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Preparing and Training Professionals

Comparing Education to Six Other Fields



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Executive Summary

Teachers are essential. Anyone who has ever sat in a classroom can attest to this truth. But increasingly, the national spotlight is on the quality of their teaching and how highly-qualified teachers can improve student achievement. The reasons are clear. Research confirms that teacher quality is the most critical factor in improving student performance. And the federal *No Child Left Behind Act* requires schools, districts, and states to recruit and retain “highly qualified teachers” and to show annual progress toward the goal of 100 percent student proficiency in reading and mathematics by 2014.

This heightened attention to teacher quality and pressure to improve achievement leaves educators facing a myriad of challenges with little data to guide them in achieving these goals. But many stakeholders concede that traditional teacher preparation and in-service training have failed to produce the level of quality demanded by the new educational environment.

Clearly, educators face some daunting challenges. But this analysis recognizes that the education field is not alone in its quest for quality and that examining how other fields prepare and train professionals can provide ideas and approaches for education to consider adapting in its own efforts. This analysis compares professional development — both pre-service preparation and in-service training — in education to six other professions: law, accounting, architecture, nursing, firefighting, and law enforcement. This comparison illuminates similarities and differences in the approaches taken to preparation and in-service training to inform the debate over how to improve teacher quality and also highlights important areas for further study and possible policy development.

The analysis examines these critical elements of professional development:

Approval of Preparation Programs: Among the examined professions that require state approval of preparation programs, each enjoys greater consistency than education in standards across states. While the education field remains ambivalent about national standards for accreditation and state approval, consistent standards enable preparation programs to better compare their work to that of their peers and to measure progress toward established goals.

Clinical training: “On the job” training is required before licensing in education, architecture, and nursing. It is not required but is almost universal in law and accounting. As student teachers often give their experience a failing grade, calling it limited, inconsistent, and disconnected from coursework, studying the more intensive and highly-structured programs used by nursing and architecture can inform efforts to make the student teaching experience more valuable.

National Entry Exam: While most of the six fields require practitioners to achieve a passing score on a national exam before practicing, the education field has long resisted a national teacher assessment and continues to rely on varied state standards for licensure. The education field continues to grapple with a lack of consensus over the characteristics of an effective teacher and continues to rely on varied state standards for licensure, which impacts efforts to ensure that all teachers meet an established level of competency.

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Practice Prior to Licensure: Education stands alone in allowing professionals to practice independently before they are licensed and to circumvent traditional preparation and licensure through “alternative certification” programs. While these practices were designed to help districts address teacher shortages and attract new teachers to the field, recognizing both that education is an outlier in this area and the inherent trade-offs involved could advance discussions of how to improve teacher quality across the system.

Standards for In-Service Training: Education also is alone among the comparison fields in its lack of universally accepted standards for required in-service training and identification of a single entity to enforce those standards. While there is a growing consensus regarding characteristics of high-quality professional development, there is still a widespread need for standards that would enable educators to evaluate providers and offerings.

Induction Programs: Novice firefighters, police, and nurses complete formal orientation or induction programs to prepare them for the demanding situations they will face. Despite disproportionate assignments to low-performing schools in low-income areas, new teachers do not have consistent access to formal and focused induction programs. Since research shows that quality induction programs can prepare teachers and reduce turnover, examining universally required programs in other fields could provide valuable models.

Peer Support and Learning: The fields of law, accounting, and architecture consider networking and professional associations critical tools for business and professional development. Police and firefighters place a premium on peer support and team-building. While, historically, they have been provided little time to learn from one another, educators increasingly are exploring ways to provide and expand opportunities for collaboration, common planning time, peer learning, and teamwork.

Managers: Education stands alone among these fields in requiring its managers — principals and superintendents — to obtain separate licensure before assuming a management role. The fields of education, law enforcement, and firefighting require managers to complete in-service training, although typically firefighting and law enforcement programs are more formal and specialized. In light of these comparisons, further examination of both the value of requiring separate licensure and the potential of in-service training to address the challenges inherent in management could advance the many discussions on how to improve educational leadership.

Financing: The fields of education, nursing, law, accounting, and architecture all require candidates to finance their own preparation. Educators and nurses must also finance their own clinical experiences, while accountants, architects, and lawyers typically complete paid internships. Police and firefighters, who, like public school teachers, are employed by the

public sector, receive public funding for pre-service preparation. Evaluating this type of public investment, including the level and structure of existing grant and loan programs for teachers who commit to working in high-poverty areas, may provide insight into how significantly reducing financial burdens could attract entrants to the field and to “hard to staff” schools.

Financial Incentives: Salaries for teachers, firefighting, and police professionals are tied to education and experience. But architects, accountants, and lawyers receive financial rewards in exchange for higher levels of skill and performance. Districts often reward educators’ graduate courses whether or not they are related to their classroom needs, resulting in a weak link between expenditures and desired results. In an effort to improve their return on this investment, some districts and states are exploring new ways to reward

teachers based on their performance. Assessing the costs and benefits of varying models of financial incentives could help the education field target its resources more effectively.

Faced with great pressure to improve student achievement, districts and policymakers demand evidence that investments in professional development will pay off in better teachers and student performance. No field in this study systematically assesses the effect of its training programs on professional performance. The higher standard to which the education field is being held has prompted much of the progress and evolution outlined above, but innovation is required. Information about how other fields prepare and train professionals can help advance efforts to tap the potential of professional development to improve teacher quality and strengthen the education system.



Introduction

Teachers, schools, districts, and states are held accountable for student achievement more than ever before. As part of the No Child Left Behind (NCLB) Act of 2001, districts must recruit and retain a “highly qualified” workforce and bring about improved student outcomes or face penalties.

Effective teachers are critical to student achievement. Research indicates that teacher quality accounts for between 40 and 90 percent of differences in student test scores.¹ The importance of quality teachers to student achievement is evident, but improving education professionals’ performance remains a challenge. Pre-service preparation and in-service training — both critical elements of professional development — have the potential to help teachers develop more knowledge and skills, enabling them to meet the challenges they face in their classrooms.

Teacher experience also contributes toward students’ academic achievement, as recent research indicates.² However, many school districts have difficulty attracting and retaining experienced teachers.³ Approximately 20 percent of teachers leave their jobs every year, requiring schools to devote significant resources toward finding highly qualified candidates to fill these vacancies.⁴ Further, in high poverty schools the teacher turnover rate is almost one-third higher than the rate for all

schools.⁵ High teacher turnover, especially in hard-to-staff schools, creates additional challenges for schools and districts in developing high quality teachers and improving student performance.

Financing and delivering effective professional development is clearly a complex task. Developing, implementing, and financing effective preparation programs and in-service training for public school educators is a fragmented process involving schools, districts, states, the federal government, higher education institutions, teacher unions, and other education organizations. The effort is further complicated by a paucity of data on effective professional development activities. Superintendents express frustration that there is little evidence about “what works” to guide them in developing their professional development offerings.

It is very difficult to determine a causal relationship between professional development and student achievement because it is but one variable among many.⁶ Another challenge is the current lack of knowledge on what is spent on professional development. The variety of funding sources used to support professional development activities, a lack of uniform definitions of spending categories, and inadequate data collection and management systems make it difficult for many school

1 Linda Darling-Hammond and Deborah Loewenberg Ball, *Teaching for High Standards: What Policymakers Need to Know and Be Able to Do*. (Washington, D.C.: National Commission on Teaching and America’s Future, 1997).

2 Eric A. Hanushek, John F. Kain, and Steven G. Rivkin, “The Revolving Door: Factors Affecting Teacher Turnover.” *Developments in School Finance: 2003*. (Washington, D.C.: National Center for Education Statistics, 2004).

3 Eric A. Hanushek, John F. Kain, and Steven G. Rivkin. *Why Public Schools Lose Teachers*. Cambridge, MA: National Bureau of Economic Research, 2001.

4 Eric A. Hanushek, John F. Kain, and Steven G. Rivkin, 2004.

5 National Commission on Teaching and America’s Future, *No Dream Denied: A Pledge to America’s Children*. (Washington, D.C.: National Commission on Teaching and America’s Future, 2003). Cited source: Richard M. Ingersoll, adapted for NCTAF from “Teacher Turnover and Teacher Shortages: An Organizational Analysis,” *American Educational Research Journal*, 38 (fall 2001), 499-534.

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districts and others to accurately determine professional development expenditures.

Many stakeholders acknowledge that traditional ways of developing, delivering, and financing professional development in education do not always result in teachers who can produce high academic achievement in their students. While a number of well-regarded professional development programs exist, teachers often do not receive much professional support, feedback, or information on practices that can help them improve student performance, and the quality of available training remains inconsistent.⁷

Recognition of the need for improvement of professional development in education is evidenced in legislative action, such as the NCLB Act requirement for states to report the percentage of teachers who participate in high quality professional development each year, and in the expressed interests of stakeholders including taxpayers, legislators, and educators themselves. In recent years, the field of education has increasingly focused on this task, and efforts are underway to develop high quality and effective professional development that will help teachers improve student achievement. In light of evidence demonstrating that better teachers produce better student outcomes, improving the preparation and in-service training of teachers can provide a key to strengthening the public education system.

To provide information, ideas, and models that can help the field of education improve its professional development, The Finance Project commissioned profiles of professional development in six fields—law, accounting, architecture, nursing, firefighting, and policing.⁸ These profiles provide the information on which this comparative analysis with professional development in education is based. By learning about preparation and in-service professional development in other disciplines, it is possible to gain insights that could prove relevant in efforts to improve pre-service preparation and in-service training in education.

