

AN ANALYSIS OF TEACHER SELECTION TOOLS IN PENNSYLVANIA

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The purpose of this study was to examine teacher screening and selection tools currently being utilized by public school districts in Pennsylvania and to compare these tools to the research on qualities of effective teachers. The researcher developed four research questions that guided her study. The Pennsylvania Association of School Personnel Administrators (PASPA) granted the researcher permission to survey their members. PASPA's Executive Director sent an e-mail describing the study and invited his members to participate in the electronic survey. The e-mail asked members to click on a link that took them to a 10-15 minute survey about teacher selection tools. Fifty-five members completed the survey, with a total response rate of 32 percent. Quantitative data were analyzed using, percentages, means and standard deviations. Qualitative analysis was used to interpret data obtained from open-ended questions.

The results of the study indicated that approximately 71% of reporting Pennsylvania public schools were utilizing some type of electronic on-line warehousing database for which to search and screen potential teacher candidates. However, a high number of reporting school districts were not using any type of commercial product for screening or interviewing candidates. Further, 93% of reporting school districts were using locally created interview questions. Finally, participants indicated that the top three factors considered when hiring a teacher were the candidate's: knowledge of teaching and learning, content knowledge, and knowledge of

good classroom practices. There were insufficient data to determine if the commercial or locally created teacher selection tools were linked to the qualities of effective teachers.

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PREFACE

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Finally, the most important thanks of all, thank you to my God, the Most High! Thank you for reminding me that during life's trials and tribulations I am to seek refuge in You and your word!

1.0 LITERATURE REVIEW

Vignette #1 The district office sends Principal Paul Edwards the application files of three potential social studies teachers who were screened and interviewed at the central office. The group contains an outstanding basketball coach, Bill DeBry, who used to be the assistant coach of a nearby team for inner-city young women. Mr. DeBry's recommendations are strong—all of them mention his popularity with students—and he is a dynamic interviewee, suggesting ideas for more efficient team teaching and offering his extensive library of history videos for use in the classroom.

Mr. Edwards selects Mr. DeBry on the strength of his qualifications, without considering the other two candidates.

“He is an excellent social studies teacher, and a winning personality,” says Mr. Edwards. “Also, he will develop our young women’s basketball program. This school needs community recognition; our test scores are middling, and our funding and morale are low. Sports teams stand strong in this community.”

What’s the problem? *Mr. Edwards has ignored the quality of work among Mr. DeBry’s students and has focused on the candidate’s contribution to athletics, when the open position is for social studies.*

Vignette #2 “In this district we place a heavy emphasis on school-improvement management,” says the superintendent to applicant Lisa Sandholtz. “I see you attended the after school planning meetings at the school where you student-taught. How much do you know about local school planning? If you were hired to fill this position, would you continue to participate fully?”

“Well,” says Lisa, “I feel bad that I have both a theoretical and practical understanding of school improvement. As you can see from my portfolio, I carried out parent surveys with my cooperating teacher. We found that parents wanted more homework and a Web site for updates on classroom assignments. I feel that school-improvement programs really help teacher morale.”

The superintendent sits back in her chair.

“Lisa you were the only candidate for this position with experience in school improvement. As you know, by having teachers work as partners with parents and

principals on local problems, we get school wide progress. Personally I know that this type of group effort works better than other kinds of school reform, such as more testing and standards. We need teachers who will put in extra planning time with each other here in our district. I think you'll be a fine addition to our district.”

What's the problem? *The superintendent has focused on a single narrow hiring criterion—school-improvement management. In addition, he [she] has not involved the judgment of Lisa's own teachers or consulted with others before making his [her] selection.*

Vignette #3 Dr. Schwartz calls a professor at the local teacher-education program, who strongly recommends a recent applicant, describing her as one of the top five in a large group of talented student teachers. After selecting one more promising application from the district office, Dr. Schwartz interviews both candidates. She calls a teacher to sit in on the second half of one candidate's interview. In the end, the applicant recommended by the university is offered the job.

What's the problem? *Dr. Schwartz has chosen from too small a pool of candidates and has inconsistently considered the perspectives of current faculty. Like the superintendents in the other two vignettes, he has attached too much importance to information gleaned from interviews. (Peterson, 2002 pp. 1-4).*

Bad hiring choices negatively impact school morale, community perception and most importantly, student performance. In addition, the financial impact (e.g., loss of salary, training and loss of time for administrators and sometimes union officials) for many, already financially struggling school districts, is devastating. A poor hiring decision can cost a district hundreds of thousands of dollars. A professor and researcher in Western Pennsylvania, Dr. Robert Strauss, has studied this issue for over a decade. He proposes that the financial impact of a teacher's salary reveals the importance of the teacher selection process:

“The employment decision, because it is . . . a long term decision, involves the long-term commitment to pay salaries which will rise with if not above the rate of inflation . . . the sort of financial commitment made at the time of hiring is on the order of \$300,000 to \$500,000 per teacher . . . many school districts in Pennsylvania do not pay enough attention to the personnel process . . .” (Strauss, Bowes, Marks & Plesko, 2000, p. 389).

If the financial impact of a bad hiring decision is not enough to make one take notice, then most certainly one should consider the effects of a poor hiring decision on children. A poor hire can have a

long term residual impact on students and student achievement (Peterson, 2002). It is for these reasons that hiring quality teachers is one of the most important tasks of any educational administrator (Ebermeier & Ng, 2006; Peterson, 2002; Stronge & Hindman, 2006).

If hiring quality teachers is one of the most important tasks of an administrator, then what does the research tell us? Despite a preponderance of evidence linking teacher quality and student performance (Darling-Hammond, 1997; Darling-Hammond, Holtzman, Gatlin, & Heilig, 2005; Ferguson, 1991; Ferguson, Clark, & Stewart, 2002; Lewis & Piak, 2001), there is still very little research on teacher selection and hiring (Liu & Moore Johnson, 2003; Peterson, 2002). Young (1984) noted, considering “the frequent use of the interview [as a teacher selection tool] and the importance of teacher selection, it is surprising that educational researchers have not devoted more attention to this area” (p. 43).

This literature review focuses not only on teacher selection, but also on the historical perspective of teacher hiring. If over 25 years of research has given us greater insight about the qualities of effective teachers, then it is not beyond reason that one begins to ask, “Are administrators using this knowledge in practice to look for and hire teachers with these qualities?” Research indicates that teacher quality and teacher hiring are intertwined (Stronge & Hindman, 2006). Effective teachers can not be hired to staff the nations’ classrooms without school districts unless administrators first understand the qualities of effective teachers. The following sections comprise this analysis: (a) What is teacher quality?; (b) Why is teacher quality important to teacher selection?; (c) What is teacher selection? (d) What does teacher recruitment and screening look like?; (e) How are teachers hired? and (f) How has the utilization of electronic employment technologies impacted teacher selection?

Using teacher quality as the foundation, the intent of this study is to examine teacher selection tools currently being utilized by public school districts in Pennsylvania and compare these tools to the research on qualities of effective teachers.

1.1 WHAT IS TEACHER QUALITY?

Teacher quality has generated debate among educators, researchers and policy makers for decades. Many researchers contend that it is one of the most important factors in student achievement (Stronge, 2007; Darling-Hammond, 1997; Darling-Hammond et al., 2005; Haycock, 1998). According to Lewis and Piak (2001), “Nothing affects the achievement of ...[students] as much as the quality of the teaching they receive” (p. 20). Pillsbury (2005) goes as far to claim that “even a much studied and written about topic like curriculum, is not nearly as important to student achievement as is an effective teacher.” Furthermore, “a great curriculum in the hands of a poor or mediocre teacher is nothing more than a poor or mediocre curriculum. A great curriculum in the hands of a skilled and effective teacher is a highly effective curriculum. In fact, great teachers are even able to get kids motivated and growing without a fancy curriculum” (p. 36).

Teacher quality is a multifaceted concept that both legislators and educators have tried to define through federal law, student achievement, value-added assessment, certification, qualities of effective teachers and effective teacher characteristics. The following section will attempt to highlight the research and background surrounding the context of teacher quality.

1.1.1 Teacher Quality as Defined by No Child Left Behind

Federal legislation, the No Child Left Behind (NCLB) Act of 2001 (P.L. 107-110, 115 Stat. 1425), signed on January 8, 2002 by President George W. Bush, required that all teachers be “highly qualified” by the year 2006. NCLB defined teacher quality through certification and ultimately content knowledge. The term “highly qualified” is used in the legislation to outline specific criteria that all Title I schools’ teachers must possess: a bachelor’s degree, state certification, demonstration of content and competency for each subject taught. A new elementary teacher must demonstrate competency by passing a state exam in reading, language arts, mathematics and writing. At the secondary level, (grades 7-12), a new teacher must pass a state test in each academic subject area in which they teach. All secondary special education teachers, who are the teacher of record, must also demonstrate competency within the subject taught (Trahan, 2002). The primary purpose and intent of NCLB was to raise teacher quality requirements, thus raising student achievement.

1.1.2 Teacher Quality and Student Achievement

Over the last ten years, many researchers have studied the notion of connecting teacher quality to student achievement (Ferguson, 1991; Haycock, 1998; Strauss et al., 2000). In a 2002 study by Harold Wenglinsky of the Educational Testing Service, classroom practices of teachers and teacher characteristics were examined and found to be just as important in student achievement as factors outside of school like student background. Data on 7,146 eighth graders who took the 1996 National Assessment of Educational Progress (NAEP) mathematics assessment were analyzed and the findings suggested that the “effects of classroom practices, when added to those of other teacher characteristics, are comparable in size to those of student background, suggesting that teachers can contribute as much

to student learning as the students themselves” (p.14). Further, Wenglinsky points out five specific variables that are positively associated with student achievement: teacher major in college, professional development in high-order thinking skills, professional development in diversity, hands-on learning and the use of higher order thinking skills in the classroom.

The National Commission on Teaching and America’s Future reviewed many research studies that repeatedly indicated that teacher quality accounts for the majority of the variation in student achievement (Darling-Hammond, 1997). One study that the Commission reviewed went as far to say that teacher qualifications accounted for more than 90% of the variation in student achievement in reading and math at all grade levels tested (Armour-Thomas et al., 1989).

Ronald Ferguson (1991), found that a teacher’s expertise as measured by scores on licensure exams, advanced degrees and years teaching, accounted for about 40% of the measured variance in students’ reading and mathematics achievement at grades 1 through 11, more than any other single factor.

1.1.3 Teacher Quality as a Major Variable in Value-Added Assessment and Achievement Gap

Key research on the importance of teacher quality has been found almost serendipitously in research on value-added assessment (Haycock, 1998; Sanders & Rivers, 1996) and the achievement gap (Ferguson, 1991; Ferguson et al., 2002). The large scale research on value-added assessment in the state of Tennessee was one of the first studies to use statistical methods to measure a child’s achievement growth over time. The history of this research dates back to the early 1980’s when Lamar Alexander, Governor of Tennessee at the time, was searching for an objective measure for which to measure his schools. Bill Sanders, a statistician at the University of Tennessee, and his research team

used theories that they had applied to agricultural genetics to compare test results of students in the state (Sanders & Horn, 1998). A large longitudinal database linking student names to their school and teacher was constructed over time. As student scores from the Tennessee state achievement test and other achievement tests were loaded into the system, Sanders and his team applied a “statistical mixed-model theory and methodology to enable a multivariate, longitudinal analysis of student achievement data” (p. 2). One of their biggest findings was that fifth grade students taught by three effective teachers in a row gained 50 more percentile points on the state’s assessment test than did their peers who had been assigned to ineffective teachers for three years in a row. Furthermore, students who had poor teachers for three years in a row severely halted student opportunities to keep up in school (Sanders & Rivers, 1996). Sanders research not only pointed to the importance of teacher quality on student achievement but also, to the cumulative and residual effects of having an effective (or ineffective) teacher sequentially year after year (Jordan, Mendro & Weersinghe, 1997; Sanders & Horn, 1998; Sanders & Rivers, 1996). Sanders defines effective versus ineffective teaching by honing in on individual student growth from year to year. “TVAAS utilizes the scaled scores students make over time to model their [the student’s] learning pattern” (p. 3). This learning pattern is tracked from year to year and analyzed. Over time, the TVAAS model can predict what a typical growth pattern might look like for each individual student each year (Sanders & Horn, 1998).

In a follow up study to the TVAAS study, researchers (Wright, Horn & Sanders, 1997) were looking at the factors impacting academic gain among high-achieving students and once again found that “teacher effect [was] highly significant in every analysis and ha[d] a larger effect size than any other factor in twenty of the thirty analyses.” (Sanders & Horn, 1998, p.4). In a discussion of their findings, Wright et al. (1997) conclude that the differences in teacher effectiveness were the dominating factor affecting student academic gain.

TVAAS research (Sanders & Rivers, 1996) also showed that African-American children were disproportionately assigned to the least effective teachers. This finding, and others like it (Haycock, 1998), speak to the achievement gap and indicate the need for effective teachers in all of America's classrooms. Ronald Ferguson, an economist at Harvard, has been studying the achievement gap for more than a decade (Harvard Education Letter, 2006). In 2002, Ferguson analyzed large-scale data and found that student achievement is almost entirely explained by differences in teacher qualifications and effectiveness.

Katie Haycock, President of the Education Trust, a child advocacy organization, has studied this notion of teacher quality; Haycock, has, especially, focused on teacher quality as it relates to poor and minority children. In 1998, Haycock analyzed large scale research studies on effective teaching in Tennessee, Dallas and Boston. She found that students who were taught by effective teachers in reading and math exceeded the national average in these two areas, while their peers, who were taught by ineffective teachers, showed no growth. Haycock asserts that "if we only took the simple step of assuring that poor and minority children had highly qualified teachers, about half of the achievement gap would disappear" (1998, p. 2).

1.1.4 Teacher Certification

When teacher quality is discussed, often teacher certification is one of the first criteria examined. The research indicates that teacher certification does matter and certainly plays a role in what school districts should first consider in the paper screening process.

A study conducted in Arizona by Laczko-Kerr and Berliner in 2002 examined the effects of different types of teacher certification on student achievement. The researchers compared students taught by under-certified primary school teachers with students taught by regularly certified primary

school teachers. The sample of under-certified teachers included: emergency, temporary and provisionally certified teachers. One subset of the under-certified group were from the national “Teach for America” (TFA) program. The TFA teachers were recent college graduates placed in “high need” schools (low-income urban and rural school districts). Results of the study indicated that students of TFA teachers did not perform significantly different from students of other non-certified teachers. However, students of certified teachers did perform significantly better than those students having under-certified teachers. Furthermore, the differences were substantial, with students of under-certified teachers making 20% less academic growth per year than those taught by certified teachers.

Darling-Hammond et al.’s (2005) research further supports the aforementioned research with her study in Houston, Texas on teacher preparation, teacher certification, Teach for America and teacher effectiveness. This study examined student achievement data in correlation to teacher certification, experience and degree levels. Her findings indicate that “certified teachers consistently produce stronger student achievement gains than do uncertified teachers.” (p. 23).

Extensive research studies on National Board Certification also echo this finding (Cavalluzzo, 2004; Goldhaber & Anthony, 2004; Smith, Gordon, Colby & Wang, 2005; Vandevort, Amrein-Beardsley, & Berliner, 2004). A recently released report by the National Research Council, entitled “Assessing Accomplished Teaching: Advanced-Level Certification Programs,” found that students who were taught by a National Board Certified teacher consistently made high gains on achievement tests as compared to those students taught by teachers without National Board Certification (Hakel, Anderson Koenig, & Elliott, 2008).

There are now 64,000 National Board Certified Teachers (NBCT) across the United States; they make up about two percent of the teaching staff across the nation (NBPTS Press Release, 2008). A teacher seeking this certification does so through The National Board for Professional Teaching

Standards (NBPTS). The NBPTS was created in 1987 as a result of the Carnegie Forum on Education and the Economy's Task Force on Teaching as a Profession's *A Nation Prepared: Teachers for the 21st Century*. The NBPTS has developed Five Core Propositions from within teaching standards were developed for twenty-five certification areas. These propositions include:

- Proposition 1: Teachers are Committed to Students and Their Learning
- Proposition 2: Teachers Know the Subjects They Teach and How to Teach Those Subjects to Students
- Proposition 3: Teachers Are Responsible for Managing and Monitoring Student Learning
- Proposition 4: Teachers Think Systematically about Their Practice and Learn from Experience
- Proposition 5: Teachers are Members of Learning Communities

Teachers seeking National Board Certification must: hold a Bachelor's degree, have completed three full years of teaching/counseling experience and possess a valid state teaching/counseling license. Assessments include the submission of four portfolio entries that consist of video recordings, examples of student work and evidence of the teacher's impact on student learning outside of the classroom (with families, community or colleagues). The candidate must also demonstrate content knowledge through six exercises pertaining to the specific certification area. The content assessments are administered via a computer at one of the designated testing centers across the United States. The entire process to become National Board Certified may take up to three years and current fees are \$2,565.00 (NBPTS, 2008). In establishing criteria and a National Certification, the NBPTS defined superior teaching, but had no empirical data to support their claim. One of the first studies to provide such empirical data was conducted by researchers from Arizona State University, (Vandervoort, Amrein-Beardsley, Berliner, 2004).

