske, 2005, p. 9).

For prospective teachers, the possibility of avoiding traditional coursework is a strong incentive in their consideration of a career within the field of teaching (Johnson, et. al., 2005). According to a recent national survey by Public Agenda (2000) half of the graduates in careers other than teaching believed that they would change careers at some point in the future. Eighteen percent suggested that a career in education would be something that



Alternative recruitment programs focus on recruiting individuals from other career fields into education.

they would "very seriously consider." While these programs may have a positive influence on teacher recruitment, questions about the quality of the candidates remain. In this regard, much of the research is inconclusive. The studies that have been completed in this area are often contradictory and used by supporters or detractors of alternative programs to make their case (Johnson et. al., 2005). Some of the research in this area will be examined below.

Pennsylvania Practice

Examples of alternative recruitment and preparation programs include Teach for America, The New Teacher Project, Transition to Teaching, and Troops to Teachers. Because these programs are national in their scope, each of them has had some influence on teacher recruitment in PA - though most of this activity has been focused on the city of Philadelphia. For example, Teach for America (TFA) has placed nearly 500 teachers in the Philadelphia School District over the past 3 years (http://www.teachforamerica.org/supporters_philadelphia.htm), and a similar program, Philadelphia Teaching Fellows, associated with The New Teacher Project, is also focused on recruiting teachers from among the ranks of college graduates for Philadelphia's public schools.

Transition to Teaching is a federally supported, non-traditional program aimed at recruiting and training teachers for Philadelphia's Public Schools and is run as a collaborative project between the Philadelphia School District and Drexel University. According to U.S. Department of Education, "The Drexel/Philadelphia/Alabama/Chester-Upland project will select 375 mid-career changers and recent college graduates to be trained as highly qualified teachers through an online, streamlined teacher education program." (<http://www.ed.gov/programs/transitionteach/2004abstracts/pa.html>)

Troops to Teachers is a recruiting effort supported by the federal government to help military personnel move into teaching careers. This program is described as providing, "Referral Assistance and Placement services to military personnel interested in beginning a second career in public education as a teacher." (http://www.dantes.doded.mil/dantes_web/troopstoteachers/index.htm?Flag=True)

These descriptions show that there is a great deal of variation in these programs with respect to scope and methods. Except for Transition to Teaching, the other programs listed above utilize the Pennsylvania Teacher Intern

Certificate Program as the primary means to assist career changers in attaining Pennsylvania Teaching Certification.

According to the PDE website, the intern program, "enables the interested candidate to teach with an Intern Certificate while completing any educational requirements. Among the criteria that must be met to enroll in the program is a baccalaureate degree and approved GPA" (Accessed from www.teaching.state.pa.us/teaching/cwp/view.asp?a=7&Q=83436&teachingNav=|5572|, February 1, 2006).

To enter an "intern program" a candidate must pass the PPST and must be continuously enrolled in a sponsoring teacher preparation institution until the program is complete. The candidate may teach up to three years on an intern certificate. This program prepared almost 2,000 teachers across the Commonwealth between the 2001 and 2004 academic years (<http://www.pateach.org/documents/teacherEdBg.htm>).

Supportive Research

It is useful to organize the research on alternative recruitment and preparation programs into three general areas: the impact of these programs on the supply of teachers; whether or not the teachers recruited and trained in this way stay in teaching; and issues of teacher quality.

With respect to the supply of teachers, these programs do seem to increase the number of available teachers. As mentioned above, fast track routes to certification are attractive to potential career changers and help pull people into the profession (Johnson et.al., 2005). Several large scale studies have shown that the teachers recruited by these programs are often part of under-represented groups such as males, people over 25, minorities, and people who majored in math, science, or foreign language. (Shulman, 1989, Hawley, 1990). In addition some evidence suggests that these routes attract individuals who are interested in teaching in urban and high minority schools. (Natriello and Zumwalt, 1993).

As to whether or not these teachers stay in the field, the research is not conclusive. For example, Shen (1997) found that alternatively certified teachers predicted life long careers in education less frequently than those in traditional programs. At the same time, Clewell and Villegas (2001) in studying a specific alternative certification program called Pathways to Teaching, found that the 3-year retention rates (78-81%) were higher than the national average for all new teachers.