The six fields chosen for this comparative analysis share key features with the education field. All of the fields selected give individual practitioners significant responsibility. Most of these professions – accounting, architecture, law, and nursing – require a bachelor’s degree. They also require or encourage graduate work as a step toward advancement, similar to teaching. Further, state bodies play a key role in regulating the training and licensing of professionals in these fields.

Unlike teachers, fire fighters and police officers are generally not required to have a bachelor’s degree, and local fire and police departments are responsible for planning and conducting most of their professional development activities. However, these three professions share several other important characteristics.

6 In attempting to determine the effectiveness of existing professional development activities, researchers have developed instructional logs that gather data on a teacher’s interaction with her students, see e.g. Ball, Deborah L., Camburn, Eric, Correnti, Richard, Phelps, Geoffrey, and Wallace, Raven. (1999). *New Tools for Research on Instruction and Instructional Policy: A Web-based Teacher Log, A Working Paper*. Seattle, WA: Center for the Study of Teaching and Policy. Value-added studies that isolate the influence of a teacher on student achievement have not yet been applied to professional development specifically but could be as use of the analysis grows. See e.g. D.F. McCaffrey, J.R. Lockwood, D.M. Koretz, and L.S. Hamilton. (2003). *Evaluating Value-Added Modes for Teacher Accountability*. Santa Monica, CA: RAND.

7 Alliance for Excellent Education, *Tapping the Potential: Retaining and Developing High-Quality New Teachers*. (Washington, D.C.: Alliance for Excellent Education, 2004).

8 Summaries of these publications are included as appendices at the end of this publication; the full publications are available on The Finance Project’s website at <http://www.financingpd.org/casummaries.htm>

Financing Professional Development in Education

In most municipalities, police officers, fire fighters, and educators make up the three largest groups of public employees. As in education, fire and police professionals are subject to a “lock-step” salary schedule where salary increases are based on years of experience and education rather than skills and performance. In addition, fire fighters, police officers, and teachers in a number of states operate under collective bargaining agreements. Finally, firefighters, police officers, and public school teachers work exclusively for public entities whereas accountants, architects, attorneys, and nurses also have opportunities in the private sector.

Professional development across these fields faces a number of similar issues and challenges. In each of the six fields examined:

- Stakeholders believe that professional development delivery and effectiveness continues to need improvement and that there needs to be more consistency in tracking related costs,
- Quantification of professional development expenditures does not occur on a regular basis and continues to be a challenge, and
- Measuring effectiveness remains an issue, and programs are rarely evaluated for quality or effectiveness.

While every field has evolved over time, this is a time of transition for the advancement of professional development in education, and education, more than other fields, has begun to ask for evidence of results from its professional development programs.

Beyond the six selected fields in this analysis, medicine and business offer interesting comparisons with education in that they devote significant resources toward preparation, training, and continuing education. Medicine, however, requires practitioners to undergo significantly longer and more intense preparation than education. Nursing, which requires a similar training duration as education, and also suffers from high turnover and shortages in high-need areas, is a more analogous comparison. Despite substantial investments in professional development, medicine and business also struggle to quantify their expenditures in training and identify the return on that investment. Measuring the effect of training on the quality of an employee’s performance remains an elusive goal in these professions as well.⁹ IBM and other companies have looked into this issue, in part to demonstrate fiscal responsibility to shareholders, but there is no industry-wide effort to quantify training expenditures.¹⁰

Examining how practitioners in other fields address similar challenges in professional development gives stakeholders in education a range of options and approaches to consider for improving the preparation and training of its professionals. In each section of this analysis, we examine similarities and differences between fields, identify how education relates to these fields, analyze the direction that education appears to be moving, and explore the insights gained from these comparisons. This analysis of preparation and in-service training in education, in turn, can contribute to efforts to improve the overall quality of the education workforce and help all children in public education succeed.

9 David A. Davis, M.A. Thomson, Andrew D. Oxman, and Brian Haynes, “Changing Physician Performance: A systematic review of the effect of continuing medical education,” *Journal of the American Medical Association* 274 (1995): 700-705.

10 Jack E. Bowsher, *Educating America: Lessons Learned in the Nation’s Corporations*. (New York, NY: John Wiley & Sons, Inc., 1989).



Pre-Service Preparation

Approval and Accreditation of Pre-Service Preparation Programs

In accounting, architecture, law, and nursing, as well as education, pre-service preparation generally takes place at a higher education institution. A state body must approve the preparation program in order for the degree that is issued by the institution of higher education to satisfy state licensure requirements. This process is often referred to as the state giving a program “credentialing authority.” Pre-service preparation in firefighting and policing follows a different model: firefighters and police officers receive training from academies associated with local departments.

In education, all programs must have state approval to issue a teaching degree that counts toward satisfying state licensure requirements. State education agencies or state professional standards boards are responsible for granting approval. All states have adopted some standards for approving teacher education programs, but these requirements vary considerably across states.¹¹ The National Council for Accreditation of Teacher Education (NCATE) developed standards for approving preparation programs. As of June 2004, 36 states use NCATE standards for approval. However, states that use NCATE standards in their approval process often adapt them and

may also combine them with other sets of standards. Some states also incorporate the Interstate New Teacher Assessment and Support Consortium (INTASC) standards into their approval guidelines for new teacher preparation programs; these standards are aligned with the NCATE standards and INTASC is represented on NCATE’s board.¹² Finally, many states develop their own standards that sometimes draw from individual NCATE and INTASC standards but also may include other independent criteria.¹³

Program accreditation is different from state approval. One or more national or regional associations will accredit a preparation program if the program meets the association’s criteria. In two of the comparison fields, state approval of a preparation program is contingent upon its accreditation status. In architecture and law, almost all state regulatory bodies (state registration boards and state bar associations respectively) require licensed practitioners to have a degree from a program accredited by the national association of that field. For architects, the school must be accredited by the American Institute of Architects, and for lawyers, by the American Bar Association.

In the two other relevant comparison fields, accreditation is optional for state approval. In accounting, each state’s board of accountancy specifies the educational requirements for students to sit for the licensure exam, which drives the curricula of preparation programs.

11 The National Association of State Directors of Teacher Education and Certification (NASDTEC) is a membership organization of the state entities responsible for approving programs and licensing teachers. This organization publishes an annual summary of each state’s requirements, which highlights the degree to which they vary. See National Association of State Directors of Teacher Education and Certification, *NASDTEC Manual*. (Washington, D.C.: National Association of State Directors of Teacher Education and Certification, 2002).

12 National Council for the Accreditation of Teacher Education, 2004. http://www.ncate.org/ncate/fact_sheet.htm.

13 National Association of State Directors of Teacher Education and Certification, *NASDTEC Manual*. (Washington, D.C.: National Association of State Directors of Teacher Education and Certification, 2002).

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State requirements vary significantly. The Association to Advance Collegiate Schools of Business (AACSB), a national accreditation body, also establishes criteria for undergraduate and graduate education that is highly respected. However, only about 20 percent of the undergraduate institutions with accounting programs have AACSB accounting accreditation, since it is quite difficult to achieve.¹⁴

State boards of nursing regulate the content for nursing preparation programs by setting minimum standards for credit and clinical hours, faculty preparation, student to faculty ratios, and program operation. Most state boards belong to the National Council for State Boards of Nursing, which enhances the consistency of state standards. Accreditation by a national organization is generally not required for state approval; however, nursing programs often pursue accreditation from one of the national nursing associations, such as the National League for Nursing Accrediting Commission, in addition to state approval.

Education is similar to nursing and accounting in that preparation programs may seek optional accreditation from a regional or national association, but it is not required for state approval. In education there are two national accrediting organizations, NCATE and the Teacher Education Accreditation Council (TEAC). Of these two, NCATE is more widely recognized. While, according to their information, TEAC has accredited nine institutions to date, approximately 650 colleges and universities that produce 70 percent of the nation's teachers are accredited by NCATE.¹⁵ It is important to note, however, that some of the most prestigious teacher preparation

programs in the country have chosen not to pursue accreditation.

Of the comparison fields that require state approval of preparation programs, some display more consistency in standards across states than does education. The extent to which the fields in this analysis have grappled with the issue of setting standards for the approval of preparation programs is apparent in the wide range of practices and the degree of variation from state to state. In education, the prevalence of NCATE's influence in state standards and preparation program accreditation indicates a movement toward uniformity in these areas. However, approval standards in education still vary widely among states, influenced by a tradition of state control and disagreement among stakeholders on necessary elements of teacher preparation curriculum and the effectiveness of different existing standards. Well-developed and more consistent standards for state approval would enable preparation programs to compare themselves against benchmarks and provide specific information about their progress toward important goals, such as preparing teachers to work at hard-to-staff schools. However, many practitioners in education remain ambivalent regarding national standards for accreditation.¹⁶

Clinical Training

For the purpose of this paper, "clinical training" is any clinical experience that takes place *before* licensure and occurs as part of, or immediately after, pre-service preparation. All fields in this analysis, except firefighting and policing, require or strongly recommend some type of clinical training. Firefighters and police

14 Association to Advance Collegiate Schools of Business website, 2004. <http://www.aacsb.edu/>

15 National Council for the Accreditation of Teacher Education, (2004). www.ncate.org; Teacher Education Accreditation Council, (2004). www.teac.org.

16 American Federation of Teachers, *Building a Profession: Strengthening Teacher Preparation and Induction*. (Washington, D.C.: American Federation of Teachers, 2000).

officers do not technically fulfill any clinical training prior to entering the workforce after successfully completing a training academy. However, their first year of service is considered probationary, and much of their training, both in the academy and during their first year, occurs on the job under the supervision of experienced professionals. The probationary year in these two fields will be discussed in more detail in the section on induction.