Vandevoort et al. (2004) conducted an extensive, longitudinal study of thirty-five National Board Certified Teachers in fourteen Arizona school districts. The research team collected four years of data to examine the achievement relationship between students assigned to National Board Certified Teachers versus those assigned to non-National Board certified teachers. Vandevoort's findings indicate that elementary students assigned to National Board Certified teachers achieved at a higher rate (over one month), as compared to those who were assigned to non-National Board Certified teachers.

Although some criticize the research on teacher quality and its relationship on student achievement (Walsh, 2002), over the last 25 years a significant amount of research has indicated its merits.

1.1.5 Qualities of Effective Teachers

Teacher quality is a broad term that has been defined by researchers differently dependent on the measure(s). Dr. James Stronge, University professor and international expert on teacher quality, recognized the complexity of defining teacher quality... "if a single method for developing an effective teacher existed, such a teacher would be in every classroom" (Stronge 2002, pp. vii). Stronge also commented in his book *Qualities of Effective Teachers* (2002) that effective is an "elusive" (p.vii) concept and may be difficult to narrow. However, by looking at decades of effective teacher research, one may begin to identify key characteristics of effective teachers. In Stronge's research on effective teachers, he named the following characteristics and behaviors as the most important to consider when hiring a teacher:

1. **prerequisites of effective teaching** (teachers background and professional preparation) (e.g., verbal ability, knowledge of teaching and learning/pedagogy, certification, content knowledge and teaching experience)
2. **teacher as a person** (personal attributes or affective characteristics, non-academic interactions with students) (eg., caring, fairness and respect, interactions with students, enthusiasm and motivation, attitude towards teaching and reflective practice)
3. **classroom management and organization** (this topic would also include discipline)
4. **organizing for instruction** (e.g., importance of instruction, time allocation, teacher expectation and planning)
5. **implementing instruction** (e.g., instructional delivery)
6. **monitoring student progress and potential** (e.g., student assessment and student expectations)

Stronge's qualities of effective teachers are founded in years of research with each category being supported by 70-90 independent research studies. Stronge and Hindman go on to point out in their book entitled, *The Teacher Quality Index* (2006) that districts should look for these qualities and test for these qualities in their interview process with formal interviewing protocols. Further, that school administrators utilizing such protocols should be formally trained to increase inter-rater reliability and validity.

1.1.6 Effective Teacher Characteristics Connected to Student Achievement in Pennsylvania

Whether one refers to the behaviors of effective teachers as “qualities” or “characteristics”, need not be as important so much as what impact these behaviors have on student achievement. One such large scale study across an entire state makes exactly this point. An examination of student performance (as measured by the Pennsylvania System of School Assessment, Math and Reading) in 501 public school districts, found that student performance was dramatically impacted by specific teacher characteristics. Further, the researcher compared these results to the teacher selection process and found the following:

Student performance was higher when school districts:

- Requested additional information beyond the state standard application in the screening process (NTE exam scores, Praxis scores, written recommendations). Written recommendations were highly correlated to higher student achievement;
- Used overall grade point average and grade point average in the candidate’s major in the initial screening;
- Used past performance in teaching in initial screening;
- Used references and recommendations in initial screening.

Student achievement was lower when school districts:

- Screened applicants on the basis of whether or not the applicant is a resident in the district. (Student achievement was lower at all grade levels. These were some of the strongest correlations that the researchers found.);
- Hired alumnae of the district.

Student achievement showed no change when:

- Districts emphasized community involvement and willingness of the candidate to advise or coach extracurricular activities in their initial screening. (Strauss, 1998).

Furthermore, Strauss (1993, 1998, 2000) points out in his research that teacher scores on teacher licensure exams (NTE & Praxis) are directly correlated to student achievement. His research is supported by other researchers as well (Ballou & Podursky, 1997). Strauss contends that a teacher's level of content knowledge is vital in improving student achievement. Strauss (1999) goes on to say that the level of content knowledge needed by teachers is difficult to achieve in the traditional teacher training programs that emphasize pedagogy over content. In 1999, twelve states in the nation did not require a prospective teacher to complete a degree at a state-approved college or university (Strauss, 1999).

Regardless of how one refers to teacher quality - teacher effectiveness, effective teacher characteristics, or qualities of effective teachers, researchers and educators seem to agree that effective teachers should have a positive impact on the end goal – student achievement. Table 1.1 provides an overview of teacher quality as revealed by the literature review.

Table 1.1 Key References for Teacher Quality

Qualities of Effective Teachers											
Reference	High Score on Licensure Exams	Verbal Ability	Knowledge of Teaching & Learning	Certification	Advanced Degree	Content Knowledge	Teacher Preparation	High Student Achievement & Growth	Classroom Management / Practices	Teaching Experience	Professional Development
Ballou & Podursky (1997)	X					X					
Darling-Hammond (2005)				X				X			
Ferguson (1991)					X					X	
Haycock (1998)								X			
Laczko-Kerr & Berliner (2002)				X							
National Board for Professional Teaching Standards (2008)			X	X		X			X	X	X
No Child Left Behind Legislation (NCLB) (2002)				X		X		X			
Sanders & Horn (1998)								X			
Strauss (1998, 1999)	X	X		X		X		X		X	
Stronge (2002, 2007)	X	X	X	X		X	X	X	X	X	
Vandervoort et al., (2004)				X							
Weglinsky (2002)			X			X	X		X		

1.2 WHY IS TEACHER QUALITY IMPORTANT TO TEACHER SELECTION?

In the last chapter, a substantial amount of evidence was presented indicating that teacher quality is vital to student achievement and success. The remaining chapters will reveal a clear intersect between teacher quality, teacher selection and the hiring practices embedded in selecting teachers to staff our nation's classrooms.

First, teacher quality is important to teacher selection for the most obvious reason – children. As in any profession, some teachers are good at what they do, and others are not . . . according to Gary Gordon, managing consultant for the Educational Services Division of the Gallup Organization, “research spanning more than 25 years suggests that the people who are the best in any field talk and behave differently from those who are less productive.” (p. 305). Gallup’s study on urban teacher development indicated that teachers who were ranked low by administrators and students were typically the most concerned about discipline, whereas teachers ranked high by administrators and students “emphasized knowing students and offering opportunities for student growth” (p. 305). Moreover, outstanding teachers saw their job as one in which they contributed to students’ learning and growth. The lower-rated teachers perceived their job to be one in which they taught the curriculum (1999).

If we know that teacher “A” behaves significantly different than teacher “B”, and that teacher “A’s” children consistently gain a year plus of academic skills, then why are not administrators looking for, and hiring teacher “A’s”? In an extensive study of teacher hiring practices across the state of Pennsylvania, Strauss (1999) found extreme variability in hiring practices and the quality of teachers hired. Furthermore, he uses a statistical analysis to correlate student achievement to teacher selection:

...common sense suggests that the more careful districts are in selecting teacher, and the more attention paid to the academic background and achievement of teachers in the selection and employment process, the more likely it is that the district’s own students will perform better on

competency and achievement tests. What we find is consistent with common sense: districts which are more professional in their hiring process are also districts in which students demonstrate greater interest in further education, and achieve higher test scores (Strauss et al., 2000, p. 405).

Another reason that teacher quality is so important to teacher selection is because of the complex process involved with firing a teacher. In many states (like Pennsylvania) teachers are not considered “at will” employees. A professional employee can not be terminated without going through a formal process under the law; thus giving the professional employee more rights before dismissal (Levin, 2008, School Code Section 11-1122). Further, many teaching forces are unionized in many states (like Pennsylvania), giving teachers even more rights under Collective Bargaining Agreement rules. Thus, if a bad hire is made, it is more difficult and time consuming to terminate, than to keep an unsatisfactory teacher. “Who a district hires, unless they choose to leave voluntarily, is thus likely to be with the school district for a very long time.” (Strauss et al., 2000, p. 389). If firing a teacher is so difficult, then it is reasonable that administrators charged with hiring, should know and understand best practices in teacher selection.

1.3 WHAT IS TEACHER SELECTION?

Teacher selection is the process by which the best most qualified and effective teacher candidate is chosen to fill a position. Stronge and Hindman’s (2006) suggest that teacher selection is a “hierarchical process” . . . consisting of the following steps: “the employment application, screening interview, building-level interview and other which may include a writing sample, a demonstration lesson, additional interviews, and so on” (pp. 4-5). The most commonly used format for evaluating applicants is the employment application. The second most common format is the interview (Schmidt

& Rader, 1999). Stronge and Hindman's (2006) research focuses on the interview. They believe that this step is where school districts get the greatest chance to learn about applicants. Their formal interview protocols in the screening and subsequent interviews involve asking each applicant the same question, scoring the applicant's answers with a formal rubric and taking notes during the interview. Stronge's (2002) research on the *Qualities of Effective Teachers* provided the research behind the questions. Stronge and Hindman's (2006) research on the perceptions of school leaders on the qualities of effective teachers revealed that school leaders involved in the hiring process of teachers typically do not receive training in interviewing.

1.3.1 Historical Perspective on Teacher Selection

Historically, teacher selection has not been given much attention in the research. When it has, it is only within the context of teacher evaluation or training. One of the first comprehensive books written on the subject, *Selection and Evaluation of Teachers* (Bolton, 1973), highlighted the importance of teacher selection. This text pointed out that a school district's process to identify teacher candidates should also be linked to the evaluation system. However, this text described the selection process as determining the district's needs in a position and looking for a "fit" for the teacher. It does not define teacher quality, teacher effectiveness, teacher selection or interviewing.

Consequently, the employment interview, in general, dates back to the 1940's when the Army used interviews to match soldiers with specific jobs. Later studies supported this practice by finding that matching soldiers to positions was much more effective than random assignment. This notion of matching candidates to jobs was prevalent during most of the twentieth century. In the later part of the twentieth century, studies began to focus more on the actual interview (Eder & Harris, 1999).

Today, behavior-based interviewing (BBI), a format borrowed from business and industry, has become increasingly more popular as an interview format in education (Deems, 1994). This style of interviewing is based on the notion that that past behavior is the best predictor of future performance. BBI uses specific questions based on teacher candidates' skills, background, and experience to determine if they are the best candidate for the job. Questions ask candidates to give concrete examples of different types of teaching skills necessary for the classroom (e.g., "Tell me about a time when ..." or "Describe a situation where ..." (Clement, 2008, p.44). Research supports this type of interviewing for teaching positions (Stronge & Hindman, 2006).

Aside from the interview format, researchers have also devoted much time to studying the interview as it relates to teacher selection (Stronge & Hindman, 2006; Strauss, et al., 2000; Wise, et., al.). In an era of heightened accountability for student achievement, teacher selection has become a more important topic. However, one can not discuss teacher selection without first examining the market.

1.3.2 Teacher Supply and Demand

The supply and demand of teachers impacts the teacher selection process dramatically, with some school districts having an overabundance of teachers to fill few vacancies (suburban), and others struggling to fill many positions (urban and rural) (Kersten, 2008; Rutledge, 2007). The demand for teachers is determined by several factors: field/subject certification, region (American Association for Employment in Education [AAEE], 2009), the number of high school graduates interested in becoming a teacher (Strauss, 1998), student enrollment (AAEE, 2009), teacher to student ratio/class size; (Banickey & Parisella, 2001), federal or state expenditures (AAEE, 2009 & Bureau of Labor Statistics,

2008), legislation and funding for special programs, (Bureau of Labor Statistics, 2008), and attrition (either by retirement or teachers who leave the profession) (Banickey & Parisella, 2001).

The Bureau of Labor Statistics (2008) indicates that there is an adequate supply of teachers certified in elementary education, physical education and social studies. However, there is a lack of certified teachers in math, chemistry, physics, bilingual education and foreign language. In addition, vocational educational schools are having difficulty staffing their positions across disciplines at the middle and high school levels.

Certification is further impacted by region. The American Association for Employment in Education (AAEE) (2009), shows the greatest demand for teachers across the United States to be in the following regions (ranked according to greatest need across all subject areas):

- 1) Alaska
- 2) Hawaii
- 3) The Southeast (West Virginia, Virginia, Kentucky, Tennessee, North Carolina, South Carolina, Mississippi, Alabama, Georgia and Florida)

Some states like Pennsylvania have overproduced for the market. Robert Strauss' research on *Teacher Preparation and Selection in Pennsylvania*, indicates that, “. . . far more teachers have been certified historically (over 500,000) than are currently employed in the classroom (100,000). Pennsylvania's teacher preparation institutions continue to certify far more elementary teachers than can ever be hired within the state. Overall, 20,000 new teaching certificates are being awarded annually, while less than 2,000 new teachers are being hired.” (1998, p. 2).

Additional factors affecting teacher supply and the overall candidate pool is the lack of certified male teachers (K-6) and the lack of minority teachers (K-12). Chmelynski (2006) reports that the

number of male teachers is at its lowest point in over forty years. The lack of minority candidates will continue to be a challenge for supervisors charged with hiring, especially as minority student enrollment continues to increase in schools (BLS, 2008).

Public elementary and secondary school enrollment peaked in 2005-06 at 49.1 million students. Almost 70% of this 49.1 million enrollment (34.3 million) consisted of elementary students (pre-kindergarten through eighth grade). The other 30% (14.8 million) were in grades 9-12. During the school year of 2005-06, public schools employed 6.1 million full time staff (51.2% were teachers) (National Center for Educational Statistics, 2007). According to the National Center for Educational Statistics, “public school enrollment is projected to set new records each year from 2008 through 2017, reaching an estimated high of 54.1 million students.” (Livingston, 2008).

By contrast, the Bureau of Labor Statistics, (BLS), projects that student enrollment, through 2016, will rise more slowly than in the past. Demographers attribute this stabilization to children of the baby boom generation leaving schools. More importantly, projections on student enrollment vary by region – with the Northeast declining in enrollment, the Midwest remaining stable and certain states in the South and West (Nevada, Arizona, Texas and Georgia) seeing growth (2008).

According to the BLS (2008), teachers held about four million (3,954,000) jobs across the country in 2006. Of those four million teaching jobs, 1.5 million were elementary, 1.1 million were secondary, 674,000 were middle school, 437,000 were preschool, and 170,000 were kindergarten. The BLS is predicting that employment of K-12 teachers will grow by 2016 with 4,433,000 teachers needed to staff the nation’s schools. This will be a 12% increase in six years. The BLS describes this growth as “fast as average” in comparison to other professions (p.4).

Another factor influencing teacher demand is class size. According to the National Center for Educational Statistics, “pupil/teacher ratio decreased from 17.4 to 15.7 between 1992 and 2005; and it

is projected to decrease further to 14.6 in 2017...” (Hussar & Bailey, 2008, p. 17). This statistic could mean more jobs for teachers.

Other factors affecting the teacher job market are federal/state expenditures, legislation and funding for special programs. According to the BLS (2008), “At the Federal level, there has been a large increase in funding for education, particularly for the hiring of qualified teachers in lower income areas.” Further, “...some States are instituting programs to improve early childhood education, such as offering full day kindergarten and universal preschool.” These types of programs combined with the projection for higher enrollment, and lower teacher/pupil ratio will likely cause a higher demand for preschool teachers (BLS, 2008).

Although the number of teachers employed nationally varies from state to state and is dependent on several factors already discussed, the BLS predicts that over the next ten years job opportunities will vary from “good to excellent”, with most job openings resulting from the amount of teachers expected to retire between 2006-16 (2008, p.4). Many states offer early retirement incentives whereby teachers who have taught for 35 years and are 55 years of age, can retire with a full pension (Illinois Teacher Retirement System, 2007; Pennsylvania School Employees Retirement System, 2008).

In addition to retirements, the Alliance for Excellent Education (2005), claims that up to fifty percent of teachers leave the profession within the first three to five years. They leave and enter other careers due to lack of support (both by administrators and colleagues), lack of resources (especially in poor and urban schools) and lack of training (Darling-Hammond, 2003; Wong, 2004). This trend has led some experts to predict that the nation will need up to 2.4 million new teachers by 2010 (BLS, 2008; Haberman Foundation, 2007).

The financial cost for replacing a teacher is significant. According to the Alliance for Excellent Education, when a teacher leaves the education system, the cost is approximately \$11,500 for recruiting, hiring and providing orientation for the replacement (2005).