The quality of teaching provided by teachers from these programs remains hotly debated. Arguments over the effectiveness of Teach for America (TFA) teachers, provides perhaps the best example of this controversy. On the one hand, a study carried out by Decker, Mayer, and Glazerman (2004), found that TFA teachers had a positive effect on student math scores when compared with their certified, experienced colleagues. At the same time, research by Darling-Hammond, Holtzman, Gatlin and Helig (2005) suggests that TFA teachers were unable to create the same kinds of achievement gains as teachers prepared in traditional programs.

Overall, while the research remains inconclusive, the growth and popularity of these programs, coupled with their potential to recruit members of non-represented groups into the field of teaching, makes them an important area for further consideration and investigation.

Recruitment, Preparation and Induction

Recommendation 4

Ensure that induction programs are of high quality and include mentoring from veteran teachers.

Rationale

In Pennsylvania where induction programs are mandatory, this means restructuring the programs to include strategies proved to be effective in other states and model programs within the State. New teachers leave the field in alarmingly large numbers in the first few



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years of teaching. It would be safe to say that no other profession, requiring specific preparation, certification, and licensing requirements, is even close to teaching in this respect. Jerald and Boser (2000) noted that 23% of new teachers leave the field in the first three years. Ingersoll (2003) found that figure to be low and concluded that 14% left after the first year, 33% leave within three years, and almost 50% leave within five years.

Ingersoll's conclusion should not be a surprise. A United States Department of Education study, conducted by the National Center for Education Statistics, reached the same conclusion in 1997.

A "District Administrator" report states that the cost of teacher turnover each year is approximately \$330 million (January, 2006:30).

According to a report by the National Commission on Teaching and America's Future cited in that same report, the problem is not that we are not training enough teachers. Rather, the problem is a higher rate of teacher attrition.

Pennsylvania Practice

Pennsylvania currently requires all districts to provide induction programs to new teachers. The State does not, however, clearly define what is to be included in these programs beyond stating that a veteran teacher be provided to mentor the new teacher (Inductee).

Although having a PDE approved induction plan is required of all districts, the State provides only loose guidelines as to what is to be included in these plans. As a result, there is neither a specific delineation of topics that must be taught to new teachers, nor are there specified numbers of hours of required induction or mentoring. Thus, districts are free to determine for themselves what induction means within their borders.

Feir et al. (2003) stated that this lack of direction for teacher development was similarly lacking in the State's Act 48 requirements for continuing professional development. They concluded that "there is close to an 'anything goes' attitude in school districts" toward professional development (2003:17).

Supportive Research

The National Center for Education Statistics (1992-93) reported that teachers who do not participate in induction programs leave the profession at a rate almost 70% higher than teachers who participate in induction programs. With this statistic in mind, the estimate of teacher turnover costs reported above no longer seems excessive.

Mandel argues that new "teachers have one basic goal in mind - survival" (2006:66). She states that "what new teachers need can only be provided through supportive interactions with veteran teachers" (2006:66-67). They are not concerned with raising test scores months



What new teachers need can only be provided through supportive interactions with veteran teachers.

from now, they are concerned with getting through each day. It is from veteran teachers that they need to learn about grading fairly, handling discipline, and dealing with parents.

A number of states and large cities have histories of success in retaining teachers after implementing induction programs. Philadelphia is one such city. Neild, Useem, and Farley (2005) reported an increase in new teacher retention in 2003-04 of 85% compared to 2002-03. The difference was attributed to the implementation of a Colleague Mentor Teacher Program.

Shen's (2003) study concluded that participation in induction as a crucial part of teacher preparation was a significant factor in retaining new teachers. In "Quality Counts", Education Week (2003) reported that teachers who did not participate in mentor/induction programs were twice as likely to leave teaching.

The Clark County School District in Nevada, with a school population growth of approximately 13,000 teachers per year, instituted a program that utilizes full-time mentors, provide training of new teachers prior to assignment, and ties pay to continued professional development. The results of the initiative resulted in the loss of only 15 of 180 new teachers (2006:30).

California's program for new teachers has proven very successful in reducing the attrition rate of teachers (CTP, 2001:35). The attrition rate after five years dropped to 9% compared to 37% rate among teachers who were not provided with the Beginning Teacher Support and Assessment Program (BSTA).