Architecture and nursing require prospective professionals to have clinical experience in order to take a licensing exam. Architecture requires the most extensive and structured internship of the fields examined. To take the licensing exam, candidates must spend a required amount of time – typically three years after graduating from a preparation program – working under direct supervision of a licensed architect. In nursing, clinical education is part of the degree program and varies according to the program curriculum. Nurses with an associate's or bachelor's degree typically complete 600 to 700 hours of training. While not required, accounting and law students are strongly encouraged to participate in some form of internship before graduating. It is unusual for accounting and law students not to complete an internship, as it often determines the beginning of their career path.

All states require prospective teachers pursuing state licensure through traditional preparation

programs to have some clinical experience in the classroom as student teachers; however, the requirements for student teaching vary from state to state in the depth and breadth of the clinical experience.¹⁷ For example, states vary in the amount of student teaching that is required; on average, most student teachers complete 180 to 360 hours of such training.¹⁸ As in all fields, the richness and value of the clinical experience vary depending on the quality of the supervisor and the amount of time she or he spends monitoring and coaching the student. In education, clinical experiences are often reported to be limited, disconnected from university coursework, and inconsistent.¹⁹ Additionally, research indicates that many student teachers are not encouraged to reflect on their teaching or engage in self-assessment, reducing the potential value of the experience significantly.²⁰

Many preparation programs, schools, and districts are working to make clinical experiences more valuable to the prospective teacher as well as to students. In one effort, universities, schools, districts, teacher organizations, and other institutions have joined together in partnerships called professional development school (PDS) initiatives that strive to improve teacher preparation and professional development and increase student achievement. There have been disagreements over the value of PDSs, stemming from differences in how university professors and

17 National Association of State Directors of Teacher Education and Certification, 2002.

18 According to state education agency websites, states require, on average, a range of six to 12 weeks of student teaching; based on an estimated 30 hours of student teaching a week, this time translates to 180-360 hours of student teaching.

19 Suzanne M. Wilson, Robert E. Floden, and Joan Ferrini-Mundy, *Teacher Preparation Research: Current Knowledge, Gaps, and Recommendations*, An Executive Summary of the Research Report. (Seattle, WA: Center for the Study of Teaching and Policy, University of Washington, 2001).

20 Linda Darling-Hammond, Arthur E. Wise, and Stephen P. Klein, *A License to Teach: Building a Profession for 21st Century Schools*. (Boulder, CO: Westview Press Inc., 1995) Cited sources: Linda Darling-Hammond, Tamar Gendler, and Arthur E. Wise. *The Teaching Internship: Practical Preparation for a Licensed Profession*. Santa Monica, CA: RAND Corporation; S.M. Fox, and T.J. Singletary, "Deductions About Support Induction," *Journal of Teacher Education* 37 (1995) 12-15.

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teachers view the clinical process. However, a growing number of PDSs and other collaborations between preparation programs and districts indicate increased approval for these and other efforts to improve clinical experiences.²¹ One example of such a partnership is the Chicago Urban Leadership Academy, which provides a stipend, reduced tuition for a master's teaching degree from National-Louis University, and licensure for students that participate in a ten-month teaching residency under a master teacher's supervision.²²

Clinical experiences are required in all fields examined, though they vary in intensity, time required, and the degree of supervision. Architecture exemplifies a highly intensive and structured clinical experience. To the extent that more structure and more intense and closely supervised experiences can help better prepare candidates, it is worth examining ways of improving teacher preparation by strengthening its clinical experience. In education, many preparation programs, schools, and districts are already striving to make clinical experiences more valuable to prospective teachers, to students, to schools, and to districts at large.

Entry and Licensing Standards

Like education, four of the comparison fields — accounting, architecture, law, and nursing — license professionals at the state level. After completing a preparation program, each of the comparison fields requires prospective

professionals to meet one additional milestone — pass an exam — before receiving licensure. Accountants, architects, and nurses must pass a single national exam. Attorneys must pass a state bar exam that includes a national or “multi-state” component. The component is the same for each state exam and thus sets a uniform national standard for licensure. Firefighting and policing consider a candidate to be “licensed” upon completing the local training academy, which includes testing as a component.

While states license teachers, they vary in their license requirements. Most states, 47 altogether, require prospective teachers to pass an exam on one or more of the following: basic skills, pedagogy, and subject matter. The two most common teacher examination providers are the Educational Testing Service, which publishes the Praxis series, and National Evaluation Systems, which designs state-specific examinations.²³ Passing scores are determined on a state-by-state basis, so it is possible for a teacher to receive a score on a Praxis exam that is considered passing in one state, but not in another state that requires a higher score. States also set their own requirements for licensure beyond or instead of exams, such as varying amounts of coursework in a range of subject areas. States currently use several sets of standards with numerous criteria, many of which can be difficult to measure.²⁴

To make standards for new teachers more consistent, the American Association of Colleges of Teacher Education (AACTE) and other organizations have advocated

21 National Governors Association, *Integrating Professional Development Schools into State Education Reforms, Summary*. (Washington, D.C.: National Governor's Association, 2000).

22 Academy for Urban School Leadership, (2005). <http://www.ausl-chicago.org/>

23 *Education Week*, “Quality Counts 2004: Count Me In: Special Education in an Era of Standards,” *Education Week*, (2004)17(23).

24 Most state credentialing authorities belong to the National Association of State Directors of Teacher Education and Certification (NASDTEC), which compiles information annually about the licensure requirements of each state.

development of a common assessment of content and pedagogy for all prospective teachers across states.²⁵ However, efforts to create a national teacher assessment have run into several obstacles. The primary challenge is that there continues to be disagreement on the characteristics of an effective prospective teacher within the education field.²⁶ Additionally, pedagogy can be difficult to evaluate and few states and school districts want to give up control of their schools to a national entity.

State licensing of teachers is less restrictive than that in other fields in other ways as well. In some states, traditional licensure programs allow teachers into classrooms before they pass the state's licensure exam. Others allow emergency certification and alternative licensure programs under which individuals who are not licensed can teach in classrooms.

All but six states now offer alternative routes to licensure to those without traditional education training, commonly referred to as "alternative certification."²⁷ These alternative routes vary widely from state to state in their requirements regarding the length of the training, coursework requirements, clinical training, and mentoring. One example of an alternative route to licensure used in multiple states is the American Board for Certification of Teacher Excellence (ABCTE). The U.S. Department of Education funded ABCTE to develop an alternative assessment process for licensure, which is currently accepted in Florida, Idaho, New Hampshire, Pennsylvania, and Utah. Supporters of alternative routes to entry are concerned about the effectiveness of traditional teacher preparation programs and licensure

requirements in attracting talented individuals and ensuring an adequate supply of high quality professionals. Alternative routes to entry may also help combat teacher shortages, particularly in "hard-to-staff" schools.

Standards for entry are more consistent in the comparison state-licensed fields. Not only does education have no national exam, it is the only field in this analysis that allows for alternative routes to entry and permits some professionals to work before they complete the licensure process. All of the relevant comparison fields require professionals to pass a single national exam or a state exam with a national component before they are allowed to practice. This requirement helps ensure a consistent level of competency by limiting licensure to those who meet a uniform set of standards. In education, particularly due to continuing disagreement within the education field over the characteristics of an effective practitioner, states and school districts are not likely to relinquish control over teacher licensure and have candidates submit to a national exam. However, there are ongoing discussions about making new teacher standards more consistent.

In addition, no other field in this analysis offers alternative routes to licensure or allows individuals to begin practicing independently before completing all licensure requirements. These practices may help ease teacher shortages, but they include tradeoffs that other fields have been unwilling to accept. Recognition that the education field is an outlier in this area can inform the debate about how to strengthen results in public education.

25 American Association of Colleges of Teacher Education Accountability Statement, (2003).

26 Jennifer King Rice, *Teacher Quality: Understanding the Effectiveness of Teacher Attributes*. (Washington, D.C.: Economic Policy Institute, 2003).

27 *Education Week*, (2004). "Quality Counts 2004."



In-Service Professional Development

Re-Licensure Requirements and Standards for In-Service Training

Every field in this analysis but one requires professionals to complete a certain number of hours or credits of continuing education to maintain or renew their licenses. Firefighting is the single exception, but firefighters are required to undergo continuous and extensive training on a daily basis. Continuing education requirements in the other fields consist of completing a certain number of hours or credits. A state agency usually determines the amount and type of training required, and an outside entity or the employer provides the professional development. Often the employees have a choice of activities in fulfilling the requirements.

In all of the comparison fields that require in-service professional development, a state body sets requirements for the training that counts toward license renewal. Similarly, a national or state organization develops standards for the providers of the courses that fulfill licensure renewal requirements. Nursing and law look to state boards of nursing and state bars, respectively, to set these standards, while accounting and architecture each rely on a national entity. In architecture, for example, most states accept documentation from the American Institute of Architects' Continuing Education System (AIA/CES) as evidence of completion of required continuing education credits.

Prospective continuing education providers must complete a rigorous application to AIA/CES, and about half of the applicants are rejected because the training or courses do not meet AIA/CES quality standards.

In education, as of 2001, 45 states required teachers to complete a specific number of hours or credits of professional development to maintain licensure. Of the 45 states, 35 did not regulate the content of the activities that count toward relicensure credit.²⁸ In these states, approval for license maintenance activities officially takes place at the state level; however, local school district personnel, school principals, and teachers often play the biggest role in determining the actual content and delivery of professional development across the country.²⁹

The field of education has not universally accepted any single set of standards for professional development, and teachers participate in a large variety of professional development activities. The National Association of State Directors of Teacher Education and Certification (NASDTEC) defines professional development as: "any coursework, experience, training, or renewal activity required by a state to maintain the validity of a license."³⁰ Further, a large number of providers offer in-service training, including states, universities, professional organizations, and private companies. The broad definition of professional development and the range of activities that can fulfill these requirements create a system in which the in-service

28 National Conference of State Legislatures, *Quality Teaching, Professional Learning and the Legislative Agenda: The State of State Professional Development*. (Denver, CO and Washington, D.C.: National Conference of State Legislatures, 2002).