1.3.3 Legal Implications in Teacher Selection

Another area that can be quite costly, is lawsuits related to hiring. In the litigious environment of the United States, it is imperative that administrators responsible for teacher selection be cognizant of federal mandates and U.S. policy related to hiring - not just to avoid lawsuits, but, more importantly, to ensure the fair treatment of candidates applying for jobs.

1.3.3.1 Legal Federal Laws Relating to Teacher Selection

The Civil Rights Act of 1964 is the most prominent law relating to employment practices. It prohibits discrimination in regards to employment practices based on race, color, sex, religion or national origin, both prior employment (during the selection process) and after the hire. Title VI of the statute prohibits discrimination by any program receiving federal funding. Further, Title VII prohibits discrimination in public sector employment. Public schools obviously fall under both of these categories. In 1991, the Civil Rights Act was amended to provide rights to those who feel they have been discriminated against in employment practices. This act gave the offended a right to a jury trial and monetary damages if proven to be the victim of intentional discrimination.

Protection against age discrimination was first added to federal law in 1967 with the Age Discrimination in Employment Act (ADEA). This law spoke specifically to governmental units and was designed to protect individuals age 40 and up. In 1972, the ADEA legislation was extended in the Equal Employment Opportunity Act, to add educational institutions, private employers with 15 or

more employees and state and local governments. Finally, the Rehabilitation Act (1973), was the first law to prohibit discrimination based on a handicap and applied to recipients of federal financial assistance. This law required that reasonable accommodations be made in the work environment. It was amended in 1990 with the Americans with Disabilities Act (Titles I and V), which extended the initial law to include the private sector and governmental agencies regardless of their receiving federal monies.

While trying to find the most qualified teachers, school administrators must also be fair in the employment process. It is vital that school administrators are cognizant of laws and respect the fundamental principals embedded in equal employment opportunity for all candidates. The aforementioned laws must be abided by both during pre-employment situations and during employment.

1.4 WHAT DOES TEACHER RECRUITMENT AND SCREENING LOOK LIKE?

The first step to ensuring a high quality teacher in every classroom is recruitment (Dozier & Bertotti, 2000). In a large scale research study across the state of Pennsylvania, the researchers found that recruiting and advertising was very limited. Out of 501 school districts surveyed, only 25% of the districts advertised for vacancies outside of the state. A further analysis indicated that Pennsylvania school districts often hired alumnae, applicants from their substitute list or local residents in the district (Strauss, 1998).

Earlier research on this topic suggests that historically very little money has been allocated for the recruitment of teachers, “Experts on personnel management estimate that school districts spend eight percent of what business and industry invest in employee recruitment.” (Bolton, 1973).

Currently, most school districts do not utilize recruiting firms as business and industry do. This decision is likely due to high placement costs and the fact that some states have an overabundance of applicants from which to choose (as discussed in 1.3.2).

The purpose of recruitment is to build the largest and strongest pool possible from which administrators can begin to screen. The process of screening the initial pool is to narrow the pool to a more manageable number to begin the interview process. Some districts paper screen against a set of local criteria (e.g., certification, grade point average, and teaching experience) With new employment technologies, many school districts have turned to Electronic Warehousing Systems for both application/paper credential storage and recruitment (as will be discussed later in 1.6). Regardless, of how districts screen, the main intent should be to find the most effective and highly qualified professionals in the applicant pool to move to the next stage and eventually lead to a strong hire.

1.5 HOW ARE TEACHERS HIRED?

There is very little research on teaching hiring and even less on the “prevalence of different hiring practices” (Liu and Moore Johnson, 2003, p.7). There are a few case studies on teacher hiring, but they are either dated (David, 1988; Shivers, 1989; Wise, Darling-Hammond & Berry, 1987) or limited to a specific geographical area (state) (Rutledge et al., 2007; Kersten, 2008). A broader and more current case study by Liu and Moore Johnson (2003), included 486 first and second-year teachers across four states (California, Florida, Massachusetts, and Michigan). This research indicated that a vast majority of teachers are recruited, interviewed and hired at the building level by the principal. In addition, the researchers found that the hiring process in this sample was “information-poor” (p.2) (providing little insight to the candidate about how well they might “fit” (p.4) into the position and

building. Moreover, a staggering number of teachers reported being hired late. In California and Florida, “approximately one in three hires [are] hired after the start of the school year” (p. 2).

Some school districts use a centralized hiring process with the central office administrators controlling the process, hiring and placing teachers in specific buildings in the district (Shivers, 1989). Other districts use a decentralized process with the building level principal controlling the hiring process from screening to hiring. Most school districts use a combination of the two formats - with the central office controlling some of the early piece of teacher selection – recruitment, credential screening and the building level administrator interviewing and making the final hiring decision (Wise et al., 1987). Regardless of the format, most school districts proceed through some, if not all, of the following steps when hiring a teacher:

- Identify an opening/vacancy.
- Position posted internally (school districts with union may have collective bargaining agreement language that they must honor; if this is the case, district may have other process requirements to follow and may transfer an employee).
- If position is not filled internally, the position is then posted externally (e.g., local newspapers, district website, college career centers, job fairs, university placement center, other websites etc.). In Kersten’s (2008) research, Illinois principals reported that the school district website and job fairs were the most frequently used recruiting methods. Very few school districts in Kersten’s study (.08%) reported using recruiting firms.
- Applicant applies for the position by completing an application (either paper or electronic). Kersten’s study (2008), reports that 55.7% of applicants submitted an on-line application.

- Applicant submits application with additional screening requirements of the district (e.g., letter of interest/cover letter, resume, letters of recommendation, standardized test scores, teaching certificate, clearances/criminal background check, undergraduate transcript, graduate transcript, portfolio, writing sample or essay, lesson plan, videotape of sample lesson, etc.) (Liu & Johnson, 2003, p. 20). In Kersten's study (2008), 82% of school districts required a resume and 77% required a transcript. Very few districts required any type of portfolio (3.3% required a paper portfolio and 0.8% required an electronic portfolio).
- Candidate's credentials are screened/reviewed against the position criteria by School Official (e.g., Superintendent, Principal and/or Human Resources Director).
- Pool of candidates narrowed based on position criteria. Strauss (1998) found that the most influential factors used to narrow the pool of applicants was: major in area of teaching, overall grade point average and grade point average in major, past performance in teaching, and reference or recommendations. Other items sought, but not considered as important by screeners, were: content knowledge, quality of certification institution, community involvement, willingness to assist in extracurricular activities and non-teaching work experience.
- Pool of candidates narrowed based on other requirements of district (e.g., minimum grade point average, residency requirements, etc.) (Strong & Hindman, 2006).
- Interviews conducted with either all candidates, or only a select number of candidates based on prior screening (Liu & Johnson, 2003, p.16). Kersten's (2008) research indicates that most candidates are interviewed by the building level administrator (82%). Kersten indicates that a surprising number of districts included teachers in the

interviews (79.5%). He goes on to say that “their inclusion may reflect the growing prevalence of decentralization and collaborative leadership” (p. 5).

- Finalist(s) chosen. Kersten’s study shows that the building principal is the primary decision maker when it comes to making the final decision (2008).
- School officer in charge of hiring makes a recommendation to the School Board to hire.
- School Board appoints a candidate to the position (Public School Code, 1949).

The teacher hiring process varies across school districts. However, Figure 1.1 illustrates the basic process.

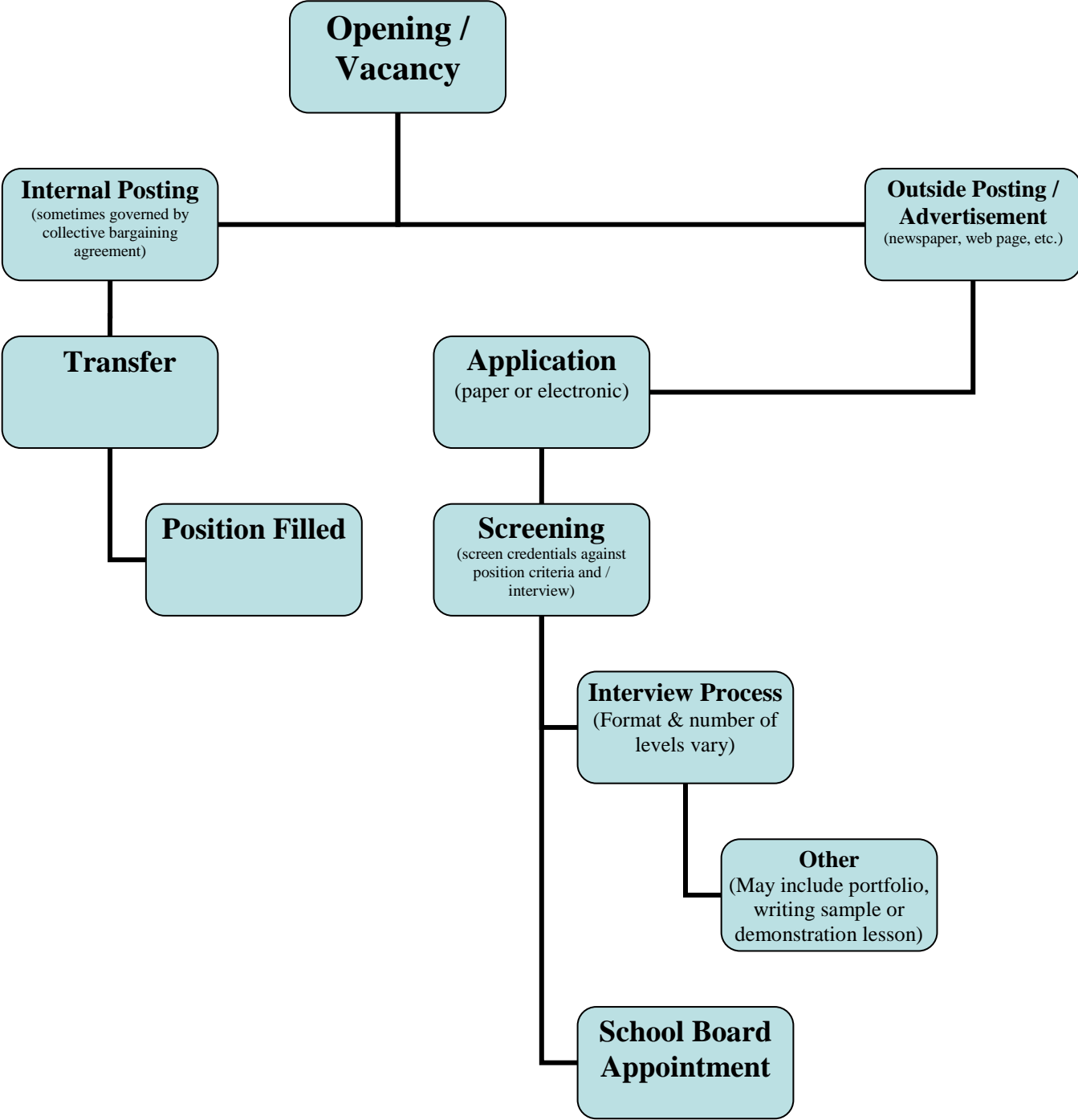


Figure 1.1 Teacher Selection Process

1.5.1 Hiring Procedures in Pennsylvania

According to a large scale research study, (Strauss, 1998), of all 501 school districts across Pennsylvania, only 49% of districts in Pennsylvania had written hiring policies. Without these written hiring policies in place, Strauss found extreme variances in process and procedures.

As mentioned earlier in section 1.4, only a quarter of the school districts in Pennsylvania advertised outside of the state. On the other hand, about 83% advertised outside of their district through one of the following major ways: *Pennsylvania School Boards Association Bulletin*, word of mouth, education schools' placement offices and the local newspaper. In 85% of the districts surveyed, collective bargaining agreements dictated that positions be advertised within the district first. While in 86% of the districts, participants indicated that the union did not play a formal role in the interviewing process, while 65% indicated that the union did play an informal role. There also seemed to be a pattern occurring in late hires: 1/3 of late hires were for full time, contracted positions and 28% of the time offered to a substitute teacher first.

“Independent evidence on content knowledge and caliber of certificating institution was about as important as indications of community involvement, willingness to assist in extracurricular activities, and non-teaching work experience.” (Strauss, 1998, p. 170).

Although Strauss' study did not look at direct correlations between the board of school directors and hiring, he did point out the power they have in hiring decisions. The board of school directors has the authority and duty to hire teachers. Per the School Code of 1949, Section 11-1106, “the board of school directors in every school district shall employ the necessary qualified professional employees, substitutes and temporary professional employees to keep the public schools open in their respective districts...” (p. 353). Strauss et al., (2000) says that, “Relatively little emphasis has been placed by educational researchers on the role of the local employment decision and role of elected,

volunteer school boards in responding to public demands for better student performance . . .” (p. 389). Strauss et al., (2000) goes on to point out that much school board director nepotism exists in many Pennsylvania public schools, and until school directors are held accountable for student achievement and stipends are considered for the serving on the local board, these local practices will continue to exist. According to Strauss, there are 4,500 school directors in the state of Pennsylvania. They serve voluntarily and this is common practice across the United States (Strauss, 1998).

A group of personnel directors told Strauss that the “intensity of pressure that they face to hire relatives of residents seems to grow with the economic adversity the area is facing.” (Strauss, 1998, p. 180).

1.5.2 Selectivity of Local Teacher Hires

“It appears, based on a 1993 analysis . . . most districts [in Pennsylvania] hire from local institutions. An exhaustive analysis indicates that 60% of newly hired teachers come from institutions no more than 70 miles away from the hiring school district. For Allentown, Erie, Lancaster, Pittsburgh, and Sharon metropolitan school districts, 90% of the teachers come from 70 miles or less, while districts in the Philadelphia, Johnstown, Reading and Williamsport... hired 80% of their teachers from within 70 miles” (Strauss, 1993, pp. 44-46).

In 1998, Strauss, analyzed longitudinal teacher quality and hiring data for the Pennsylvania State Board of Education. In his final report to the State Board he discussed: teacher supply and demand, teacher training, teacher quality and teacher hiring. Among his many findings, the data from Pennsylvania indicated that 40% of the teachers in Pennsylvania had also received a high school diploma from the school in which they were now teaching. Strauss found a very high correlation coefficient range between graduates now teaching for the district from which they had graduated and

student achievement test data. “The higher the fraction of a district’s teachers that went to its own high school, then the lower all of its [students’] test scores...and the lower is the fraction of high school seniors with post-secondary education plans.” (p. 172). Strauss indicated that in districts where a high percentage of its teachers were alumnae, student achievement data was lower across all grades.

Although Strauss’ research is somewhat dated and can not be generalized across the United States, it does show a direct relationship between hiring practices and student achievement across one state. In Strauss’ executive summary, he pointedly summed up this relationship by stating, “Where districts utilize more professional personnel procedures in their recruitment of teachers, student achievement is generally higher. Where more emphasis is given to matters of residency and non-academic matters, student achievement is lower” (p. 3).

1.6 HOW HAS THE UTILIZATION OF ELECTRONIC EMPLOYMENT PROCESSING TECHNOLOGIES AFFECTED TEACHER SELECTION?

If teacher quality is the single most important factor in student achievement, one would begin to ask, “How are school districts searching for and recruiting quality teachers? Is the traditional method of paper screening and formal interviews effective at finding quality candidates?” Furthermore, “Can current employment technologies be used to facilitate and expedite this overwhelming task of finding quality teachers?”

1.6.1 On-line Warehousing Databases

The introduction of the computer into homes, business and schools has impacted and changed the way people live their lives. The introduction of the Internet changed the world. The introduction of the World Wide Web changed the way the world does business (Friedman, 2006). Many school districts no longer accept paper applications and instead require candidates to submit their credentials to on-line warehousing databases.

1.6.1.1 PA-Educator.net

One such electronic database in Pennsylvania is called “PA-Educator.net.” This electronic clearinghouse was developed in 1998 by the Allegheny Intermediate Unit 3 as a result of the recommendations of the Working Together Consortium report entitled “A New Generation of Teachers – Connecting Workers and Students with Jobs of the Future” (1997). The Working Together Consortium was comprised of a group of civic leaders from Southwestern Pennsylvania who worked to develop strategies to improve the economic and social vitality of the area.

PA-Educator.net may be accessed via the web by school districts and prospective teachers. Participating school districts can electronically post jobs, conduct teacher vacancy searches and review prospective employee credentials (e.g. Pennsylvania standard application, Pennsylvania Teacher Certificate, cover letter, resume, transcripts, letters of recommendation, and Criminal and Child Abuse Clearances). This tool allows districts to view large pools of candidates from wider regions. Once the school district chooses the certification area from a long list, then it may begin narrowing the search by using the systems screening templates. Districts may also customize the templates to suit their specific needs and priorities. With no cost to participating districts, PA-Educator.net can help school districts reduce costly advertising expenses and reallocate resources in their human resource departments.