Math and Science Certification

Recommendation 5

Develop a "Highly Qualified Teacher Corp" for Pennsylvania's high schools to increase the number of female and minority college students seeking teaching certification in the fields of mathematics and physical sciences.

Rationale

According to Governor Rendell, the Commonwealth's economic future will be predicated on its ability to attract, develop, and maintain highly technical businesses and industries that can compete effectively within a global economy. Such businesses and industries require a well-educated workforce that possesses the ability to perform at high skill levels in order to qualify for high wage jobs. Through addresses in 2006, Governor Rendell and President Bush have both stressed that education must include greater numbers and higher levels of mathematics and physical science courses.

Currently, fewer females than males and fewer minorities than majority students while in high school complete a rigorous schedule of physical science and higher level mathematics (Chang, 2003; Clewell, 2006). This precludes many students from qualifying for high-skill jobs. If the Commonwealth is to attract globally competitive business, then it must provide the access and opportunity for all its students to succeed in these courses. Gender and racial enrollment differences cannot be attributed to lack of cognitive ability, rather social factors discourage females and minorities from these courses. Some attribute the lower numbers to a lack of same gender/same race role models among the teachers of these courses. Matches

between gender and race increase students' feelings of self-efficacy, which has been correlated with high achievement. Because fewer women and minorities teach physics, chemistry, trigonometry, statistics or calculus, fewer female and minority high school students see themselves as viable members of these courses. In order to increase the skill levels of the Pennsylvania workforce, more female and minority math and science teachers must be hired in Pennsylvania high schools.

Pennsylvania Practice

According to the American Association for Employment in Education (2006), despite its loan forgiveness incentives to attract math and science teachers, Pennsylvania suffers from considerable shortages of teachers in math and science. Pennsylvania school administrators report low numbers of applicants in these disciplines regardless of gender and race and call for added incentives to attract qualified candidates. Currently, Pennsylvania does not collect data on the gender and race of its high school math and science teachers. However, both McClelland (2004) and Dees (2005), who collected data in Pennsylvania, speak directly to the low numbers of females and minorities teaching these subjects in Pennsylvania schools. More must be done, but where does one begin?

Some suggested places to start would have each state-supported or state-affiliated university provide annually two two-year full tuition scholarships for women and/or minority students who agree to teach physics, chemistry or mathematics in a Pennsylvania middle or high school for at least five consecutive years after their graduation. This policy would supplement (not supplant) the current State policy of loan forgiveness for critical shortage subject areas (22 PA Code #121.152)

Eligibility: Applicants must be rising third-year students who are fully qualified for admission to science or mathematics education programs at a state-supported or state-affiliated university in Pennsylvania. Students must graduate and become certified to teach physics, chemistry or mathematics in Pennsylvania within three years of receiving the scholarship.

Penalties: Students who receive a scholarship but do not become certified, must repay the scholarship with interest. Failure to fulfill the teaching contract for five consecutive years would result in repaying the scholarship with interest. Exceptions to this penalty clause for medical or parenting issues are to be negotiated between the school districts and employee. Universities that do not fully comply would have the amount of the scholarship subtracted from their state funding for the next fiscal year.

Funding: Scholarships would be part of the regular state funding to these universities. No new funding would be required.

Supportive Research

After Harvard University President Summers stated that innate cognitive ability might be the rationale for fewer women and minorities on the science faculty, many researchers inspected the existing research on this issue. Spelke (2005) provides the most comprehensive review that refutes Summers' supposition. Girls and women are as capable if given the same chance as boys and minorities have equal abilities as well, if provided with proper support during high school. Dees (2005) found that the match in gender and race between teacher and student significantly increased student confidence, achievement and enthusiasm. After completing a math or science course with a teacher of the same race or gender, female and minority students were more likely to enroll in the next level of science or math.

Engagement of Higher Education

Recommendation 6-A

Pennsylvania should develop a “pipeline program” of intending teacher candidates (K-12) using the existing 95 teacher education institutions, providing candidates with mentoring and support throughout high school and college.

Recommendation 6-B

Each of the existing 95 teacher education institutions in Pennsylvania should form collaborative professional partnerships with junior and community colleges to identify/recruit quality intending teacher candidates.

Recommendation 6-C

Pennsylvania’s 95 teacher education institutions should seek out opportunities to recruit community members, paraeducators, career change adults, and other quality teacher candidates, providing necessary support/transition to their programs.