29 Eric Hirsch and Stephanie Hirsh, (no date).

30 National Association of State Directors of Teacher Education and Certification, (2002).

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professional development experienced by teachers across the country varies widely in content, quality, and relevance. Common criticisms are that traditional professional development offerings are one-time with little or no follow-up, and that teachers are dissatisfied with the options they are provided. In a recent survey, teachers said they often feel that the training they are provided does not improve their teaching.³¹

There seems to be some consensus in the education field around research that demonstrates that high quality professional development includes longer, sustained, and more in-depth and active learning opportunities.³² Characteristics of high quality professional development, and related standards for high quality teachers and teaching, have recently been articulated by a number of sources. National education organizations including the National Staff Development Council (NSDC), National Council for Accreditation of Teacher Education (NCATE), and Interstate New Teacher Assessment and Support Consortium (INTASC) each have identified features of high quality professional development. The NCLB Act defines quality training activities as “sustained, intensive, and classroom-focused in order to have a positive and lasting impact on classroom instruction and the teacher’s performance in the classroom; and are not one-day or short-term workshops or conferences.”³³ In addition, the High Objective Uniform State Standards of Evaluation (HOUSSE) sets forth requirements experienced

teachers must meet in order to be considered “highly qualified” under the NCLB Act. These consist of a combination of experience, professional development, and subject knowledge. The components of these standards, however, are administered by individual states and vary widely. Finally, the National Board for Professional Teaching Standards (NBPTS) has developed standards for what accomplished teachers should know and be able to do, and offers a certification process for those teachers who can demonstrate that their practice meets these high standards. Many states and districts support National Board Certification by subsidizing teachers’ application fees and providing salary supplements for those who complete it successfully.

Every field in this analysis that requires in-service training, except education, has one set of standards for professional development that counts toward state relicensure. Fields outside of education have fewer competing standards for approving in-service professional development, and there is one entity responsible for applying those standards. In education, because districts and schools are largely responsible for choosing among a wide variety of professional development activities, there is a widespread need for solid criteria to evaluate providers and offerings. More work is needed to identify the role of the state vis-à-vis the district and school in professional development and to consider the division of labor that could prove most valuable in improving quality.

31 Edweek.org., *Professional Development*. Bethesda, MD: Editorial Projects in Education, Inc. (2005).

32 Michael S. Garet et al., “What Makes Professional Development Effective? Results from a National Sample of Teachers.” *American Educational Research Journal* 38 no. 4: 915-945 (Winter 2001); Andrew C. Porter et al., *Does Professional Development Change Teaching Practice?* (Washington, D.C.: Planning and Evaluation Service, U.S. Department of Education, 2000).

33 Elementary and Secondary Education Act, Section 1119(a)(2)(B), Section 9101(34)(a) (2001).

Induction and Assignment of New Hires

While new hires in all of the fields in this analysis can begin working as soon as they are licensed, there is often a period of practical orientation or a formal induction program. All of the fields in this analysis provide some sort of induction or orientation for their new hires, though the practices vary within each field as well as across fields. A discussion of induction must include both the initial introduction into the field as well as the assignment of new hires.

Induction or orientation programs are common in architecture, accounting, and law, with the exception of sole practitioners. Individual employers in these fields generally set the structure of these programs. While new professionals in these fields may immediately take on challenging work, experienced professionals are expected to provide guidance and support.

Induction programs in nursing, firefighting, and policing are more formal. Nurses typically begin their careers with an eight-week orientation period that includes mentoring by a more experienced nurse. The first year of service for firefighters and police officers is considered probationary, and they are required to attend training throughout the year. Supervision and partnership are very important concepts in this first year, and throughout an individual's career. In these three fields, new hires will obviously be met with very challenging, and even life-threatening situations, which drives the intensive design of their induction.

In education, many districts provide induction programs, though they are not always required, and the structure and depth of these programs vary considerably, as does the capacity to deliver them. Induction programs can be developed and administered by a district or a state, a teachers' union, as a purchased program from a private provider, or even on-line. Multiple induction strategies are used in a number of high-performing districts, including mentor programs, seminars for cohorts of new teachers, and opportunities for peer observation, though mentors were the primary strategy.³⁴

Induction programs are particularly important in education because new teachers are disproportionately assigned to high-poverty and low-performing schools and classrooms.³⁵ State and district policies, and teachers' unions, typically give experienced teachers first priority in selecting schools and classrooms, often resulting in inexperienced teachers working in classrooms rejected by experienced teachers.

Research demonstrates that induction programs can reduce teacher turnover, which, as previously stated, is significantly higher in high-poverty schools. A National Center for Education Statistics study found that the attrition rate for new teachers within the first three years was only 15 percent for those who participated in an induction program, compared with 26 percent for those who received no induction support.³⁶ More recently, Ingersoll and Smith found that beginning teachers who participate in induction and mentoring programs are 50 percent more likely to remain in teaching after their first year.³⁷

34 Wendy Togneri and Stephen E. Anderson, 2003.

35 Alliance for Excellent Education, 2004.

36 National Center for Education Statistics, "Progress through the teacher pipeline: 1992-93 college graduate and elementary/secondary school teaching as of 1997". (Washington, D.C.: U.S. Department of Education, 2000).

37 Richard Ingersoll and Thomas Smith, "The Wrong Solution to the Teacher Shortage". *Educational Leadership* 60 no. 8: 30-33 (2003).

Induction programs in fields where new hires immediately face very demanding, and even dangerous situations — nursing, firefighting, and police — are more formal than those in the other comparison fields. Though education disproportionately places new hires into some of the most intense and challenging situations in the field, induction programs are less focused and not as formal as in the other fields. A new teacher's success in addressing challenges during the first year of teaching can affect the academic achievements and accomplishments of current and future students. Existing induction programs do not adequately meet the needs of all new teachers, particularly ones working in high-poverty schools. As research has shown that induction programs offer the opportunity to improve teacher quality, further exploration into the impact of universal and/or more intensive induction programs could inform debate about strengthening public education.

In addition, while changing assignment practices has not been tested, the problems of assigning new teachers to challenging classrooms are becoming increasingly well recognized. It is worth exploring whether new teachers might not leave as quickly if they are assigned differently and whether more experienced teachers might stay in these "hard-to-staff" schools if provided appropriate support.

Peer Learning and Team Building

Opportunities for peer interaction and networking in formal and informal settings allow professionals to learn from each other and develop camaraderie that can contribute to a happier and more productive work environment. Such professional development opportunities can range from formal meetings and events to informal team-building activities.

While in many of the comparison fields in this analysis — including law, accounting, and architecture — employees must fulfill most continuing education requirements alone, there are also many opportunities for peer interaction and networking in formal and informal settings. These include networking and state or national organization functions, which are also considered professional development and paid for by employers. For employees in private sector fields such as these, resources may be more readily available to fund participation in professional activities, particularly if they are considered a part of business development. While public sector employees often don't have the same resources to attend professional functions, those in the comparison fields of policing and firefighting also place a premium on peer interaction and take great measures to incorporate it into their daily tasks. These two fields incorporate team building and camaraderie into their training, their structure, and their regular routines, as part of efforts to promote safety.

While in-service professional development for educators often occurs in a group setting, teachers get few opportunities to interact and learn from each other. Recently, however, there are more opportunities for peer interaction, peer learning, and collaboration that include common planning time and grade level or subject matter teams.³⁸ Entities such as The Teachers Network, a nationwide, non-profit organization, also help teachers connect by identifying teachers within public school systems who can help their colleagues design their own professional development. The Teachers Network also documents and disseminates the work of outstanding classroom teachers and helps provide teachers with knowledge and skills.

Education has begun to incorporate peer interaction and learning in informal and formal settings into in-service professional development. This is a movement toward practices that the other fields in this analysis have already adopted and it explicitly recognizes the value of these opportunities.

Districts and schools are beginning to think more strategically about opportunities in professional development that foster team learning among teachers and improve school achievement. Creative and strategic practices such as lesson study, team learning, and common planning time that allow teachers to work together more frequently are becoming more widespread among districts.

38 Wendy Togneri and Stephen E. Anderson, 2003.



Professional Development For Managers

For this analysis, we refer to professionals who perform in a supervisory capacity as “managers.” As in other fields, education recognizes that principals and superintendents — the managers — do much more than supervise teachers and staff. They are instrumental to the success of students and teachers, and they must function in a very political environment, which complicates and adds challenges to their role.

Pre-Service Preparation

Manager candidates in all of the fields in this analysis typically come from the “front line,” and they often have a graduate degree and several years of experience. In education, managers are required to have not only a graduate degree, but also separate licensure.

Outside of education, aspiring managers in the fields featured in this analysis may voluntarily pursue additional education or training to improve their professional options. Additionally, individual employers in some fields — accounting, firefighting, and policing — may require managers to have completed some form of higher education, but this is not a formal, industry-wide practice. In firefighting and policing, managerial candidates must pass a written exam to get promoted, but they do not need to undergo an additional licensing process.

Education is the only field in this analysis that requires additional licensure, and an additional higher education degree is most often necessary to acquire this licensure. Forty-nine states require licensure for all principals, and 41 require licensure for all superintendents.³⁹ Those licensure requirements vary, but 39 states require principals to have a master’s degree in order to become licensed, and 34 require the same of superintendents. Typically, superintendents have doctoral degrees such as PhD’s or EdD’s.