PA-Educator.net is a resource to potential candidates in that they can view current job postings, deadlines and job descriptions in numerous school districts across the state. They may apply for jobs on-line by completing a Pennsylvania standard teaching application and submitting one copy of their credentials for all districts to view. They may store their credentials and continue to update the files for an unlimited amount of time. This tool saves candidates time and money in the application process in that they do not have to submit a hard copy of all of their credentials to every district within which they are interested in applying (www.PA-Educator.net.net, 2007).

Currently, over 190 school districts and Intermediate Units are using PA-Educator.net. As of November 1, 2008, 25,836 candidates were in the database. This electronic database has enabled schools to conduct massive searches across the state. However, it remains very limited as a screening tool. For instance, on November 1, 2008 a search was conducted for a physics teacher. Out of 25,836 candidates in the database, 170 candidates had this certification across the state. When a geographical area was entered, (e.g., Butler County), the number went down to 77. When a “Grade point average greater than or equal to 3.0” was added as a qualifier, the number of total candidates decreased to 71. When teaching experience was added to the criteria (greater than or equal to one year) the total number of applicants fell to 49. When an advanced degree (e.g., Masters Degree) was added as an additional piece of criteria, the number of total candidates dropped to 26. Yet, most interview teams do not have the time to formally interview 26 candidates. One could add criteria to reduce the total number to a manageable interview number. However, one then runs the risk of missing good, qualified candidates.

The first physics teacher example, reflects an area of great need across the nation. Results from Elementary (K-6) searches are quite different in comparison due to the great abundance of certified elementary teachers. On November 1, 2008, a search from the same number (N=25,836) and pool of people yielded the following:

- Elementary (K-6) = 10,311
- Elementary (K-6) + Butler County = 3,391
- Elementary (K-6) + Butler County + Minimum 3.0 GPA = 3,238
- Elementary (K-6), + Butler County + Minimum 3.0 GPA + Minimum 1 yr. Experience = 2,143
- Elementary (K-6), + Butler County + Minimum 3.0 GPA + Minimum 1 yr. Experience + Advanced Degree (Master's) = 808

Even after five screening criteria, the interview team is left with a decision to make about which of the 808 remaining candidates will be interviewed. This is an unmanageable number of candidates to screen, or interview, for any school district.

PA-Educator.net's project director confirmed that even with the number of sort options available on the system, narrowing the pool of candidates to a manageable interview number is a problem (R. Pitcock, personal communication, May 15, 2009). He believes that the large pool of candidates is a direct result of the large number of individuals certified in Pennsylvania and the large number of schools of education in the state.

1.6.1.2 PAREAP.net

A similar electronic employment technology used nationwide for teacher credential storage and sorting is REAP.net, an affiliate of the National School Applications Network. The Pennsylvania division is PAREAP. PAREAP serves as a national on-line application management service system for both applicants and school districts. School districts can post job openings, search applications, view credentials and customize local criteria to conduct searches. PAREAP's database can be searched through multiple parameters: state, position preferred, teaching certificate, years experience, grade

point average, student teaching grade, and activities willing to sponsor. The electronic sorting allows employers to find applicants who are willing to teach full time or substitute teach by searching professional educational certificate and/or zip code. The applicant's full application can be printed in a matter of minutes. PAREAP also has a tracking system that provides for multiple ratings and comments on applicants that school districts are considering. This on-line warehousing system allows school districts from all over the nation to search, find, and manage applicant credentials (www.pareap.net, 2008). Currently, 127 school districts in Pennsylvania participate (www.pareap.net, 2009). PAREAP is a free service for applicants but not for school districts. PA REAP costs districts with a student enrollment over 1000 students \$990 per year. In the first year of the membership there is an additional charge of \$650 for setup. For districts under 1000 students, the annual cost is \$740 with a one time setup fee of \$1 per student in year one of the membership. For districts over 10,000 students the one time first year set up fee is \$1650.

In a (May 15, 2009) phone interview with Mr. John Fraser, one of the three directors of PAREAP, he said that participating school districts use the warehousing system in varying degrees. The primary reason he and his colleagues formed a corporation, (Cooperating School Districts), and brought REAP to Pennsylvania was that he saw a need (as a human resources director) to get out of the paper and pencil way of doing things. His experience has indicated that a district will use the system to the extent that administrators in the district are comfortable with technology. "Some [participating] districts still require candidates to submit a paper application, which defeats the purpose of the tool."

1.6.2 Electronic Screening Tools and Alternative Interview Formats

With electronic clearinghouses making a larger pool of applicants more accessible to districts, districts are searching for more effective means of screening applicants. Although teacher screening tests similar to psychometric testing have been used somewhat limitedly in schools, some school districts have used them as a tool to screen potential teacher candidates. Subsequently, the employment interview is still the most frequently used and preferred format for teacher selection. Within the last decade, a few researchers have begun to experiment with alternative interview formats for increased validity and reliability.

1.6.2.1 Gallup's Teacher Perceiver Interview (TPI)

The Teacher Perceiver Interview (TPI) was first developed by Selection Research Incorporated (SRI) in the early 1970s. In 1988, SRI acquired the Gallup Organization and took its corporate name. The TPI is a face-to-face interview in which a trained administrator asks the interviewee to respond to 60 open-ended questions linked to one or more of Gallup's pre-identified twelve themes (see Table 1.1). Gallup claims that these themes are linked to research identifying the most salient characteristics of effective teachers.

School administrators must be trained by Gallup during a four day training session at a cost to their school district of \$1950 per trainee. School administrators must demonstrate a least 85% inter-rater reliability on each item to become certified to administer the TPI. Interviewees are trained to listen to interviewee responses based on specific phrases or concepts that reflect the 12 pre-identified themes. Gallup refers to these as "listen-fors". Because the TPE is a very structured interview, (Emley & Ebmeier, 1997), it can take up to two hours to administer (Gallup, n.d.). The structured interview is defined as a "process where all interviewees are asked to respond to the same questions in the same

sequence and under the same conditions” (Emley & Ebmeier, 1997, p. 45). Gallup recommends recertification every 18 months to assure accuracy in coding (Gallup, n.d.).

Table 1.2 Gallup's 12 Themes as Derived from Teacher Perceiver

Theme	Definition
Mission	Mission is what takes some individuals and groups out of society's mainstream to ensure the quality and purposiveness of that mainstream. Mission is a deep underlying belief that students can grow and attain self-actualization. A teacher with mission has a goal to make a significant contribution to other people.
Empathy	Empathy is the apprehension and acceptance of the state of mind of another person. Practically, we say we put ourselves into the other person's place. Empathy is the phenomenon that provides the teacher feedback about the individual student's feelings and thoughts.
Rapport Drive	The rapport drive is evidenced by the teacher's ability to have an approving and mutually favorable relationship with each student. The teacher likes students and expects them to reciprocate. Rapport is seen by the teacher as a favorable and necessary condition of learning.
Individualized Perception	Individualized perception means that the teacher spontaneously thinks about the interests and needs of each student and makes every effort to personalize each student's program.
Listening	The listening themes is evident when a person spontaneously listens to others with responsiveness and acceptance. Listening is viewed as beneficial to the speaker.
Investment	The investment theme is indicated by the teacher's capacity to receive satisfaction from the growth of students. This is in contrast to the person who must personally perform to achieve satisfaction.
Input Drive	Input drive is evidenced by the teacher who is continuously searching for ideas, materials, and experiences to use in helping other people, especially students.
Activation	Activation indicates that the teacher is capable of stimulating students to think, to respond, to feel, and to learn.
Innovation	The innovation theme is indicated when a teacher tries new ideas and techniques. A certain amount of determination is observed in this theme because the idea has to be implemented. At a higher level of innovation and experience together into new configurations.
Gestalt	The Gestalt theme indicates the teacher has a drive toward completeness. The teacher sees in patterns and is uneasy until work is finished. When Gestalt is high, the teacher tends towards perfectionism. Even though form and structure are important, the individual student is considered first. The teacher works from individual structure.
Objectivity	Objectivity is indicated when a teacher responds to the total situation. This teacher gets facts and understands first as compared to making an impulsive reaction.
Focus	Focus is indicated when a person has models and goals. The person's life is moving in a planned direction. The teacher knows what the goals are and selects activities in terms of these goals.

(Young & Delli, 2002, p. 601) NOTE: Themes in bold type are contained only in the abbreviated version of the Teacher Perceiver Instrument.

In the late 1990s, Gallup began marketing an Urban Teacher Perceiver Interview. This protocol is very similar to the TPI; however, it has eleven themes instead of twelve. It was apparent that three major themes in the TPI were carried over into the Urban TPI (Empathy, Individualized Perception and Input Drive). Two themes were new – Involvement and Positivity. The other six themes are similar to ones in the original TPI. In this specific screening interview protocol, Gallup claims to identify the best urban teachers through a series of questions that get at consistently recurring patterns of thought, feeling, and behavior common for the most talented and effective urban teachers (Gordon, 1999).

1.6.2.2 Gallup's TeacherInsight Interview

Most recently, the TPI has evolved into an on-line internet version that the Gallup Organization calls the TeacherInsight Interview. School districts choosing to use Gallup's teacher screening interview give potential candidates a personal ID; the candidate then logs on to Gallup's secure sight and answers questions related to innate teacher talent. Questions are in the form of multiple choice, Likert, yes/no and paired-comparison. Gallup then gives the school district a composite score related to the predictability of this candidate's quality of teaching and likelihood of success in the classroom. School districts in turn use this as another piece of data in the hiring process. This on-line assessment takes an average of 30-45 minutes to complete; whereas the old paper pencil version, the Teacher Perceiver Interview, required that screeners attend a comprehensive training program, conduct lengthy face-to-face interviews and spend hours scoring responses (Harter, 2004).

Another new piece of technology that the Gallup organization has developed is called the Interactive Voice Response (IVR). With this screening tool, potential teacher candidates call into a toll-free number, enter their personal ID number and respond to closed-end items via the phone key

pad. This assessment mirrors the Teacher Perceiver and TeacherInsight. It takes 15-30 minutes to complete (Harter, 2004).

Although more than 1,200 school districts are using the TPI in their teacher selection process (Delli & Vera, 2003), Young and Deli (2002) warn that this instrument (or any other single instrument), should not be used solely to select teachers. Districts should conduct “on-site validity assessment linking pre-employment decisions to post-employment outcomes for teachers regardless of methods used to obtain pre-employment decisions” (p. 605).

Gallup has researched, validated and revalidated its teacher selection tools since the inception and development of their teacher selection tools. The Interview Development Study Conducted by Gallup (2004), indicates that the Teacher Insight Interview has a high reliability rating (Cronbach’s alpha = .8320). In the Spring of 2003, Gallup wanted to update their scoring algorithm, reexamine the predictive validity as judged by principal and student ratings and verify the tool’s EEOC compliance. Gallup did so by conducting a study of effective teachers as measured by principal ratings of teachers and student (4-12 grade) ratings of teachers. Then, they interviewed the teachers using the Teacher Insight Interview. The study indicated that a high correlation ($r=.86$) existed between the 2003 Teacher Insight Interview Index and the 2002 Index. Finally, the reliability of the interview based on all applicants was a .78 (Cronbach’s alpha) (Gallup, 2004). In the Summer of 2003, Gallup validated the Teacher Insight Interview between certified and non-certified teachers (Certified Cronbach Alpha = .78; Non-certified Cronbach Alpha = .76) and across multiple school systems (Gallup, 2004 , Schmidt & Rader, 1999). Specific findings indicated that:

“Teachers who scored at or above 63% on Teacher Insight were 1.6 times more likely to be rated among the top quartile of teachers (Composite 4th-12th Grade and Principal rating) than the bottom quartile of teachers in the study. Teacher who scored below 63% on the Teacher Insight were 3.4 more likely to be rated among the bottom quartile of teachers (Composite of 4th-12th Grade and Principal rating) than the top quartile of teachers in the study. Teachers who scored at or above 63% on Teacher Insight were 1.5 times more likely to be rated among the

top quartile of teachers (4th-12th Grade satisfaction ratings) than the bottom quartile of teachers. Teacher who scored below a 63% on Teacher Insight were 2.3 times more likely to be rated among the bottom quartile of teachers (4th-12th satisfaction ratings) than the top quartile of teachers.” (Gallup, 2004).

Another study in 2006 indicated that the upgrades in the 2005 Teacher Insight Interview were also highly reliable with a .80 Cronbach’s alpha (Gallup). In the Spring of 2005, a random sample of 300 second year teachers across 19 cities and regions were invited to complete Teacher Insight. One-hundred thirty-nine completed Teacher Insight. The researches then compared the teacher’s student achievement gains for the year. The analysis of data indicated that “teachers whose students had [one] grade level and higher of student achievement gains were increasingly likely to be in higher quartiles of Teacher Insight percent scores. The teacher whose students had less than one grade level of gains were increasingly likely to be in lower rather than higher Teacher Insight Percent score quartiles ($r=.33$, $p<.05$, $n=138$).” (Gallup, 2006).

1.6.2.3 Interactive Computer Interview System (ICIS)

Gallup’s TeacherInsight, although electronic, is not adaptive (meaning one question follows the next regardless of the candidate’s answer); whereas, Dr. Howard Ebmeier’s electronic interview is adaptive. Ebmeier and his research team from the University of Kansas, first developed the prototype of an adaptive computer interview instrument and called it the “Interactive Computer Interview System” (ICIS) in 2003. The ICIS was developed in conjunction with the American Association of School Personnel Administrators (AASPA). This instrument used a variable length or adaptive interview format which is very similar to computer adaptive testing. In this type of procedure, a candidate is asked questions in four major themes pre-selected by the AASPA as the most important areas with which to identify effective teachers:

- Working with Others
- Knowledge of Content
- Knowledge of Teaching
- Knowledge of Students

The candidates' answers are used to determine what the next question will be (in a branched interview format). Instead of asking a large number of questions in the same category, the interviewer only asks enough questions in the domain to establish a baseline. For instance, if the candidate's answers are consistent on four questions in a row in the same domain, the computer would not instruct the interviewer to ask another in that area. However, if the candidate's answers were inconsistent in the same area, the computer would continue to instruct the interviewer to ask questions in that same area until consistent answers were apparent. "The computer program does the question selection and reliability calculations in the background, while the interviewer asks the questions of the candidate and evaluates the quality of the responses on a three point scale" (Ebmeier & Ng, 2006, p. 6). Ebmeier and his team of researchers claims that this instrument provides for more efficiency and reliability than the standard employment interview. The average cost per district is \$1,000. There are several different formats available of the instrument, dependent on the position and context of the district:

- Interactive Computer Interview System (ICIS)
- Interactive Computer Interview System –Urban Instrument
- ICIS Interactive Computer Training System
- Employment Bias Detection System
- ICIS – School Counselor
- ICIS – Urban Teacher

- ICIS – School Psychologist
- RCS Computerized employment reference checking system CD (2004)—Ebmeier

Ebmeier field tested it in 2005 in several suburban districts (2006). The ICIS Technical Manual (2006) details the validity of the instrument through content validity, construct validity, and criterion related validity. Using a Coefficient Alpha, the internal reliability of the instrument is: .70 (short version), .80 (normal length), .90 (long version). “Reliabilities greater than 0.80 are considered acceptable for use . . . scores above 0.90 [are] considered excellent.” (Ebmeier, 2006, p.14)

In a field test of the ICIS with 50 suburban teachers of all ages there are some indications that the instrument may have an age bias (Stevenson, 2005). However, the ICIS Technical Manual (V.3.) indicates that several additional studies and the use of Pearson correlations show that “ the ICIS instrument is gender bias free and requires little training to accurately use.” (Ebmeier, 2006, p.15). Later in the manual, a regression analysis indicates that there is a very low correlation between older teachers and two of the subtests: Knowledge of Teaching and Knowledge of Students. Therefore, “some care should be given to over-reliance [of these scores] when comparing candidates of greatly differing ages (Ebmeier, 2006, p. 18).

1.6.2.4 Star Teacher Interview

Another proprietary and electronic interview format is the The Star Teacher Interview by Haberman. The Star Teacher Interview is a scenario-based interview created by Dr. Martin Haberman of the University of Wisconsin-Milwaukee. The instrument has been researched and replicated for over three decades. The marketing brochure asserts that the instrument has a 95% accuracy rate for predicting which teachers will stay and succeed and which will fail in the classroom or quit. In order for school districts to use this highly structured interviewing protocol, interviewers must be trained by trainers of the Haberman Foundation for a full day. The cost is \$1,500 per interviewer. Currently, 160 school

districts in the United States are using one or more of Haberman's interview protocols, especially in urban and poor schools (Haberman Foundation, n.d.).