It is suggested that colleges and universities in Pennsylvania consider all three policy recommendations in tandem to allow for more comprehensive recruitment efforts.

Rationale

The pervasiveness of NCLB in decisions of teaching and learning in today’s schools cannot be overlooked. NCLB contains provisions focusing on the single most important factor in student learning - teachers. It further stipulates the necessity of highly qualified teachers in all American classrooms. Subsequently, NCLB has given new urgency to debates over teacher preparation and quality. Several groups have dominated the debate, some seemingly eager to assail the nation’s

Two models that “grow your own” by identifying potential teacher candidates in middle and high school allow colleges and universities to promote a “locality” to their teacher preparation programs. Teacher candidates who are identified and supported early in their teaching career choice can become teachers in high need areas and subjects.

- Virginia’s Teachers for Tomorrow Program, Virginia Department of Education, Richmond, Virginia
- Grow Your Own Teachers Program, Mesa, Arizona

A model that expands the preparation of teachers through a partnership of high schools, community colleges and then baccalaureate institutions. Such an approach can provide a seamless way to identify local teachers while being sensitive to local school districts’ needs.

- Teacher Preparation High School Program, Phoenix College and South Mountain Community College, Phoenix, Arizona

Two university models that allow interested individuals already involved in school to pursue their teaching credentials by providing supports that ensure success.

- Latino and Language Minority Teachers Project, University of Southern California, Los Angeles, California
- Destination Teaching Program, University System of Georgia Colleges of Education, Georgia

Two models that provide opportunities for increasing teacher recruitment especially in hard to fill or high need areas.

- Future Teacher Highway, University of California - Irvine, Irvine, California
- The Academy for Future Teachers, Bowie State University, Bowie, Maryland

education schools and to suggest that there is an insufficient body of professional teaching knowledge; others commit to advancing professionalism by ensuring that all teachers are prepared and licensed through a prescribed and formal training program.

Regardless of viewpoint for the causes of the problem, policymakers and reformers generally agree that: (1) the current system is simply not providing enough of the quality teachers needed; (2) the system is failing to provide teachers in the troubled high poverty school districts that need them most; and (3) teacher preparation programs may not be teaching important skills or weeding out unstable candidates (Education Trust 2003).

Pennsylvania Practice

Pennsylvania has not had an aggressive or wide range in statewide recruiting effort, in large part, because to this day the 95 universities produce more certified teachers than technically needed. However in recent years it has become apparent that some of the certification completers are going to other states while too few others are applying to hard-to-staff schools.

In August 2005 Pennsylvania's Governor Edward G. Rendell announced the creation of The Training American's Teachers Commission. He stated that "not only do we want to make sure that Pennsylvania has top quality teachers, but the best trained and most innovative teachers as well." The 44 member Commission will examine National models and best practices. Using pertinent studies culled for educational research the Commission meets regularly, most recently March 8, 2006 when they conducted a statewide teleconference to hear from district teachers and administrators. While the Commission's work is preliminary, they are initially examining models that would be more involved and more "immersion" than "induction."

Supportive Research

"Solid teacher education programs (traditional and alternative) must expand teacher candidates' views of teaching beyond their own schooling to determine how to develop a commitment to teaching children in high need areas (Ladson-Billings, 2001; Reynolds 2005).

Numerous ideas have developed as the educational system grapples with the problem of recruiting highly qualified teachers.

Fiscal Impact and Considerations

These nine policy recommendations represent select strategies for ensuring teacher quality in Pennsylvania. A specific analysis of the benefits and costs associated with implementing these recommendations will need to be conducted. When making these recommendations, project members attempted to build upon existing resources, invest in research-based practices and understand the potential cost factors that policy makers will have to consider.

Conclusion

Developing and retaining a highly qualified teaching force in certain school districts and in certain curricular areas is a significant challenge. Because this problem is complex and can be attributed to many causes, no single policy proposal will be effective in changing the current situation. Instead, our analysis has suggested the need for a multifaceted approach that looks at institutions of higher education, school districts, and the state as major players that could work together to increase the pool of qualified teachers, recruit these teachers for the schools and subjects where they are needed the most, and then retain these teachers into the future. The challenge for Pennsylvania is for these systems and institutions to effectively work together for the betterment of children across the state.

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