Some school districts, however, possibly due to a lack of candidates who are prepared to meet the challenges of these jobs, are changing their policies to hire managers without traditional preparation and from other fields such as law, business and the military.⁴⁰ Eleven states have developed alternative routes for principals and superintendents, most of which are university-based, though few managers actually enter the field in this way.⁴¹ Similar to the growth of alternative licensure for teachers, this may stem, in part, from schools of education being criticized for being too theoretical and not imparting skills necessary for future principals and superintendents to succeed.⁴²

Another managerial preparation alternative is to move away from universities altogether and use third-party providers, as exemplified by the recently formed New Leaders for New Schools

39 National Center on Education Information (2003). *School Principal and Superintendent Certification Study*. Washington, D.C.: National Center on Education Information.

40 Arthur Levine, *Educating School Leaders*, (Washington, D.C.: The Education Schools Project, 2005).

41 National Center on Education Information, *School Principal and Superintendent Certification Study*. (Washington, D.C.: National Center on Education Information, 2003).

42 Elizabeth L. Hale and Hunter N. Moorman, *Preparing School Principals: A National Perspective on Policy and Program Innovations*. (Washington, D.C.: Institute for Leadership, 2003).

Comparison Table			
	Accreditation	Licensure	Pre-Service Clinical Tra
Education	Preparation programs must be approved by a state to grant degrees that count toward licensure. Programs can apply for accreditation through one of several professional accrediting associations by completing a review process.	Each state licenses teachers; all states require a college degree and 47 states require prospective teachers to pass a licensing exam (or exams). Additional requirements vary by state.	Almost all prospective teachers participate in unpaid internships as part of their preparation program.
Accounting	Each state's board of accountancy specifies the educational requirements for students to sit for the licensure exam, which drives the curricula of preparation programs. The American Assembly of Collegiate Schools of Business is the primary accrediting association for undergraduate accounting programs.	All prospective accountants must pass the same national exam to be licensed.	Accounting students typically participate in a paid internship in the summer of their third year of college, though internships are generally not required.
Architecture	Approximately 70 percent of state registration boards require a professional architecture degree from a National Architecture Accrediting Board (NAAB)-accredited program. The NAAB accredits professional degree programs.	All prospective architects must pass the same national exam to be licensed.	All state architectural registration boards require students to complete an internship, which is typically paid and averages about three years.
Law	Most state bar associations require applicants to be graduates of American Bar Association (ABA) accredited programs. The ABA's Governing Council of the Section of Legal Education and Admissions to the Bar sets accreditation requirements through its Standards for Approval of Law Schools.	All prospective attorneys must pass the bar exam in their state to be licensed; the exams differ from state to state, though they all contain the same multi-state component.	Prospective attorneys often participate in a paid internship or externship experience, though internships are not required.
Nursing	The state boards of nursing regulate content requirements for nursing education programs; many nursing programs also pursue accreditation from professional organizations, such as the National League for Nursing Accrediting Commission.	All prospective nurses must pass the same national exam to be licensed.	Nursing students must participate in clinical education, typically unpaid, as part of their preparation program, which they pay tuition and fees for.
Firefighting	The National Board of Fire Service Professional Qualifications offers optional accreditation to organizations that certify uniformed members of fire departments.	All prospective firefighters must meet certain physical requirements and pass written examinations to graduate from a training academy.	No formal clinical experience is required, beyond the physical requirements of the training academy.
Policing	Each state's police officer standards and training (POST) commission sets requirements for academy training programs. The International Association of Directors of Law Enforcement Standards and Training allows states to share information so the content of most training programs is fairly uniform.	All prospective police officers must complete an approved training curriculum and be employed by a police department to be licensed.	No formal clinical experience is required, beyond the physical requirements of the training academy.

Financing Professional Development in Education

Profession	Induction Period	In-Service Training	Management
Teachers Participate in programs, usually in schools and districts provide induction programs for new teachers. The existing programs vary considerably.	Some states require and some schools and districts provide induction programs for new teachers. The existing programs vary considerably.	A state, or more often an individual district, approves professional development activities and the providers of those activities, though there are no uniform standards. Teachers in 45 states must complete a minimum number of hours of training to renew or maintain licensure.	Principals and superintendents generally must have a graduate degree. Almost all states (49) require licensure for principals and 41 states require licensure for superintendents in addition to and separate from their teaching licenses.
Accountants Participate in continuing education or training, usually not required.	There may be an initial period of practical orientation, but no formal induction period is required.	The Uniform Accountancy Act has 18 standards that determine legitimate continuing education for CPAs. Each state's Board of Accountancy determines whether courses meet these standards; all states require a minimum number of hours to renew or maintain licensure.	Most managers have a graduate degree, such as a masters in business administration, but additional licensure is not required.
Architects Participate in continuing education or training, usually not required.	There may be an initial period of practical orientation, but no formal induction period is required.	Individual state registration boards grant approval of professional development. About half the states (26) require architects to complete a minimum number of hours. Providers must apply to the American Institute of Architects' Continuing Education System to become members.	Most managers pursue a master's in business administration or participate in American Institute of Architects training, but additional licensure is not required.
Attorneys Participate in continuing education or training, usually not required.	There may be an initial period of practical orientation, but no formal induction period is required.	Individual state bar associations grant approval of courses and other continuing legal education requirements. They also grant approval to the providers of that training; 47 states require a minimum number of training hours.	Additional education or licensure is not required for managers, though many firms provide in-house training for supervisors.
Nurses Participate in continuing education or training, usually not required.	New nurses often begin their careers with a formal orientation period that lasts an average of eight weeks and includes mentoring by an experienced nurse.	The American Nurses' Credentialing Center's Commission on Accreditation grants approval to an organization or institution to award continuing education units. The state boards of nursing decide what units are recognized; 18 states currently require a minimum number of units.	Many managers pursue graduate coursework in nursing and/or business administration; additional licensure is not required, though many managers pursue advanced certification.
Firefighters Participate in continuing education or training, usually not required.	A firefighter's first year is considered probationary. New firefighters are well-supervised and regularly evaluated by superiors.	In-service training is not required for firefighters, though the National Fire Prevention Association has developed an optional training standard that departments may choose to follow.	Managers must have a minimum number of college credits and pass a promotional exam to be considered, but no additional licensure is required; some departments require management training.
Police Officers Participate in continuing education or training, usually not required.	The police officer's first year is considered probationary and new officers are often assigned to work with a field training officer for one to six months.	Each state's POST commission approves certified training and the providers of that training; all states require that police officers participate in a minimum number of hours of training.	Many managers have graduate degrees and all must pass a civil service exam to be considered for promotion; additional licensure is not required, though a growing number of moderate- to large-sized departments require management training.

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program. States and districts have also created their own programs to help prepare principals, such as the state-level California School Leadership Academy and the Chicago Leadership Initiative for Transformation (LIFT).⁴³ These programs must partner with a higher education institution, however, to provide a credential that is recognized by the state, unless that state allows an exemption from the license, as very few do.⁴⁴

Education is the only field where professionals must obtain separate licensure to become managers. The additional licensure, however, does not always ensure that managers have the knowledge and skills necessary to succeed. In the future, stakeholders in public education may want to consider alternatives to additional licensure for managers, particularly as discussions move beyond general management issues and toward instructional leadership. Some educators argue that changing or removing this requirement would open the candidate pool up to a wider and possibly more suitable array of choices.

In-Service Professional Development

Except for fire and police, managers in the comparison fields in this analysis have no additional in-service training requirements beyond those required of their non-managerial colleagues. Firefighting and policing have structured in-service training systems for managers, emphasizing peer learning. Specific management training requirements for

firefighters vary by municipality. In New York City, for example, management candidates participate in a formal training program alongside their peers and a separate mentoring program. Police must attend a police management school in their state.

Some states require managers in education to complete a set number of continuing education hours or credits to retain their licenses. Generally, however, there is far less emphasis on in-service professional development for managers than for teachers. A common practice in education is to require managers to train to become principals by serving as assistant principals.

A number of districts, often in partnership with institutions of higher education or other organizations, have created specific training for new principals and ongoing professional development activities for all principals.⁴⁵ Some universities offer professional development programs that allow managers to interact and learn from their peers.⁴⁶ Professional associations for principals and superintendents, as well as the Council of Great City Schools, offer professional development opportunities that vary from activities that address issues specific to a school district to gatherings that bring together certain cohorts, such as superintendents of big, urban schools. There are also a number of individual initiatives sponsored by foundations or education organizations that pair new principals with experienced colleagues for mentoring and support, such as the Leadership for Learning Project, a partnership between three urban New Jersey school districts and the Center for

43 Arthur Levine, 2005; Carol Cohen et al., *Profiles of Selected Promising Professional Development Initiatives*. (Washington, D.C.: The Finance Project, 2001).

44 Arthur Levine, 2005.

45 Elizabeth L. Hale and Hunter N. Moorman, 2003.

46 Katherine Neville and Casey Robinson, *The Delivery, Financing, and Assessment of Professional Development in Education: Pre-Service Preparation and In-Service Training*. (Washington, D.C.: The Finance Project, 2003).

Evidence-Based Education, part of the New American Schools.⁴⁷

Education, firefighting and policing have formal requirements for in-service management training. Training for firefighter and police officer managers usually has a strong focus on peer learning. New manager training for firefighters and police officers provides interesting examples that are worth examining for managers in education. Principals and superintendents, as well as fire and police chiefs, perform their jobs in highly political environments where they are

accountable to citizens and governmental leaders. The peer-focused approach to in-service training in firefighting and policing is similar to recent district and school-level efforts to provide “in-house” pre-service preparation for education managers. These programs allow candidates to build camaraderie while learning to address challenges they will face in their new positions. As managers in education have separate requirements for in-service professional development, the peer-founded approaches of police and fire departments are models to consider in the effort to improve managerial training.