A longitudinal study of the Star Teacher Interview conducted in the Buffalo Public Schools examined teacher retention data in the district from 1999-2003 and found that "...the higher the interview scores [on the Star Teacher Selection Interview] the longer a teacher was retained in the district after being hired" (Frey, 2003, Abstract, *ibid.*). Frey says that, "The 'revolving door' of teachers entering and leaving the profession has created the perception of a teacher shortage when in reality the problem is retaining teachers" (p. 52). At the same time, "Teacher attrition has been credited in part to shortsighted recruitment and selection processes" (p. 46).

The researcher was unable to obtain a technical manual to assess the psychometric properties of this instrument. After numerous requests, the following information on reliability was sent via e-mail to the researcher from the Haberman Foundation (March 10, 2008):

- In terms of content validity, identifying factors, which discriminate between quitters/failures and "stars", entail the developed the instrument. "Quitters/failures" are those who have left urban teaching with unsatisfactory ratings from supervisors or who describe themselves as unable to continue teaching. "Stars" are urban teachers identified as such by principals, other teachers, students and themselves...Since 1962, groups of stars and quitters/failures have been periodically tested to validate this level of discrimination. No changes have been made in the seven factors.
- In terms of criterion related validity, ...when trained interviewers correctly administer the instrument, there is a 5% or 1 in 20 chance of hiring a quitter or failure.
- In terms of the reliability of the instrument, using the criterion, there is a predictive reliability for all those who are re-interviewed of $r = +.93$. Applicants interviewed a second time (or more

frequently) will pass or fail the interview; again, there are no differences in the reliability of those re-interviewed based on sex, age or ethnicity.

- Twelve dissertations have been written on Haberman's teacher selection tools; all support the research and instruments.

1.6.2.5 The Urban Teacher Selection Interview

Haberman customized the Star Teacher Interview for large urban school districts with high attrition rates (Haberman 1993; 1995; 1996), in the Urban Teacher Selection Interview (UTSI). This interview is also a scenario-based interview, like the Star Teacher, with the interviewers asking the interviewee realistic situations: "What would you do if one of your students is not doing his homework?" If the interviewee suggests talking to the student, the interviewer says, "And what if that did not work?" The interviewer keeps asking questions, forcing the interviewee to keep coming up with alternative solutions. In this scenario, the interviewer is testing not only the candidate's knowledge of best practice but also the person's persistence in handling a tough problem (Haberman, n.d.).

A study conducted in an alternative, multi-cultural teacher certification program revealed that the UTSI could predict the success of future urban teachers (Haberman, 1993). An extension of this study was conducted in 2003 in the rural, persistent poverty school setting. However, this research concluded that the UTSI was not valid for rural teachers (Pillow-Price, 2003).

1.6.2.6 STAR Teacher On-Line Pre-Screener

Although the last two tools discussed were full blown interview formats, Haberman (1993) has also developed an on-line pre-screening tool used by school districts to determine if a candidate should be

invited to a more formal interview. The candidate taking the test is rated on Haberman's ten dimensions of teaching:

1. **Persistence** predicts the propensity to work with children who present learning and behavioral problems on a daily basis without giving up on them for the full 180 day work year.
2. **Organization and Planning** refers to how and why star teachers plan as well as their ability to manage complex classroom organizations.
3. **Values student learning** predicts the degree to which the responses reflect a willingness to make student learning the teacher's highest priority.
4. **Theory to Practice** predicts the respondent's ability to see the practical implications of generalizations as well as the concepts reflected by specific practices.
5. **At-Risk Students** predicts the likelihood that the respondent will be able to connect with and teach students of all backgrounds and levels.
6. **Approach to Students** predicts the way the respondent will attempt to relate to students and the likelihood this approach will be effective.
7. **Survive in Bureaucracy** predicts the likelihood that the respondent will be able to function as a teacher in large, depersonalized organization.
8. **Explains Teacher Success** deals with the criteria the respondent uses to determine teaching success and whether these are relevant to teachers in poverty schools.
9. **Explains Student Success** deals with the criteria the respondent uses to determine students' success and whether these are relevant to students in poverty schools.
10. **Fallibility** refers to how the teacher plans to deal with mistakes in the classroom.

Candidates may take the test on their own or school districts may require it as a prerequisite to an interview. The candidate's answers are compared to the answers of successful teachers who are effective at teaching diverse children in poverty schools (Haberman Foundation, n.d.). The cost of the test is \$20.00 and takes about 30 minutes to complete. The test boasts a 97% accuracy rate for predicting which teachers "will succeed in increasing student achievement, who will stay longer and who will do a better job." (Haberman Foundation Flyer, retrieved on-line 2/28/07).

Haberman's most recent development in assessment tools is called "The Start Classroom Management Protocol". This tool seeks to determine the candidate's ability to manage a classroom. This assessment is in the form of an interactive computer game.

The teacher is presented with a screen depicting 24 students who must be kept on task. Using a random, timed sequence students begin to move off-task. If the teacher does not intervene in a manner appropriate to the particular student behavior, they begin to disrupt their neighbors. The teacher's responses are times as well as assessed for their appropriateness to the particular students' needs. The score for each episode reflects the total number of seconds the teacher is able to keep the students on-task. The game is based on Rudolph Dreikur's theory of logical consequences. The students in the computer classroom misbehave because of their particular need for attention, power, revenge, or avoidance of failure.

School districts may use this tool as another pre-hire piece of information or for in-service training for existing staff (Haberman Foundation, 2008).

1.6.2.7 Teacher Quality Index

Many of the aforementioned selection tools focus on the personality or disposition of a candidate. *The Teacher Quality Index* by Dr. James Stronge and Dr. Jennifer Hindman also asks interview questions in these areas, but in addition, focuses a majority of interview questions on the skills of teaching (classroom management, instructional planning, delivery and monitoring of student progress / assessment.) Using Dr. Stronge's seven Qualities of Effective Teachers (2002), Strong and Hindman

constructed a researched-based interview protocol that may be utilized by any district that purchases their book (2006). The structured protocol includes interview questions and detailed rubrics for both screening and building level interviews. However, their protocol also provides the interviewer with some flexibility. The book comes with a CD-ROM where school administrators charged with hiring can choose between questions within the pre-established categories or qualities of effective teachers and varying leveled questions for novice teachers as well as experienced ones.

The rating scale used in the Teacher Quality Index was validated through a national survey. The population was representative with a random sample of 300 U.S. public school principals. The survey collected information on interviewing practices and principal perceptions of teacher effectiveness. Pearson correlations and chi-square tests found no variation between principal demographics and how they rated statements relating to teacher responses to interview questions (Stronge & Hindman, 2006, p. 96-100).

Additionally, the protocol was validated in two pilot studies for reliability: the first “established content validity between the proposed interview questions and the intended associated qualities of effective teachers. The second study collected feedback from practicing administrators on their perceptions of the intended rating of the level of teachers (e.g., unsatisfactory, developing, proficient, or exemplary) who would give the sample response to the question.” (Stronge & Hindman, 2006, p. 99). The psychometric properties of this tool make it much more defensible in an equal opportunity challenge.

Whether a school district chooses to use a locally created interview protocol or to purchase a proprietary selection tool often depends on many factors which include, but are not limited to: personal beliefs and hiring knowledge of administrators charged with such decisions, time, resources and money. The onset of electronic employment technologies in the last decade has added a new

dimension to the research and logistics of hiring teachers. Therefore, administrators should research protocols thoroughly and never use one tool to make a decision of such great magnitude.

Table 1.3 provides an overview of teacher selection protocols revealed by the literature review.

Table 1.3 Commercial Selection Tools

	<i>Administration Mode</i>			
<i>Commercial/Structured Interview Assessments Proprietary Owner</i>	<i>Face-to Face</i>	<i>Telephone</i>	<i>On-line</i>	<i>Electronic</i>
Interactive Voice Response Gallup Organization		•		
Interactive Computer Interview System (ICIS) Ebermeier	•			•
Star Teacher Interview Urban Teacher Selection (Star Teacher) Interview Haberman	•			
Star Teacher on-Line Pre-Screener Haberman			•	•
TeacherInsight Interview Gallup Organization			•	•
Teacher Perceiver Interview (TPI) Urban Teacher Perceiver Interview Gallup Organization	•		•	•
Teacher Quality Index Stronge & Hindman	•	•		•

1.7 SUMMARY AND CONCLUSIONS

1.7.1 Teacher Quality

For decades, researchers have studied factors related to student achievement (e.g. curriculum, student background, the achievement gap, socio-economic status and assessment). The conclusions resonate

with the finding that the teacher has the greatest impact on student achievement. Recent federal legislation supports this research in mandating a highly qualified teacher in every classroom (NCLB). Organizations like the National Research Council have used 25 years of effective teacher research to develop standards for the National Teacher Certification Program.

If teacher quality is the variable by which research proves that student achievement is most dramatically affected, then one must consider what research states about the qualities of effective teachers. Studies continually have pointed to specific qualities or characteristics effective teachers possess; therefore, the question arises: “What are school districts doing to seek these qualities in applicants in their hiring process?” Although, no comprehensive, definitive list of such qualities has been unanimously agreed upon by researchers, school districts can realign their hiring processes and interviewing protocols based on what research has proven. A review of the literature indicates that the following are directly linked to higher quality teachers with students achieving at a higher level year after year: teacher certification, content knowledge, verbal ability, knowledge of teaching and learning, quality of teacher preparation program, knowledge and demonstrated success about student achievement and growth, strong classroom management skills, classroom pedagogy and prior teaching experience.

1.7.2 Teacher Screening

With a proven correlation between teacher quality and student achievement, teacher screening is increasingly becoming more important. In addition, with so many school districts in the nation experiencing teacher shortages and other states having an oversupply in the market, teacher screening is vital to making the next step in the hiring process – the interview – fair, productive and time efficient. With so many school districts, like Pennsylvania, utilizing on-line electronic

databases/warehouses for the storage of teacher credentials, the pool of applicants has clearly widened for school districts. The transition from paper to electronic storage has been a very helpful tool for human resource and personnel departments, but has clearly made the narrowing of that pool more convoluted. In addition, any time the pool of candidates is widened, there is a better opportunity for more qualified candidates. However, it has become a burden to the school administrator charged with screening decisions. Even with a list of pre-established criteria, building level administrators may have difficulty narrowing such large pools of applicants in a fair and systematic fashion in order to determine the most qualified and worthy of an on-site interview. The question now becomes, “Are the on-line teacher screening tools discussed previously helping to narrow this search more efficiently?” Equally important, “Are the intellectual frameworks of the electronic screening devices aligned with the research of qualities of effective teachers?”

1.7.3 Teacher Selection

With a wider pool of candidates, school administrators charged with hiring teachers need to ensure that a fair and equitable selection system is in place; not only because it is mandated by federal law but because fairness and equity should be valued in school systems. The responsibility of administrators to find quality teachers to staff the nation’s classrooms can be daunting but is necessary for obvious reasons. In doing so, administrators should be cognizant of the qualities of effective teachers and ensure that they are sought after in the teacher selection process: “By looking for research-based qualities of effective teachers during the selection process, we increase the likelihood of selecting the best teacher applicants” (Stronge & Hindman, 2006; p. 19).

The national research of Stronge (2002, 2007) and Stronge and Hindman (2006) indicate that there are specific qualities of effective teachers that should be sought in the teacher selection process.

The Pennsylvania research of Strauss (1998) and Strauss et al. (2000) investigates hiring practices and procedures as related to teacher quality. However, currently, no research exists on whether or not the utilized teacher selection tools in Pennsylvania public schools are linked to the research on qualities of effective teachers. The next section outlines a proposed study to analyze teacher selection tools across the state of Pennsylvania. Further, to investigate whether the utilized tools are aligned to the qualities of effective teachers.

2.0 METHODOLOGY

2.1 BACKGROUND OF THE PROBLEM

During the last decade, much has been written about teacher quality. However, very little has been written about connecting teacher quality to the teacher selection process. Research supports a thorough understanding of what constitutes a quality teacher. Research also supports that teachers have a dramatic impact on student learning and achievement. If a school district's goal is to increase student achievement, then why would it not start by ensuring that the best teachers are hired to staff the nation's classrooms? Staffing the nation's classrooms with qualified teachers is a very complex process. Policy makers must first understand this process before implementing policies and laws that schools can not meet.

The review of literature indicates that some parts of the country have an overabundance of teachers, while other parts of the country open their doors to students each year without enough qualified teachers. The clear need to staff our schools with over two million teachers in the next several years makes it critical for school districts to have fair, equitable and efficient ways of choosing the best teachers.

The infusion of electronic employment tools (for those districts that can afford to purchase or subscribe to such services) have aided districts in going paperless in the searching process and has

widened the pool of candidates. However, with a wider pool of candidates, the screening process has become more convoluted.

2.2 PRIOR FINDINGS THAT SERVE THE BASIS FOR THIS STUDY

Research has shown that teacher quality can be defined and sought in the teacher selection process (Stronge, 2002; Stronge & Hindman, 2006). However, very few studies have focused on what schools are doing to seek out the best teachers in the teacher selection process. Even fewer studies have focused on using teacher quality research in the screening process to develop protocols. Drawing from studies on teacher quality and teacher selection, this study used an on-line questionnaire to discern what tools or processes school administrators in Pennsylvania are utilizing in the hiring process.

Table 2.1 Overview of Teacher Quality and Teacher Selection as Reflected by the Survey

Instrument

Research	Teacher Quality	Teacher Selection	Survey Item
Kersten (2008), Liu & Moore Johnson (2003), Shivers (1989), Wise et al., (1987)		<ul style="list-style-type: none"> • Centralized vs. decentralized process • Decision makers 	11, 12
Kersten (2008), PA-Educator.net (1997), PAREAP (2009)		<ul style="list-style-type: none"> • Paper vs. electronic/on-line applications 	13
Delli & Vera (2003), Emley & Ebmeier (1997) (2003), Gallup (2004, 2006), Gordon (1999), Haberman (1993, 1995, 1996), Harter (2004), Stronge & Hindman (2006), Young & Delli (2002)	<ul style="list-style-type: none"> • Qualities of effective teachers 	<ul style="list-style-type: none"> • Selection tools linked to qualities of effective teachers 	14 - 41
Strauss (1998), Strauss et al. (2000)	<ul style="list-style-type: none"> • Advanced degree • Teacher prep. program 	<ul style="list-style-type: none"> • 40% of teachers are alumnae of district • Resident of the district • Applicant knows a school board member 	42, 43, 70 44, 45, 70 48, 49, 70 54, 55, 70 58, 59, 70
Strauss (1998), Strauss et al. (2000) Stronge & Hindman (2006)	<ul style="list-style-type: none"> • Strong verbal ability 	<ul style="list-style-type: none"> • Strong verbal ability 	46, 47, 70
Stronge & Hindman (2006)	<ul style="list-style-type: none"> • Knowledge of teaching & learning 	<ul style="list-style-type: none"> • Knowledge of teaching and learning 	50, 51, 70
Darling, Hammond (2005), Laczko-Kerr & Berliner (2002), NBPTS (2008), NCLB (2002), Strauss (1998, 1999), Stronge 2002, 2007)	<ul style="list-style-type: none"> • Certification 	<ul style="list-style-type: none"> • Certification 	52, 53, 70

Ballou & Podursky (1997), NBPTS (2008), NCLB (2002), Strauss (1998, 1999), Stronge (2002, 2007), Weglinsky (2002)	<ul style="list-style-type: none"> • Content Knowledge 	<ul style="list-style-type: none"> • Content Knowledge 	56, 57, 70
Gordon (1999), Stronge (2002, 2007), Stronge & Hindman (2006)	<ul style="list-style-type: none"> • Knowledge about student achievement & growth 	<ul style="list-style-type: none"> • Knowledge about student achievement & growth 	60, 61, 70
Stronge (2002, 2007), Stronge & Hindman (2006)	<ul style="list-style-type: none"> • Demonstrated success in student achievement & growth 	<ul style="list-style-type: none"> • Demonstrated success in student achievement & growth 	62, 63, 70
Stronge (2002, 2007), Stronge & Hindman (2006)	<ul style="list-style-type: none"> • Knowledge of effective classroom practices 	<ul style="list-style-type: none"> • Knowledge of effective classroom practices 	64, 65, 70
Stronge (2002, 2007), Stronge & Hindman (2006)	<ul style="list-style-type: none"> • Knowledge with classroom pedagogy 	<ul style="list-style-type: none"> • Knowledge with classroom pedagogy 	66, 67, 70
Ferguson (1991), NBPTS (2008), Strauss (1998) & Strauss (2000), Stronge (2002, 2007)	<ul style="list-style-type: none"> • Past performance in teaching 	<ul style="list-style-type: none"> • Past performance in teaching 	68, 69, 70

2.3 THE IMPORTANCE OF THIS STUDY

The findings of this study have implications for practitioners in the field responsible for hiring millions of teachers each year. If the last twenty-five years of research have more clearly defined quality teaching, then school administrators, responsible for hiring, need to be seeking these qualities in the teacher selection process. In the words of James Stronge, “if you get the first assessment right, everything else is down hill...” (personal communication May 12, 2008). Drawing from research on the qualities of effective teachers and teacher selection tools, this study used a survey to identify (a)

teacher selection tools utilized by school districts in Pennsylvania and (b) whether administrators were seeking qualities of effective teachers in potential candidates. Table 2.2 provides an overview of survey questions reflecting research questions.

2.4 STATEMENT OF THE PROBLEM

There is much research to support the notion that teacher quality is the single most important factor in student achievement. With this research in mind, what are school districts doing to select quality teachers in the hiring process? In an era of educational accountability, one can see this phenomena highlighted in legislation as well. In the No Child Left Behind legislation, all teachers must be “highly qualified”. If the research shows us what characteristics comprise a high quality teacher and how that teacher dramatically impacts student achievement, then how can school districts use current technologies to aide in the identification of strong teacher candidates?

2.5 RESEARCH QUESTIONS

This study of teacher selection was conducted to discern if and how the qualities of effective teachers are being utilized in the hiring process. Specifically:

- 1) What selection tools are Pennsylvania school districts utilizing in the teacher hiring process?
- 2) What role does technology have in Pennsylvania teacher selection?

- 3) From the perception of participants in this study, are the utilized selection tools finding the best candidates and in a time efficient manner?
- 4) Are the utilized selection tools linked to the research on the qualities of effective teachers?

Table 2.2 Survey Questions Reflecting Research Questions

Research Question	Survey Questions
What selection tools are Pennsylvania school districts utilizing in the teacher hiring process?	14, 17, 20, 23, 26, 29, 32, 35, 38
What role does technology have in Pennsylvania teacher selection?	13, 14, 17, 20, 23, 26, 29, 32
From the perception of participants in this study, are the utilized selection tools finding the best candidates and in a time efficient manner?	15, 16, 18, 19, 21, 22, 24, 25, 27, 28, 30, 31, 33, 34, 36, 37, 39, 40
Are the utilized selection tools linked to the research on the qualities of effective teachers?	42 - 71

2.6 OPERATIONAL DEFINITIONS

Adaptive Interview Format---during an interview, a candidate's answer to a question determines what the next question will be

Centralized Selection---administrators at a central office carry out the hiring process

Commercial Screening Instruments---a tool designed by a company for teacher screening purposes, often with proprietary rights

Decentralized Selection---administrators at the school building level carry out the hiring process.

Employment Technologies---Any computerized or on-line program that aids in the screening, selecting or hiring of individuals for a specific job.

Evaluation---The process by which a teacher's performance is evaluated. This process usually involves observation, data collection, reporting, and follow-up.

Highly Qualified---(as defined by NCLB); state or nationally certified to teach in a specific subject and, or the successful performance on a teacher subject test.

Screening---The process by which an applicant pool is narrowed based on a pre-determined list of criteria.

Selection--- The process by which an applicant's credentials are reviewed, the candidate is interviewed and chosen for the position.

Structured Interview---questions are developed prior to the interview. Questions pertain to pre-established criteria for the position and focus on what experience the applicant has in the skills needed for the current job. Interviewees are asked the same questions, in the same order under the same conditions with no deviation to follow up questions or discussion.

Teacher of Record--- A teacher of record is a professional or temporary professional teacher assigned by a school entity as the primary instructor for a group of students. This teacher is responsible for delivering content and evaluating the assigned student(s).

Title I--- Title I of the Elementary and Secondary Education Act of 1965 (20 U.S.C. 6301 et seq.) was amended to: Title I--Improving The Academic Achievement Of The Disadvantaged; this federal funding was put into affect to help children in poverty reach proficiency on state achievement tests.

Unstructured Interview---This type of interview is more of a discussion with the candidate to get to know more about the person. This format often lends itself to an informal discussion that typically does not focus on the applicant's skill as related to the job, but more as a person. Candidates often are not asked the same questions, in the same order under the same conditions. Therefore, this type of interview is more subject to complaints to the Equal Opportunity Commission.

2.7 METHODOLOGY AND PROCEDURES

2.7.1 Subjects

The research subjects for this study consisted of central office administrators responsible for overseeing the hiring of teachers (e.g., superintendents, human resource directors or assistant superintendents). Subjects were members of the professional organization, the Pennsylvania Association of School Personnel Administrators (PASPA). PASPA is a voluntary professional organization for school personnel practitioners in Pennsylvania. Any school administrator is permitted to join. It was founded in 1986 by representatives of the Eastern Pennsylvania Association and the Western Pennsylvania Association of School Personnel Administrators. The organization's goal is to

provide its members with professional development activities surrounding personnel-related issues. At the time this study was being conducted, there were 260 organizational members. Eliminating private schools, technical schools and other non-public school districts, there were 177 Pennsylvania public school district members in PASPA. Based on survey research of volunteer completions (Sheehan, 2001), the minimum participation sought was 30% of the total sample (177), or approximately 53 individuals.

2.7.2 Recruitment of Subjects

The research on survey response indicates that a pre-emptive letter from someone important or of power alerting the subjects to the survey will yield a higher response rate. Therefore, the researcher wrote a pre-emptive introduction about the study and sent it to Dr. James Antis, Executive Director of PASPA. Dr. Antis sent the pre-emptive letter electronically to all of his members in May of 2009 (Appendix A). In August 2009, the invitation to participate was sent to all 260 members of PASPA (Appendix B). PASPA's electronic mail server did not have the capability to separate out the non-public entity members. Therefore, the invitation was sent to all 260 members with language in the invitation making it clear that the study was limited to Pennsylvania Public Schools (n=177). The electronic invitation included the link to the online survey titled *Teacher Selection Tools in Pennsylvania*. In the invitation letter, the researcher explained the risks and benefits of participating in the study. After two weeks and four weeks, a follow-up e-mail was sent. All correspondence in regard to this study was sent electronically via e-mail without any identifying information about the recipients (only "PASPA member" could be seen in the "To:" block).

2.7.3 Survey Instrument and Pilot

After extensive study on teacher quality and teacher selection tools, the researcher developed a survey instrument to obtain information about the teacher selection tools being utilized by Pennsylvania Public Schools and whether or not these tools were linked to the qualities of effective teachers. The questionnaire was a web-based survey instrument designed to collect information in the following five categories:

- a) Demographics
- b) Selection process
- c) Screening and selection tools
- d) Subject's perception of screening and selection tools
- e) Selection criteria and considerations as highlighted in research on qualities of effective teachers

To test the logistics of the on-line survey, the researcher conducted a pilot study of twenty subjects. The results of the pilot study were then compiled via an on-line survey service provider, Survey MonkeyTM. An analysis of each question was conducted by the researcher. In addition, the participants were asked by the researcher if any questions were confusing or cumbersome. As a result, some changes were made to the wording of questions and answer choices in the survey. This pilot information was stored as a separate file on Survey MonkeyTM. A new storage file was created to run the actual survey.

2.7.4 Data Collection

The web-based survey was open to invitees from August 12, 2009 to September 24, 2009. In order to ensure confidentiality, each survey was communicated from the on-line survey site to the researcher without identifying information. Neither the subject's name, nor school district appeared on the survey. All data from this study were maintained in a password-protected website. Data were then downloaded to a password-protected laptop. All data were maintained in accordance with the regulations of the University of Pittsburgh's Institutional Review Board.

2.7.5 Analysis of the Data

The researcher sought qualitative and quantitative data by constructing single response, Likert scale, ranking and open-ended questions. Survey data was collected via Survey MonkeyTM. The data was then downloaded into Statistical Package for the Social Sciences (SPSS) and were analyzed for frequencies and percentages of distribution responses. Cross-tabulations were conducted to explore patterns of responses. All statistical analyses are reported and discussed in the next chapter. Dr. Elaine Rubenstein, University of Pittsburgh Office of Evaluation and Method, made recommendations for organizing and displaying the data in a manner for which the reader could better understand.

3.0 RESEARCH FINDINGS

3.1 RESEARCH QUESTIONS

The research questions articulated in chapter two were as follows:

- 1) What selection tools are Pennsylvania school districts utilizing in the teacher hiring process?
- 2) What role does technology have in Pennsylvania teacher selection?
- 3) From the perception of participants in this study, are the utilized selection tools finding the best candidates and in a time efficient manner?
- 4) Are the utilized selection tools linked to the research on the qualities of effective teachers?

3.2 FINDINGS

3.2.1 Demographic Characteristics

Demographic information included the following: participant's professional position in the district, verification of participant's responsibility in the hiring process, number of years in position, number of years in education, gender, context of district (urban, rural, or suburban), region location within the

state of Pennsylvania (North West, South West, Central, North East, South East), size of district (total student enrollment, number of teachers), number of new teachers hired on average per year.

- Of the 55 respondents, half were human resource directors. The other three groups are represented by other chief administrators in school districts charged with overseeing the hiring process. See Table 3.1 below for all responses.

Table 3.1 Respondent’s Professional Position

<i>Position</i>	n=55	%
Director of Human Resources	27	50%
Superintendent	10	18.5%
Assistant Superintendent	7	13%
Other (e.g., Administrative Assistant for Personnel, Administrative Director, Director of Curriculum and Instruction, Human Resources Generalist or Personnel Specialist)	10	18.5%
Skipped Question	1	

- When respondents were asked if they were the primary person overseeing the hiring process, 94 % (n=51) indicated that “yes.” Three individuals answered “no” and were prompted to stop taking the survey. One individual skipped this question.
- Responses to the question, “How many years have you been in this position?”, indicated that respondents were fairly new to their current position with 50% having been in the position for five or less years. However, respondents were not new to the field of education; sixty seven percent (n=35) of respondents indicated that they have been in education for 16 or more years. The demographic responses indicated that these central office administrators charged with the responsibility of hiring have multiple years of experience in the field of education.

- Gender showed a slight difference with 56% (n=29) females and 44% (n=23) males.
- Urban schools were underrepresented with only one urban school responding to the survey. Suburban and rural schools were a majority of the respondents with suburban schools representing 52% (n=27) of respondents and rural schools representing 46% (n=24) of respondents.
- Respondents identified the region of Pennsylvania within which their school district was located: Central (30%, n= 16), Southeast Pennsylvania (30%, n=16), Southwest Pennsylvania (15%, n=8), North East (13%, n= 7) and North West (11%, n= 6).
- There was a wide range of answers in regard to district size, as analyzed through student enrollment, total teachers, and the average number of teaching positions sought to fill each year. On one end of the spectrum, two respondents were from districts with less than 900 total students, less than 100 teachers and needing to hire one to five teachers per year. On the other end of the spectrum, four districts responded that they had 7,000+ students, with over 500 teachers on staff and needing to fill on average 21 or more teaching positions per year. Thirty-four percent (n=18) fell within the small to mid-size range with a student enrollment of 1,000 – 3,000. Thirty-six percent (n=19) fell within the mid-size range with a student enrollment of 3,001-5,000.

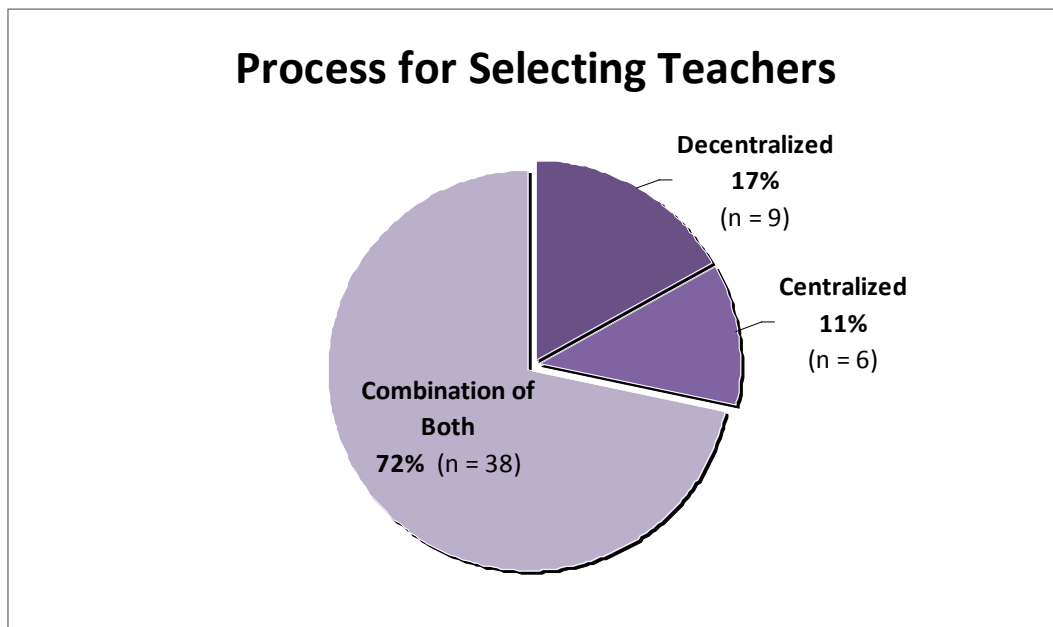
3.2.2 Process for Selecting Teachers

As indicated by the literature in section 1.5 of this writing, the process for selecting teachers can affect the hiring of quality teachers. The following represents data in regard to the process for selecting teachers in Pennsylvania.

- Seventeen percent (n=9) of districts indicated that the process for selecting teachers was decentralized (with building level principals making most of the decisions about hiring).
- Eleven percent (n=6) indicated that their process was centralized with the central/district office making most of the decisions about hiring.
- Seventy-one percent (n=38) of districts reported a combination of both.

The chart in Table 3.2 gives a pictorial view of the hiring process in respondent’s districts.

Table 3.2 Process for Selecting Teachers



- Fifty-nine percent of respondents (n=31) indicated that the Superintendent is on the interview team that recommends (a) finalist(s) to the School Board, 74% (n=39) indicated that Other Central Office Personnel (eg. Assistant Superintendent, Business Manager, Director) were on the interview team, 72% (n=38) indicated Principal, 43% (n=23) indicated Assistant Principal

and 28% (n=15) indicated teachers, 27% (n=14) indicated “other”, e.g., Director of Special Education, Human Resources Director, Curriculum Director. (Please note that the total responses equal 160 because respondents were asked to check all that apply.)

These results are reflective of the literature review on teacher hiring practices as indicated in sections 1.4 and 1.5 of this writing (Liu & Moore Johnson, 2003; Shivers, 1989; Wise et al., 1987). Slightly more school districts utilized a centralized process versus a decentralized process in teacher hiring. There is also mention in the qualitative data by a few participants that they included lead teachers or department chairs on their interview panel. On the other hand, an overwhelming majority indicated that they used a combination of both, echoing further research in the literature review (Wise et al., 1987).

3.2.3 Research Questions

The researcher developed four research questions to fulfill the purpose of this study. What follows in this section are the findings as they relate to each research question.

3.2.3.1 Research Question #1: What selection tools are Pennsylvania school districts utilizing in the teacher hiring process?

As discussed in chapter 1, the process for selecting teachers begins with the search for applicants. Survey respondents were asked if their district utilized two specific on-line data warehouses: PA-

Educator.net and PAREAP. Twenty-five respondents (48%) indicated that, “yes” their district used PA-Educator.net and 12 respondents (24%) indicated that their district utilized PAREAP.

The remaining tools are used for the purpose of interviewing (e.g., Teacher Insight, Teacher Perceiver, Interactive Voice Response, ICIS, STAR, TQI and Locally Created Interview Questions). In this section of the survey, a majority of respondents indicated that they used locally created interview questions for teacher selection (93%, n=49). Only eleven respondents out of 52 indicated that they were using any type of commercial or proprietary protocol for interviewing. No respondents indicated that they utilized Interactive Voice Response, Teacher Perceiver or STAR. Table 3.3 reports out all utilized selection tools with number of “yes” responses.

Table 3.3 Districts Using Commercial Screening and Selection Tools

Selection Tool	Used for	n	%
Locally Created Questions	Interviewing	49	93
PaEducator	Credential Warehouse	25	48
PaREAP	Credential Warehouse	12	24
TQI	Interviewing	9	17
Teacher Insight	Interviewing	1	1
ICIS	Interviewing	1	1

A cross-tabulation analysis was conducted between questions #14 (PA-Educator.net) and #17 (PAREAP). This analysis revealed that 71% (n=37) of the respondents utilized one of these electronic databases to search for candidates. A cross-tabulation analyses on PA-Educator.net and PAREAP to district context (urban, suburban and rural), district region (North West, South West, Central, North

East and South East) and district size (student population and number of teachers) showed no patterns. However, a cross-tabulation analysis between Pa-Educator.net and PAREAP with region of the state did reveal a pattern. Districts identifying themselves as being in Western regions or the Central part of the state (n=18), utilized PA-Educator.net over PAREAP. Districts in the North East and South East utilized PAREAP over PA-Educator.net. None of the districts in the central part of the state indicated that they utilized PAREAP to search for potential teacher candidates. This analysis is most likely reflective of the region of the state where the electronic warehouse was developed and marketed, as per the discussion in 1.6.1.1 and 1.6.1.2. The only urban school responding to the survey indicated that it did not use PAREAP or PA-Educator.net but that it did use a commercial interview tool: Stronge and Hindman's Teacher Quality Index (TQI).