47 Elizabeth L. Hale and Hunter N. Moorman, 2003.



Financing Professional Development

Financing Pre-Service Preparation

Except for firefighting and police, all of the fields in this analysis expect individuals to pay for their pre-service education program, the cost of which varies greatly depending on the type of schooling pursued or required (i.e., a two-year degree compared to a four-year degree; a private college compared to a public university). Beyond classroom work, students in these fields may also have to pay fees related to licensing, assessments or exams. Managers are also expected to pay for their pre-service expenses. In contrast, firefighters and police officers undergo pre-service preparation through local training programs that are financed by their local departments.

The fields vary, however, in financing of the clinical experience. Accounting, architecture, and law firms usually pay interns for their services. Nursing internships are typically unpaid. As noted earlier, police and firefighting do not have a clinical experience apart from the training academy.

In education, similar to nursing, prospective teachers must pay tuition and fees to fund all of their pre-service preparation, including clinical experience. This presents a financial burden for some prospective teachers that individual states and the federal government partially alleviate through grant and loan programs. Many of these programs are designated for teachers who are committed to work in high-poverty areas.

Some districts offer a stipend or salary to student teachers to improve the value of the clinical experience, often targeting these funds to encourage or support entrants in certain high-need areas or subjects. For example, the University of Wisconsin-Milwaukee/Milwaukee Public Schools Internship Program for Preparing Special Education Teachers prepares teachers to provide special education services at the early childhood, elementary, middle, and high school levels. Post-baccalaureate interns work as special education teachers in public schools with full classroom responsibility and earn a beginning teacher's salary while they work toward full certification through the university. Full-time mentors support the interns while they work in the public schools.⁴⁸

In the fields examined where large percentages of practitioners work in the private sector, individuals are expected to pay for their pre-service preparation. Although most teachers work in public schools, they are also expected to pay for their pre-service preparation, in contrast to other public sector employees — firefighters and police — who receive full public funding. The education field is trying to ease the financial burden on prospective teachers, especially those working in underserved areas or teaching in areas of high demand. The federal government and many states offer tuition assistance and loan programs. Education schools and districts are collaborating to provide a stipend or wages to student teachers. Some communities have begun to provide housing subsidies to teachers. Despite these efforts, however, the education

48 University of Wisconsin-Milwaukee, Department of Exceptional Education (2004). http://www.soe.uwm.edu/pages/welcome/Departments/Exceptional_Education/UWM_MPS_Special_Education_Internship_Program

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field still struggles to find teachers willing to work in certain schools and classrooms. Attracting entrants to the field, most urgently to “hard to staff” areas, remains an important objective to consider in financing efforts to strengthen the teaching force.

Financing In-Service Professional Development

In every field in this analysis, except for nursing, employers finance in-service training that enables employees to retain their licensure. Nurses are expected to finance their own in-service training, though some hospitals offer tuition reimbursement for nurses’ continuing education.

In-service professional development in education is essentially financed through local, state, and federal funds. Districts, and sometimes individual schools, coordinate these funding streams. Professional development can comprise as much as 6 percent of a district’s total operating expenditures, which can translate into millions of dollars.⁴⁹

In addition to financing in-service training, architecture, accounting, and law also provide financial incentives and rewards to employees for higher levels of skill and performance. To the extent these qualities are gained through coursework, these fields may reward professionals for graduate degrees that are directly applicable to the position, with any resulting increase in compensation for each individual left to the employer’s discretion.

By contrast, in education, firefighting, and policing, salaries are based on experience and education, rather than performance. In education, completing graduate coursework provides one of the few opportunities for salary advancement. Many schools and districts dedicate significant funds to salary increases based on the number of graduate credits or hours completed, even if the coursework is not directly related to that teacher’s subject or classroom work. Because these increases represent ongoing salary obligations, the amount of money dedicated to this practice dwarfs all other district professional development expenditures. A number of districts also reimburse teachers for the cost of graduate coursework; while the extent of this practice is unclear, some automatically reimburse teachers for graduate work while other districts provide a limited pool of funds for which teachers must apply. A large body of research indicates, however, that the connection between graduate coursework and teacher performance is tenuous and that a master’s degree does not necessarily make a more effective teacher.⁵⁰

While graduate coursework remains a large professional development expenditure and the primary vehicle for teacher salary promotion, there have been efforts to find ways to better link financing with desired results. Strategies to address this problem include requiring that coursework directly relate to the teacher’s subject or identified needs. Recently, some districts and states have also begun to find alternative ways to reward teacher performance. For example, many provide salary

49 Karen Hawley Miles and Linda Darling-Hammond. *Rethinking the Allocation of Teaching Resources: Some Lessons From High-Performing Schools*. Prepared for the Consortium for Policy Research in Education (1997).

50 Steven Rivkin, Eric Hanushek, and John Kain, *Teachers, Schools and Academic Achievement*. NBER Working Paper No. 6691. (Washington, D.C.: National Bureau of Education Research, 1998, revised 2002).; Christopher Jepsen and Steven Rivkin, *Class Size Reduction, Teacher Quality, and Academic Achievement in California Public Elementary Schools*. (San Francisco, CA: Public Policy Institute of California, 2002); Brian Rowan, Richard Correnti, and Robert J. Miller, “What Large-Scale, Survey Research Tells Us About the Teacher Effects on Student Achievement: Insights from the Prospects Study of Elementary Schools,” *Teachers College Record* 104, no. 8 (2002):, 1525-67.

rewards to teachers who have demonstrated their ability to teach to high standards through achieving National Board Certification.⁵¹ In addition, a growing number of districts are beginning to experiment with pay-for-performance models, which reward teachers who demonstrate higher skills and performance.⁵² The federal government has also recently proposed providing dollars to expand pay-for-performance models.

Since research has demonstrated that the connection between graduate coursework or a master's degree and improved performance on the part of the teacher is tenuous, more work is needed to identify the frequency and characteristics of district practices rewarding and reimbursing teachers for such coursework as well as to quantify the money being devoted to those practices. That information can then allow stakeholders to assess the comparative costs and benefits of devoting resources to these practices as opposed to other means of providing incentives and rewarding performance.

51 National Board for Professional Teaching Standards (2005). www.nbpts.org

52 Sylvia A. Allegretto, Sean P. Corcoran, and Lawrence Mishel, *How Does Teacher Pay Compare?* (Washington, D.C.: Economic Policy Institute, 2004); Education Commission of the States. *Pay-for-Performance: Key Questions and Lessons from Five Current Models*. (Denver, CO: Education Commission of the States, 2001); The Teaching Commission, *Teaching at Risk: A Call to Action*. (New York, NY: The Teaching Commission, 2004).



Conclusion

In education, the NCLB Act, stakeholders' interests, and research connecting educator performance with student outcomes have made teacher quality a priority among policy makers. Thus, particularly now, it is important to have access to information that can contribute to the debate and discussions of the complex and political issues inherent in efforts to strengthen teaching quality, including professional development as a way to build knowledge and skills among teachers in order to improve student achievement.

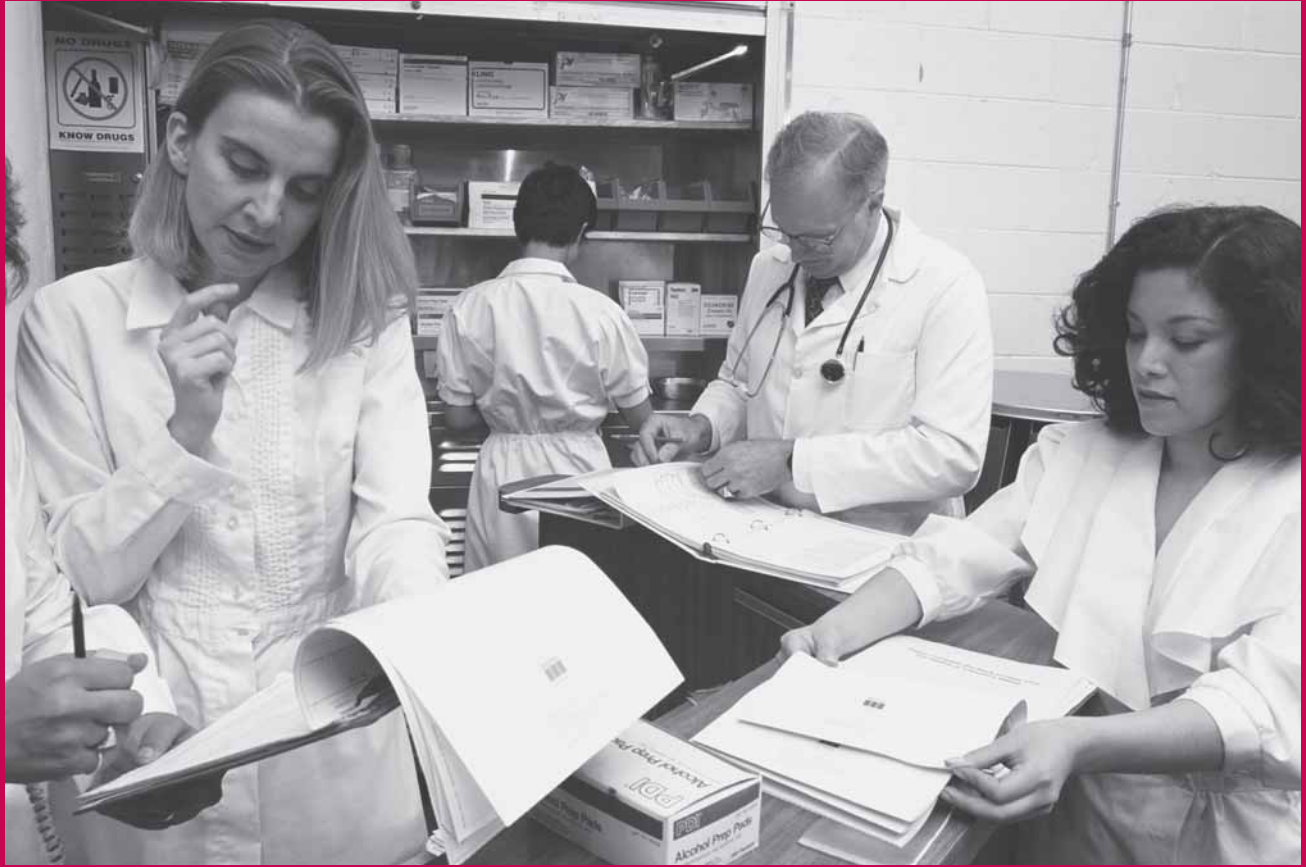
This analysis compares professional development delivery and financing in education to that in six other fields: accounting, architecture, law, nursing, police, and firefighting. The six fields illustrate different models of pre-service preparation, in-service training, and financing. Our findings highlight several important points for stakeholders in education to consider:

- Most of the comparison fields have developed more uniform standards for entry into the field, preparation program approval, and in-service training.
- Education is the only profession that allows some individuals to practice before completing a defined licensure process.
- Clinical experiences and induction programs in education are less structured and less consistently supervised than those of some other fields.
- Education is the only field that requires managers to have separate licensure.
- In contrast to other public sector employees who receive full public funding of their pre-service preparation, public school teachers finance their own.

- Education is beginning to move in the direction of other fields in recognizing the value of peer learning.
- While education has traditionally made salary increases contingent on the completion of graduate coursework, the field is beginning to experiment with ways that base salary increases on performance.

While there is doubt about the effectiveness of professional development in all of the fields examined, no field systematically assesses the effect of training programs on employee performance. In education, the current focus on improving teacher quality has heightened demand that professional development programs show clear evidence of effectiveness. School districts — under pressure to produce good student results — want evidence of improved student achievement before devoting more resources to professional development. In this sense, it appears that professional development in education is being held to a higher standard than the other fields in this analysis.

The education field has begun to put significant effort into evaluating the true costs and outcomes of professional development. The next several years may bring more innovation and evolution to the field of professional development for teachers, and, with the growth in value-added analyses, more abundant and reliable evidence of its impact on student achievement. As this occurs, the debate around professional development and its role in strengthening the education system can be informed by how other fields have approached these challenges and by recognizing the tradeoffs various alternatives present.



Appendix: Summaries of Professional Development in Other Fields

As part of a cross-disciplinary analysis of how professional development is delivered in other fields, The Finance Project commissioned six papers by experts in law, accounting, architecture, nursing, firefighting, and policing. The results were compared to how professional development is delivered and financed for teachers, principals, and superintendents in K-12 education. The six papers are summarized here.

Law

Introduction. Law school graduates have a wide variety of professional options, the most common of which is to complete a state bar examination with an eye toward being admitted to practice law. Once a licensed member of the bar, a graduate can work individually or as a member of a law firm, a lawyer-employee in the legal division of a business organization, or a lawyer within a government agency. Alternatives include corporate management, political office, government employment, and financial planning. This paper focuses on law school graduates admitted to the bar and practicing law.

Pre-Service Preparation. Before admission to the bar, the would-be lawyer must complete several major educational or training steps. First, in nearly all states, he or she must complete a four-year undergraduate degree followed by a three-year law degree, culminating in the Juris Doctor (JD) degree. Many post-JD programs also exist, but completion of a JD program is the only requirement for taking the bar examination or for being admitted to practice law. No specific undergraduate degree is required or even recommended before applying to enter law school. While many colleges and universities offer “pre-law” programs to

undergraduates, they are neither endorsed nor discounted by law schools.

In-Service Professional Development. Once admitted to the bar, lawyers are expected to stay current in their fields and become current in new fields through Continuing Legal Education (CLE). In all but three states, lawyers must complete a minimum number of CLE hours annually in order to keep their licenses active with the bar, but they are not required to pass any examinations demonstrating knowledge gained from those programs. Therefore, the legal profession’s CLE mandate could be interpreted as a requirement only to receive written CLE materials and to sit through CLE programs, whether they are live, on video or on the World Wide Web.

Professional Development for Managers. The lack of formal professional development for aspiring managers in law may have a negative impact on the profession. However, as the majority of lawyers focus on practicing law and not managing, the need for advanced professional management skills may not be so clear. Also, very few practicing lawyers aspire to “rise through the ranks” of management to reach the top, since that would require them to relinquish most, or all, of their law practice. What the legal profession has, and must continue to have, are non-lawyers trained to perform management functions within law firms, so that the lawyers in the firm can continue to do what they are trained to do—practice law.

Financing Professional Development. For nearly all lawyers, time is money, so devoting several hours or several days to CLE can be extremely costly, at times even beyond the tuition charged. In theory, at least, completion of these CLE courses makes the attendees

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better lawyers, but any precise measure of that benefit is impossible. Most state bars require members to attend a minimum number of CLE hours each year to maintain one's law license, so the obvious benefit to the practicing lawyer is the ability to continue the active practice of law. Given that CLE usually is mandatory, the majority of lawyers and law firms are presumed to pay the fees and attend the programs simply to continue practicing law. Lawyers evaluate CLE programs after attending them, but these written evaluations are used internally by the CLE organizations and are not part of any broader study on the effectiveness of such programs.

Accounting

Introduction. Careers in accounting vary from clerical to professional and the educational preparation necessary for each depends on the nature of the career path. For example, high school and junior college students can take a few accounting classes, learn an accounting software package, and then work as bookkeepers, clerks, or lower level accountants for corporations or small businesses. This report focuses on professional accountants who have, at a minimum, an undergraduate accounting degree.

Pre-Service Preparation. Typically, undergraduate accounting courses provide the general accounting education needed by all entry-level professional accountants. Most undergraduate accounting students can complete this course of study in four years. However, students wishing to specialize further often pursue dual degrees such as accounting and finance or accounting and management information systems. Students who want to sit for the CPA exam are required by law to have an undergraduate accounting degree, and in 40 states, 150 hours of college credit is required (in eight other states, the 150-hour requirement has been approved, but has not been enacted). As a result of the 150-hour requirement, many

students consider graduate degrees such as Master of Accountancy, Master of Taxation, or Master of Business Administration, with an emphasis in accounting as the *de facto* entry-level degree for public accounting. In addition to the general accounting education courses, these students typically specialized in attest, tax services or information systems.

In-Service Professional Development. The in-service professional development or Continuing Professional Education (CPE) of accountants depends on career track and certification. For those professionals who become certified by an accrediting organization, the accrediting body dictates the CPE requirements necessary to maintain the credential. Licensed CPAs must have 120 hours of CPE or its equivalent for each three-year reporting period in order to maintain their certification. Continuing professional education for CPAs is regulated by statute. The Uniform Accountancy Act, a model on which each state's accountancy law is based, has 18 standards that specify what qualifies as Continuing Professional Education for CPAs. Accrediting bodies such as the Institute of Management Accountants (IMA) and Institute of Internal Auditors (IIA) also require CPE for those who hold their credentials. However, unlike the CPA's requirements, they do not have the force of law, and each organization must establish and enforce its standards for acceptable CPE courses.

Professional Development for Managers. Managers in public accounting are selected after demonstrating their technical and managerial skills and successfully completing in-house training over a period of years. The amount and nature of the training that accountants receive during this process depends on the employer. Accountants are selected for managerial positions once they understand the business, have demonstrated managerial ability, and have the appropriate training and education. Many corporations

insist that their managers have a graduate degree before being admitted to the management team. After reaching the management level, the amount and type of training depend on the responsibilities of the manager. The training can be in-house or provided externally in executive training programs. Firms almost always provide funding for these programs.

Financing Professional Development. The benefit of professional development compared to its cost is difficult to identify. The fact that CPE is required for CPAs to maintain their licenses raises the question of whether CPAs would choose less-rigorous CPE courses just to maintain their licenses. While continuing professional education programs may vary in levels of difficulty, it is important to note that all courses must meet the minimum standards set by each state's board of accountancy before qualifying as acceptable CPE. While there may be those who manipulate the system, most professionals want the most benefit from their CPE dollars and not merely to meet CPE requirements in the easiest possible fashion.

Architecture

Introduction. All 50 states, the District of Columbia, and four U.S. territories (Guam, Northern Mariana Islands, Puerto Rico and U.S. Virgin Islands) require individuals to be licensed before they call themselves architects or contract to provide architectural services. Each jurisdiction has its own architectural registration board that establishes requirements for registration or licensure. Although registration laws vary, all boards require some type of college degree; a field internship, generally under the direct supervision of a registered architect; and successful completion of a nine-part examination. In addition, some jurisdictions require continuing education as a condition for an architect to retain his or her license. Thus, while professional development in architecture typically begins in a school of architecture, it

continues through internships at architecture firms, continuing education programs, and professional practice.

Pre-Service Preparation. Although education requirements for licensure vary from state to state, roughly 70 percent of the registration boards have established as their requirement a professional degree in architecture from a program accredited by the National Architectural Accrediting Board (NAAB) or Canadian Architectural Certification Board (CACB). Some state registration boards requiring an accredited professional degree in architecture also accept other educational credentials assessed as equivalent (e.g., a professional degree in architecture from a foreign institution). The educational requirements of the remaining jurisdictions also may allow for a pre-professional undergraduate degree program in architecture. All architectural registration boards require candidates to complete an internship or training period before they can be licensed.

In-Service Professional Development. Mandatory Continuing Education (MCE) is required by state registration boards for architects to retain their licenses. Twenty-six jurisdictions require MCE, although more are expected to adopt it as a requirement for licensure. Requirements vary by state but they involve completion of a specific number of hours in MCE programs, including seminars, workshops, formal university classes, conferences, and self-study courses. The time period in which the hours of MCE must be completed also can vary greatly, from one to three years. For example, Alabama requires 12 hours of MCE a year to maintain a license, whereas New York requires 36 hours every three years. Much of continuing education focuses on health, safety, and welfare (HSW) subject areas as defined by the various states' registration boards. Except for Kansas, every

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state registration board with MCE requires 8 to 12 of these hours each year in health, safety, and welfare areas.

Professional Development for Managers.

Except for very small projects (e.g., a single-family house), architects and interns work on projects as part of a team. Training in project management is generally informal, derived from extended experience as a team member. Among the factors in how quickly an individual moves from team member to project manager are time, experience, size of the practice, and an individual preference of wanting to manage a project, rather than design it, as a project architect. Still, more formal training and education for managers is often sought, including business school management-training programs, AIA training manuals, and evening and distance-learning courses. Courses, workshops, and in-study assignments in various aspects of project management are usually available from AIA continuing education courses.

Financing Professional Development. State registration boards balance the costs and benefits of professional development in light of their mandate to ensure the health, safety, and welfare of citizens. Mandating continuing education to retain licensure demonstrates how each board assesses that balance. Mandatory Continuing Education (MCE) has been established in 26 states and is being considered or implemented in another 17. These patterns suggest that more and more states are concluding that the benefits of MCE – particularly in health, safety, and welfare areas – outweigh the costs to registration boards (e.g., for record-keeping) and architects. However, to date there has been no systematic attempt to measure the effectiveness or worth of continuing education to the private sector. Since the average AIA member is licensed in three states, the likelihood of holding a license within a state with a MCE requirement is substantial. AIA's anticipation of this trend in state licensing

requirements was one factor that led to the establishment of the AIA/CES seven years ago.

Nursing

Introduction. A formal system of education for nurses began at the turn of the 20th century in the United States. Before that, nurses were trained in apprenticeship programs by physician committees, primarily at hospitals. As these programs matured, nurse “training” became nurse “education,” and a variety of different routes into the profession were developed. Some of the programs provided instruction primarily in hospitals while others began training nurses in institutions of higher education. Today there are a variety of options for both prospective nurses seeking pre-service professional development and certified nurses pursuing continuing education.

Pre-Service Preparation. Currently, there are three pre-service options for entry into professional nursing practice: the nursing diploma awarded by a hospital-based school; an associate's degree in nursing (ADN), awarded by a junior or community college; and a bachelor of science degree in nursing (BSN), awarded by a four-year college or university. Despite the differences in the three programs, nursing administrators say that all nurses perform on a similar level by the end of their first year of work, regardless of their preparation program. As a result, there is little consensus as to the preferred route of entry into practice. Regardless of the type of program in which students are enrolled, they all will have varied practice experiences in different settings.

In-Service Professional Development. The first in-service professional development program in which most nurses participate is the orientation for new hires, including mentoring from a more experienced nurse. These orientations include an introduction to both agency policies and procedures, a possible overview of hospital politics, and a review of

skills, which is sometimes accompanied by a final examination. In addition to orientation programs, agencies also provide nurses with the opportunity to learn about and utilize new products and technologies. Information about these areas, however, typically is delivered by a product salesperson and rarely, if ever, by an educator. Nurses also can continue their professional development through continuing education programs. More than half the states now require nurses seeking license renewal to earn Continuing Education Units (CEUs). State nursing boards do not prescribe how the CEU requirements are met, allowing nurses the flexibility of choosing how to earn their credits before presenting evidence of them to the state board.

Professional Development for Managers.

Hospitals often have no educational requirements for the lowest level of manager; community agencies require a bachelor's or master's degree. The training starts on the job, but most nurse managers recognize early in their careers that they need more education and usually begin coursework leading to a master's degree in nursing administration or business administration. In addition, they may take the ANCC's certification examination for "Nursing Administration" or "Nursing Administration, Advanced." Both examinations require the candidate to have at least a BSN degree; the advanced certification requires a master's of science in nursing (MSN) degree; and both require the candidate to have at least two years' administrative experience before taking the test. Certification implies expertise in the field; without the years of management experience, nurses are not considered expert. Nurses are responsible for financing their own education, however, hospitals and many other health care agencies do offer tuition reimbursement.

Financing Professional Development.

Nurses select CEU courses for any of several reasons. For example, if nurses need the CEU courses for certification, they will choose

programs that address topics applicable to the specialty requirements. If nurses need courses only for re-licensure, they generally will take those that are most convenient and least expensive since many hospitals are reluctant to pay for nurses to attend seminars or even give them time off to attend. Although it would seem to make sense that attending an educational program could improve professional practice, there is no research that supports that concept and hospitals maintain they are too short-staffed to allow employees time off for continuing education. Without documentation of the effectiveness of such programs, continuing education will not be a priority to the employer or the employee.

Firefighting

Introduction. The New York City Fire Department (FDNY) with its 203 engine companies, 143 ladder companies, and numerous special units (e.g., rescue companies, fireboats, etc.) is the largest fire department in the United States. More than 11,000 firefighters and fire officers staff these units. Professional development in the department begins when a candidate starts to prepare for the written and physical entry examinations and continues until a member retires.

Pre-Service Preparation. A civil service examination for potential firefighters is offered every two to four years. While the passing grade is 70 percent, only those who score the highest on the written exam (historically a grade greater than 90 percent) move on to the competitive physical exam. Grades on the written and the physical exams are combined and averaged for a final score, which is used to rank candidates for selection. Those approved are grouped into classes at the Fire Academy's Probationary Firefighter's School. After graduation, probationary firefighters are assigned to engine or ladder companies and remain on probation for their first 12 months of

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service, during which time additional training is provided.

In-Service Professional Development.

Training continues throughout a member's career in the form of daily company drills, Monday through Friday, and multi-unit drills on weekends. All units follow a department-wide schedule that also allows for drills of local interest and importance (e.g., high-rise buildings in Manhattan or brushfires on Staten Island). The Fire Academy also brings units to its Randall's Island facility and other satellite facilities for formal training. Some are on-going programs (e.g., search, tactical training, mask confidence), and some are instituted in response to current needs, such as terrorism awareness. Firefighters also attend training conferences around the nation, often at their own expense. The department sends representatives to the National Fire Prevention Association (NFPA), National Fire Academy programs, and emergency medical service (EMS) conferences, as well as to highly technical training programs unavailable locally. Of course, money is always a limiting factor, as even no-cost training carries the expense of paying overtime to fill the member's slot on the fire apparatus while the member is away.

Professional Development for Managers.

Fire chiefs become managers by studying for and passing promotional exams. Once promoted, battalion chiefs receive four weeks of training at the Fire Academy. They then begin a period of "covering" — working all over the city, filling in for other chiefs on vacation or medical leave — which may last up to 36 months, depending on the needs of the department. Only then do they receive a specific assignment. Beyond the limited training that accompanies each promotion, the only other "required" training is whatever self-training is necessary to pass the exams.

Financing Professional Development. It has always been difficult to quantify the effectiveness

of the department's training. There are few meaningful standardized tests, such as those used by school systems, and no easy measures, such as sales being up or down. It is possible to quantify some specialized training, such as measuring accident rates to evaluate driver training programs, but there is no clear way to measure other training. The city has tried to use the decline in fire deaths as a measure of the department's performance, just as the murder rate is used to measure the Police Department's success. Yet, whether a reduced fire-death rate is a factor of social changes completely independent of the department's performance remains unclear. In the years with the highest number of fire deaths in the city's history, the department's training and performance were never questioned.

Policing

Introduction. Although in some fields the terms "education" and "training" are often interchangeable, in policing a clear distinction exists between them. "Education" is limited to mean the earning of academic credits—not necessarily toward a degree — at an accredited college or university. "Training" typically refers to attending specifically oriented courses designed to provide information and develop skills in police practice (e.g., report writing, traffic accident investigation, and firearms training). Every state except Hawaii has a police officer standards and training commission — commonly referred to as a POST commission — although the names of the agencies vary by state. Each of these commissions certifies or licenses police officers and establishes minimum training requirements or regulates legislatively mandated training standards.

Pre-Service Preparation. In policing, no clinical training is required before a candidate is appointed, certified, or licensed. However, many police agencies prefer college students who have served an internship because they

can provide references who can comment on the applicant's job activity and demeanor in a policing environment. Some police officials also feel that an internship can serve as a "weeding out" process in which some students may learn they are not suited for policing. Generally, police internships are not paid.

In-Service Professional Development. In most – but not all – states, officers are required to take part in some form of in-service training that is certified by the POST commission. In some cases, specific issues are mandated, however most states leave the in-service training topics to the discretion of the police department, so long as that training is POST-certified. POST-certified training can be presented by the department itself or a university, private company, or professional organization. Training courses can be in-class instruction, distance education, Internet-based instruction, or self-paced learning.

Professional Development for Managers.

Once a person is promoted to a management position, he or she typically is queued to attend some sort of management training. Various options for such training are available, although only a few large police agencies and a few states have their own management training programs. The most highly sought-after police management school is the Federal Bureau of Investigation National Academy (FBINA).

Financing Professional Development.

Policing relies almost exclusively on public financing and in tight budget times, professional development is one of the first areas to be cut. While this could be viewed as short-sighted, police executives would argue that the bulk of their responsibilities are public safety and crisis management. Those areas cannot be sacrificed to budget cuts, but professional development can.



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