In order to determine if there was any pattern among utilized selection tools, all the utilized tools (Teacher Insight, ICIS, TQI, PA-Educator.net, PAREAP and Locally Created Interview Questions), were cross-tabulated. The following are major points drawn from the data:

- Twenty three out of 52 respondents (44%) used both PA-Educator.net and locally created interview questions.
- Eleven out of 50 respondents (22%) used both PaREAP and locally created interview questions.
- Seven out of the nine respondents that used the Teacher Quality Index, also used locally created interview questions (78%).
- The one respondent that used Teacher Insight also used locally created interview questions.
- The one respondent that used ICIS also used locally created interview questions.

The cross-tabulation data shows that even if school districts were using a commercial or proprietary tool, they were also using locally created interview questions. Only two respondents indicated they were using the commercial selection tool exclusively.

At the end of the selection tools questions, respondents were asked an open-ended question - "Does your district use any other tools in the teacher selection process?" Twenty-four (46%) out of fifty-two respondents indicated that they used other types of tools. This qualitative data was examined for recurring themes and categorized in similar groups. The first theme was a performance interview/demonstration/mock lesson. Thirteen respondents identified this theme as a tool in teacher selection. The second highest theme, writing samples, was identified by five respondents. These comments were not surprising since interview research supports such practices (Stronge & Hindman, 2006). Reference checks and hiring substitute teachers also appeared in the qualitative data, but in much more negligible frequencies (n=4, n=3). The researcher does find it interesting that participants saw these items as "interview tools"; whereas the researcher would define the reference checks more as a procedure and hiring substitute teachers as a recruitment resource. Nevertheless, it is important to note that the mention of hiring substitute teachers parallels research in the literature review on hiring practices in Pennsylvania (Strauss, 1998). It is also essential to call attention to the fact that Strauss found that hiring substitute teachers had no positive relationship to student achievement.

This following is a list of all responses and indicates that a wide variety of other tools are also being utilized in the teacher selection process:

- Performance interview/demonstration/mock lesson (some with students, others in front of a panel) (54% n=13)
- Writing samples (some on the computer) (n=5)
- Reference checks (n=4)

- (Hire) Substitute teachers (n=3)
- Multiple step interview process (n=3)
- Praxis test scores/proficiency test in language arts skills and math skills (n=2)
- Credential review (n=2)
- Attendance at job fairs
- Postings on the district website
- Best practices in teaching disseminated by ASCD, national and state conference and teaching universities
- Teacher prepared lesson plans with an analysis provided by the teacher of the lesson during the interview.
- Observation of previous district employment
- Computer literacy activities
- Job descriptions
- On-line job application tool (k12 personnel)
- On-line interview process for first interview
- Behavioral testing products
- Portfolio review

3.2.3.2 Research Question #2: What role does technology have in Pennsylvania teacher selection?

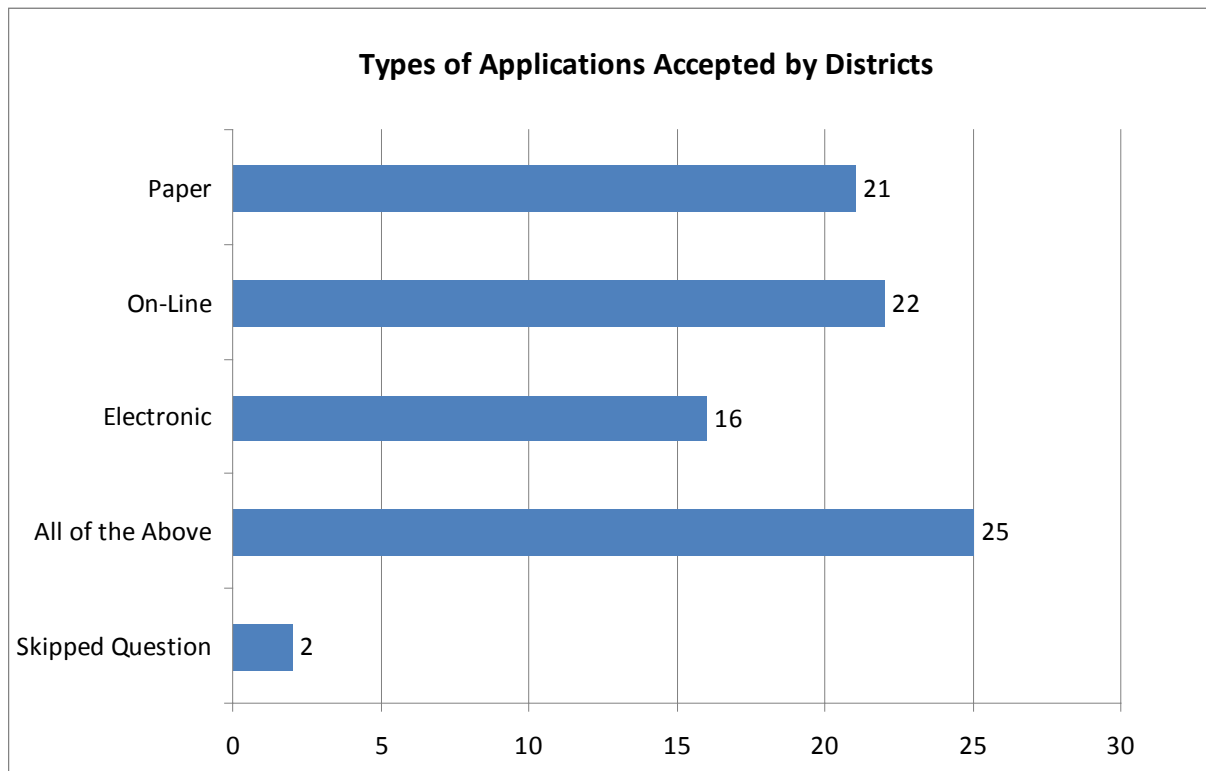
When asked about the types of applications accepted, respondents indicated that:

- 40% accept paper applications

- 42% accept on-line applications (e.g., PA-Educator.net, PAREAP)
- 30% accept electronic applications (e.g., e-mail)
- 49% accept all of the above (this number is inclusive of the total respondents)

Table 3.4, breaks down the individual responses

Table 3.4 Types of Applications



Note: Total responses = 84; total is greater than 52 because districts accepted application by multiple methods.

As indicated in the prior research question, a cross-tabulation between PA-Educator.net and PAREAP reveals many of the respondents in schools in Pennsylvania are utilizing on-line electronic warehousing systems (71%, n=37) to search for potential teaching candidates. The number of respondents accepting on-line and electronic applications was 73%. (Forty-two percent accepted on-

line applications, 31% accepted electronic applications). Albeit, 48% (n=25) of districts indicated that they accept both paper and electronic applications.

When it comes to electronic commercial or proprietary interviewing tools, the numbers are lower, with all electronic interviewing tools scoring under 1.9% (n=2). One school district indicated that they used the Teacher Insight by Gallup and one school district indicated that they used the ICIS by Ebmeier. The district using Teacher Insight indicated that they felt the tool was very time efficient and was helpful in hiring the best candidates. The district using ICIS indicated that they felt it was time efficient and was “somewhat helpful” in hiring the best candidates.

3.2.3.3 Research Question #3: From the perception of participants in this study, are the utilized selection tools time efficient and helping to hire the best teacher candidates?

A Likert scale was used to determine the perception of participants in regards to the tool efficacy, specifically:

- a) “Do you feel this tool is time efficient?” (e.g., Very Efficient, Efficient, Somewhat Efficient, Not Very Efficient, Unsure)
- b) “Do you feel this tool helps to hire the best candidates?” (e.g., Very Helpful, Helpful, Somewhat Helpful, Not Very Helpful, Unsure)

Table 3.5 Selection Tools – Time Efficiency

Selection Tool	n	Not Very Efficient (1)	Somewhat Efficient (2)	Efficient (3)	Very Efficient (4)	Unsure (5)	Mean	SD
Locally Created	49	0.0% (0)	12.2% (6)	39.8% (19)	46.9% (23)	2.0% (1)	3.40	.728
PAREAP	15	6.7% (1)	0.0% (0)	26.7% (4)	60% (9)	6.7% (1)	3.60	.910
Pa-Educator.net	26	0.0% (0)	23.1% (6)	46.2% (12)	30.8% (8)	0.0% (0)	3.11	.751
TQI	9	0.0% (0)	11.1% (1)	55.6% (5)	33.3% (3)	0.0% (0)	3.22	.667
Teacher Insight	1	0.0% (0)	0.0% (0)	0.0% (0)	100% (1)	0.0% (0)	4.00	--
Teacher Perceiver	1	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	100% (1)	5.00	--
ICIS	1	0.0% (0)	0.0% (0)	100% (1)	0.0% (0)	0% (0)	3.00	--

As shown in Table 3.5, the following is revealed by the data:

- Locally created interview questions scored a 3.40 mean on time efficiency, with 46.9% (n=23) of respondents ranking it as “very efficient,” 19 respondents ranking it as “efficient,” and 6 respondents ranking it as “somewhat efficient.”
- PAREAP scored a mean of 3.60, with 60% (n=9) of the respondents scoring it as “very efficient,” and 26.7% (n=4) respondents giving it a score of “efficient.” One respondent felt it was “not very efficient,” while another was unsure.

- Pa-Educator.net scored a 3.11 mean in time efficiency, with 8 respondents scoring it as “very efficient,” and 12 scoring it as “efficient,” and six scoring it as “somewhat efficient.”
- Two of the selection tools were not used at all – Interactive Voice Response and STAR. Therefore these two tools had no score rating on perception of participants.
- Only one participant ranked their utilized tool as “not very efficient”. This tool was PAREAP.
- Teacher Insight, Teacher Perceiver and ICIS were each used by only one district. The user of Teacher Perceiver was unsure about its time efficiency. The users of Teacher Insight and ICIS rated them as “very efficient” and “efficient,” respectively.

Once respondents ranked the utilized tool for time efficiency, they were then asked to rank it on whether the tool helped them to hire the best candidates. Table 3.6 shows all responses.

Table 3.6 Selection Tools – Do you feel this tool helps to hire the best candidates?

Selection Tool	n	Not Very Helpful (1)	Somewhat Helpful (2)	Helpful (3)	Very Helpful (4)	Unsure (5)	Mean	SD
Locally Created	49	0.0% (0)	8.2% (4)	34.7% (17)	55.1% (27)	2.0% (1)	3.52	.677
Pa-Educator.net	27	3.7% (1)	33.3% (9)	37% (10)	25.9% (7)	0.0% (0)	2.86	.848
PAREAP	16	6.3% (1)	18.8% (3)	31.3% (5)	31.3% (5)	12.5% (2)	3.25	1.125
TQI	9	0.0% (0)	11.1% (1)	22.2% (2)	66.7% (6)	0.0% (0)	3.56	.726
Teacher Insight	2	0.0% (0)	0.0% (0)	50% (1)	0.0% (0)	50% (1)	4.00	--
Teacher Perceiver	1	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	100% (1)	5.00	--
ICIS	1	0.0% (0)	100% (1)	0.0% (0)	0.0% (0)	0% (0)	2.00	--

As seen in Table 3.6, locally created questions had the highest number of respondents (n=49) and was also ranked fairly high in helping to hire the best candidates. It was ranked by 55% (n=27) of respondents as “very helpful”. Seventeen respondents (34.7%) (n=17) ranked it as “helpful” and 8% said it was somewhat helpful. Pa-Educator.net was scored by 25.9% of respondents as “very helpful”, 37% as “helpful”, 33.3% said it was “somewhat helpful” and one respondent felt it was “not very helpful”. PAREAP scored a 3.25 mean for helping to hire the best. With this tool, 13 out of the 16

that used it felt it was “somewhat helpful” or better. Two respondents were unsure. Teacher Insight, with two users, scored one “helpful” and one “unsure”. The user of Teacher Perceiver was “unsure” on whether or not this tool helped them to hire the best candidates.

One commercial tool, the Teacher Quality Index, was scored by all the respondents using it (n=9) as a tool that school administrators felt was time efficient and helped to hire the best candidates. Eighty-nine percent said the tool was time efficient (see Table 3.5) and all nine respondents felt it helped them to hire the best candidates (see Table 3.6). Although the n number is low (9), it is worth noting that the tool did not score below the “somewhat” ranking in either time efficiency or helping to hire the best.

3.2.3.4 Research Question #4: Are the utilized selection tools linked to the research on the qualities of effective teachers?

A yes/no prompt was used to determine if specific criteria (as revealed by the literature review in Chapter 1), were considered in the teacher selection process. If “yes”, a branch question was used to determine to what extent the item influenced the teacher selection process. Criteria were chosen based on both qualities that were linked to effective teachers and qualities that were not linked. A 5-point Likert scale was used for the branched question.

Participants were asked the following:

- 1) Is the following item considered in the teacher selection process in your district?

If yes . . .

- 2) To what extent does the following item influence the teacher selection process?

Choices: A lot, Some, Very little, Not at all and Unsure

As indicated in Table 3.7, the highest consideration when hiring a teacher, ranked by 100% of respondents, was a Pennsylvania teaching certification. The next highest were: content knowledge, knowledge of effective classroom practices, level of knowledge with classroom pedagogy, prior teaching experience and strong verbal ability. The lowest scoring considerations were: alumnus of the district, resides in the district and knows a school board member.

Table 3.7 and Table 3.8 report out all results for considerations and influences on the teacher selection process.

Table 3.7 Considerations in Teacher Selection

Is the following item considered in the teacher selection process in your district?	Yes (n = 53)	%
Has a Pennsylvania teacher certification.	53	100
Content knowledge.	52	98
Knowledge of effective classroom practices.	52	98
Level of knowledge with classroom pedagogy.	52	98
Prior teaching experience.	52	98
Strong verbal ability.	52	98
Knowledge of teaching and learning.	51	98
Knowledge level about student achievement and growth.	50	94
Demonstrated success in student achievement and growth.	46	87
Teacher preparation program the applicant has undergone to receive certification.	43	81
Has an advanced degree.	38	72
Alumnus of the district.	24	48
Resides in the district.	12	24
Knows a School Board member.	11	21

Table 3.8 Influences on Teacher Selection

Influence	A lot		Some		Very Little		Not at All		Unsure		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
Pennsylvania teacher certification Mean = 3.91, SD = .354	46	83.6	6	10.9	0	0	0	0	1	1.8	53	96.4
Knowledge of teaching and learning Mean = 3.98, SD = .139	51	92.7	1	1.8	0	0	0	0	0	0	52	94.5
Content knowledge Mean = 3.85, SD = .364	44	80	8	14.5	0	0	0	0	0	0	52	94.5
Knowledge of effective classroom practices Mean = 3.87, SD = .397	46	83.6	5	9.1	1	1.8	0	0	0	0	52	94.5
Level of knowledge with classroom pedagogy Mean = 3.71, SD = .498	38	69.1	13	23.6	1	1.8	0	0	0	0	52	94.5
Teaching experience Mean = 3.27, SD = .528	16	29.1	34	61.8	2	3.6	0	0	0	0	52	94.5
Verbal ability Mean = 3.73, SD = .528	37	67.3	13	23.6	1	1.9	0	0	1	1.9	52	94.5
Knowledge about student achievement Mean = 3.72, SD = .536	35	63.6	13	23.6	1	1.8	0	0	1	1.8	50	90.9
Success in student achievement Mean = 3.5, SD = .587	25	45.5	19	34.5	2	3.6	0	0	0	0	46	83.6
Undergrad teacher program Mean = 3.21, SD = .514	11	20	30	54.5	2	3.6	0	0	0	0	43	78.2
Advanced degree Mean = 3.11, SD = .453	6	10.9	30	54.5	2	3.6	0	0	0	0	38	69.1
Alumnus of the district Mean = 2.63, SD = .792	0	0	16	29.1	8	14.5	2	3.6	1	3.6	27	49.1
Resides in the district Mean = 3.21, SD = .893	4	7.3	6	10.9	3	5.5	0	0	1	1.8	14	25.5
Knows a School Board member Mean = 2.55, SD = 1.214	1	1.8	3	5.5	4	7.3	2	3.6	1	1.8	11	20.0

The highest considerations also scored overall higher percentages for influences (see Table 3.8). However, the same is not true of low considerations. One of the lower considerations (alumnus of the district) was still scored by 48% of the districts (n=24) as an item considered in the teacher selection process. On whether this item “influences” the decision, 29% of the districts that said it did have “some” influence on the teacher selection process (see Table 3.8). This consideration is also not linked to the research on the qualities of effective teachers. The other two considerations not supported by research on qualities of effective teachers were: knows a School Board member and resides in the district. Both of these items scored low on considerations and low on influence. However, “resides in the district” was ranked as having “a lot” of influence on the teacher selection process by four respondents. 10.9% of respondents said that it had “some” influence and three respondents said that it had “very little” influence. One respondent was unsure. These findings are consistent with Strauss’ research (1998), as state in 1.4 of this writing.

Towards the end of the survey, participants were asked to “rank order the top three most important [criteria] to their district when hiring a teacher (1, 2, 3 – with 1 being the most important).” The top three items in this ranking are: knowledge of teaching and learning, content knowledge, and knowledge of effective classroom practices. In this ranking we see Pennsylvania teaching certification move down slightly, with 100% respondents saying that they consider it earlier in the survey, but only 27% (n=15) now ranking it among the top three most important criteria important to the district when hiring a teacher.

One of the lowest rankings in this section of the survey, “undergrad teacher program” (the teacher preparatory program the applicant has undergone to receive certification), was identified in the literature review as a quality of effective teachers. However, in this survey, respondents ranked it as one of the lowest considerations. It was ranked by only one respondent as a top consideration.

Table 3.9 shows all considerations and how frequently they were ranked in the top three.

Table 3.9 Top Considerations for Districts When Hiring a Teacher

Influence	Ranked 1		Ranked 2		Ranked 3		Total	
	n	%	n	%	n	%	n	%
Knowledge of teaching and learning	18	64.3	5	17.9	5	17.9	28	51.0
Content knowledge	6	27.3	9	41	7	31.8	22	40.0
Knowledge of effective classroom practices	4	20.4	8	40	8	40	20	36.3
Pennsylvania teacher certification	9	60.0	2	13.3	4	26.7	15	27.2
Success in student achievement	6	42.9	5	35.7	3	21.4	14	25.5
Level of knowledge with classroom pedagogy	0	0	7	50	7	50	14	25.5
Knowledge about student achievement	4	33.3	4	33.3	4	33.3	12	21.8
Teaching experience	3	37.5	4	50	1	12.5	8	14.5
Verbal ability	0	0	2	33.3	4	66.7	6	10.9
Advanced degree	0	0	3	100	0	0	3	.05
Alumnus of the district	0	0	0	0	2	100	2	.03
Resides in the district	0	0	0	0	2	100	2	.03
Knows a School Board member	0	0	0	0	1	100	1	.02
Undergrad teacher program	0	0	0	0	1	100	1	.02

When the top three items are cross-tabulated with the most frequently used tools: locally created, PA-Educator.net, PAREAP and Teacher Quality Index there is no relationship or pattern. The following tables (Tables 3.10, 3.11 and 3.12) show the statistical cross-tabulations:

Table 3.10 Comparing Frequently Used Tools with Highest Considerations in Hiring – Knowledge of Teaching and Learning

<u>Tool</u>	Yes / No	Ranking Knowledge of Teaching and Learning (1-3, with 1 being highest)				n=
		1	2	3		
Locally Created	Y	18	5	5	28	
PA-Educator.net	Y	8	2	3	13	
PAREAP	Y	5	1	1	7	
TQI	Y	2	0	1	3	
TQI	N	13	5	4	22	
PAREAP	N	8	4	4	16	
PAEducator.net	N	9	3	1	4	
Locally Created	N	0	0	0	0	

Table 3.11 Comparing Frequently Used Tools with Highest Considerations in Hiring - Content Knowledge

Tool Utilized	Yes / No	Ranking Content Knowledge (1-3, with 1 being highest)			n=
		1	2	3	
Locally Created	Y	4	9	7	20
PAEducator.net	Y	2	4	3	9
PAREAP	Y	2	3	3	8
TQI	Y	0	1	1	2
TQI	N	5	7	4	16
PAEducator.net	N	4	5	4	13
PAREAP	N	4	5	2	11
Locally Created	N	1	0	0	1

Table 3.12 Comparing Frequently Used Tools with Highest Considerations in Hiring - Knowledge of Good Classroom Practices

Ranking Knowledge of Good Classroom Practices (1-3, with 1 being highest)					
Tool	Yes / No	1	2	3	n=
Locally Created	Y	3	7	8	18
PA-Educator.net	Y	1	4	3	8
PAREAP	Y	1	1	2	4
TQI	Y	1	2	1	4
PAREAP	N	1	6	4	11
TQI	N	1	3	7	11
PA-Educator.net	N	2	3	5	10
Locally Created	N	0	1	0	1

The second to the last question on the survey asked, “Any other items that your district may be looking for when hiring a teacher?” Twenty out of fifty-two respondents (38%) responded to this question. All answers were compiled and analyzed for themes. One recurring theme was the applicant’s inclination towards children (n=7). This theme addresses the question, “Does the candidate demonstrate the ability to establish a positive rapport with students?” One respondent said that they look for “someone who genuinely likes kids, sees every child as an individual and whose primary concern is the success of each and every student.” Another respondent said that one of the items that

they listen for in an interview is, "... does the candidate make reference to, or provide evidence, that they connect with kids?" This notion of having a passion for teaching children is mentioned several times throughout the open-ended responses. As discussed in the literature review, Stronge (2002 & 2007) said that this attribute fits into a category that he labeled "teacher as a person". This broad category encompasses personal attributes and affective characteristics that successful teachers bring to the classroom. Other such qualities that respondents mentioned that also fit into this category are: maturity level, caring, fairness, respect, enthusiasm, motivation and reflectiveness.

One item not mentioned by Stronge, but pointed out by several respondents (n=2) was "fit". One respondent said that it was important that the candidate "fit with other members of the teaching team or building." Another respondent said that they evaluate the candidate's "ability to work interdependently with team members who are mutually accountable for the student's learning..."

The next recurring theme could be classified as technical knowledge. In this category respondents (n=3) said that they wanted candidates to be knowledgeable about their content, student achievement data, differentiated instruction and student assessment.

The last theme, mentioned three times, was candidate possesses multiple certificates, especially in reading or special education because as one respondent put it, "there really is no such thing as a regular education classroom!"

The final question on the survey, also an open-ended question, asked the respondent if there was anything else they wanted the researcher to know about teacher selection in their district. Thirteen respondents out of fifty-two (25%) responded to this question. Responses were compiled and analyzed for themes. The two most frequent themes were: performance requirement embedded in the interview process and a saturated job market in Pennsylvania. Specifically, three respondents said that they require some type of performance lesson or mock teaching lesson as part of their interview process.

One respondent said that they required candidates to bring a portfolio to the interview to present to the interview team.

Three respondents commented on the saturated teaching market in Pennsylvania and how difficult it is to sort through so many applications. Two respondents indicated that their local tool was aligned to research or best practices (e.g., Charlotte Danielson’s work). Additionally, two separate respondents indicated that they use other types of commercial teacher selection tools (although one mentioned is Stronge’s, and this tool is cited in this survey – the TQI). Two other respondents indicated that they try to hire reflective practitioners who are “passionate” about teaching.

One respondent indicated that they felt their process was effective because they had multiple levels of interviews involving various stakeholders... “First round interviews usually involve the Principal and teachers/staff. That team recommends 2 or 3 candidates for second round interviews. The second round interview involves the superintendent, another central office administrator, the building principal, and sometimes a teacher.”

Two districts mentioned the issue of dual certification: “We hire special education teachers (dual certified, especially in special education).” “The colleges in PA are producing way too many elementary certified candidates and not enough special ed. candidates with core content areas.”

Finally, one respondent pointed out their school board’s influence on the hiring decision saying that their hiring process was “governed by school board policy”.

3.3 SUMMARY OF FINDINGS

Research question one asked, “What selection tools are Pennsylvania school districts utilizing in the teacher hiring process?” The results of this survey indicated that many school districts in Pennsylvania

are using locally created interview questions versus any type of formal, commercial or proprietary interview tools. The data shows that even if school districts were using a commercial or proprietary tool, they were also using locally created interview questions.

What role does technology have in Pennsylvania teacher selection? In order to answer this question, the researcher pulled data from specific survey questions relating to technology: types of applications accepted, on-line warehousing databases and electronic interviewing tools. From the results in this study, 48% (n=25) of districts indicated that they accept both paper and electronic applications. The researcher was surprised that school districts were still accepting paper applications. Many school districts (71%) are utilizing on-line warehousing databases to search for applicants. However, they are not utilizing electronic employment technologies for interviewing purposes. The researcher did not find this to be surprising, since the literature review indicates that these technologies can be quite costly.

From the perception of participants in this study, are the utilized selection tools finding the best candidates and in a time efficient manner? Here, Likert scale data is used to illuminate participant's perceptions of selection tools in two categories: time efficiency and helping to find the best candidate. In this section, respondents, for the most part, indicated that they were satisfied with the tool that they were using. Two tools that scored well in time efficiency were: locally created interview questions and PAREAP. Three tools that scored well in helping to hire the best teachers were: locally created, Pa-Educator.net, and PAREAP. Although the TQI had a low "n" number it did score well in both time efficiency and helping to hire the best. Six districts out of 26 (23%) indicated that PA-Educator.net was only "somewhat" time efficient. Six districts (12%) indicated that locally created interview questions were "somewhat" time efficient. One respondent that utilized PAREAP did feel that it was

“not very efficient”. Although these numbers are not high, it does raise the question of why a school district would continue to use a tool that was “not very efficient” or “somewhat efficient”?

Are the utilized selection tools linked to the research on the qualities of effective teachers? Statistical cross-tabulations were used in this sub-section to determine if patterns exist between the utilized selection tools and the qualities of effective teachers. There was insufficient evidence to determine if the utilized selection tools were linked to the qualities of effective teachers. Coincidentally, the data did point to other interesting factors like, considerations and influences of the teacher selection process. Responses indicated that other factors that have nothing to do with the qualities of effective teachers have an impact on teacher hiring. One of the lower considerations (alumnus of the district) was still scored by almost half of the respondents (n=24) as an considered in the teacher selection process. This same item was also identified as having “some” influence on the teacher selection process with 29% of respondents ranking it. This finding is also consistent with the literature (Strauss, 1998).

The next chapter is a discussion of the results and conclusions that the researcher has deduced from the data in the survey. This chapter also includes the limitations of the study, recommendations for administrators and recommendations for further research.

4.0 DISCUSSION AND CONCLUSIONS

This chapter includes four sections: (a) discussion and conclusions drawn from the dissertation study, (b) limitations of the study, (c) recommendations for further research, and (d) discussion and recommendations.

4.1 DISCUSSION AND CONCLUSIONS

The focus of this study was to examine teacher screening and selection tools currently being utilized by public school districts in Pennsylvania and to compare these tools to the research on qualities of effective teachers. The researcher developed four research questions that guided the study:

- 1)** What selection tools are Pennsylvania school districts utilizing in the teacher hiring process?
- 2)** What role does technology have in Pennsylvania teacher selection?
- 3)** From the perception of participants in this study, are the utilized selection tools finding the best candidates and in a time efficient manner?
- 4)** Are the utilized selection tools linked to the research on the qualities of effective teachers?

An on-line electronic survey was used to collect the data needed for this study. The researcher studied literature related to teacher quality, teacher selection and electronic employment technologies. Survey questions were developed from the major topics in the literature review. Salient points revealed in the literature are bolded below, following discussion from the researcher:

An examination of student performance (as measured by the Pennsylvania System of School Assessment, Math and Reading) in 501 Pennsylvania public school districts, found that student performance was affected by specific teacher characteristics (Strauss, 1998).

If specific teacher characteristics can be linked to positive student performance, then, these characteristics should be sought in the teacher selection process. As pointed out in the literature review, qualities of effective teacher research has been compiled and analyzed for themes, which have been linked to teacher hiring (Stronge & Hindman, 2006). Thus, the following questions should be asked, “Do school administrators, responsible for hiring, know and understand this research? Further, are they using this knowledge to develop local interview protocols?” This study does indicate that many school administrators are considering the qualities of effective teachers in their interviewing process. But, there is insufficient evidence that they are linking these items to their interview protocols. However, there is evidence that other factors are impacting the hiring decision: residency in the district, alumnae of the district and knowing a school board member. As indicated in Strauss’ research (1993, 1998, 1999 & Strauss et al., 2000), these items have no relationship to the effectiveness of a teacher and therefore, should not be considered at all in the hiring process. These considerations are illegal and offensive to equal opportunity. Further, they are inappropriate in a saturated market, like Pennsylvania.

National studies indicate that that there are specific qualities of effective teachers that should be sought after in the teacher selection process (Stronge, 2002 & 2007; Stronge & Hindman, 2006).

From the results of this study, many of these qualities are being highly considered and influence the teacher selection process. Unfortunately, it is also clear that there are other influences on the teacher selection process in participant's districts. Further, it is unclear how well the locally created interview protocols are developed and tested (as explored in the next bulleted item).

Although, this study targeted human resource directors, it is unclear how many school districts in the state do not have someone overseeing the interview process, someone exclusively charged with hiring. Smaller and more rural districts tend to assign such duties to Superintendents or Assistant Superintendents, who may be wearing too many hats and may not be well-versed in hiring or human resources. Worse yet, some school districts have begun to staff human resource director positions with individuals that have a business background and no educational background. Many of these individuals struggle to learn all the idiosyncrasies of teacher preparation and certification, aside from being well-versed in the qualities of effective teachers.

In an extensive study of teacher hiring practices across the state of Pennsylvania, Strauss found extreme variations in hiring practices and the quality of teachers hired (1999).

Although this doctoral study did not focus on hiring practices per se, peripheral questions related to teacher selection tools did reveal interesting differences in hiring as pointed out by both the quantitative data and qualitative data. For instance, the high response rate to schools utilizing locally created interview questions (93%) versus school utilizing a commercial or proprietary tool for interviewing (21%), begs the question of whether or not the locally created interview questions are

reliable and or valid. While this study did not investigate or analyze actual documents from schools utilizing such tools, it is this researcher's opinion that most locally created interview questions have not been tested for validation and reliability. These types of protocols are typically very subjective with no clear scoring system, no predictive validity and no inter-rater reliability (Stronge & Hindman, 2006). Validity of the tool should be analyzed by looking at the questions closely. Are the questions linked to best practices in teaching? Are the questions designed to allow the interviewee to reflect on his/her work experience as they relate to teaching? In regards to reliability, the following question should be asked: Does the tool have a scoring rubric(s) for candidate's answers? Are these answers aligned to best practice? Are interviewers trained with actual videos of interviews for inter-rater reliability? How are interview scores weighted in the final decision?

Pennsylvania has overproduced teachers for the market (Strauss, 1998). With the onset of electronic employment technologies, schools are turning to electronic warehousing databases to manage the large pools of applicants (www.PA-Educator.net.net, 2007; www.pareap.net, 2008).

In this researcher's opinion, the over-supply research may not be well-known by students pursuing teaching degrees and their schools of education. Undergraduates may not be informed of this fact. (In speaking with student teacher placement officials, they too do not know that Pennsylvania significantly overproduces in this market.) This researcher is not suggesting that students be discouraged to go into teaching as a profession. However, education majors should be given employment facts and statistics, so that they may make wise decisions about choosing specific certifications or locations where demand may be higher. One example would be that Elementary Education majors should also seek reading specialist, or special education certificates. Elementary education is over-certified but reading specialists and highly qualified special education teachers are

difficult to find. At the very least, undergraduate education majors should be informed about the over-supply factor so that they may be prepared to relocate to a less supplied region.

All of the examined commercial selection tools claim to help school districts in finding and hiring quality teachers (Ebmeier, 2005, 2006; Ebmeier & Ng, 2006; Gallup Organization, 2004, 2006; Haberman Foundation, 2007; Stronge & Hindman, 2006; www.PA-Educator.net.net, 2007; www.pareap.net, 2008;).

Of the commercial selection tools identified in this study, PA-Educator.net and PAREAP were utilized most frequently. Since these tools are data warehouses, they are not used for interviewing purposes. The only commercial tools identified for interviewing purposes were the TQI, Teacher Insight and ICIS. The “n” numbers on all three of these tools are too low to make any assumptions. Further study is needed on each tool in each of the respondent’s schools.

4.1.2 Return Rate

To the researcher’s knowledge, there are no formal studies attempting to examine commercial teacher selection tools and connecting such tools to the qualities of effective teachers across the Commonwealth of Pennsylvania. Therefore, the researcher wanted to identify what percentages of schools were utilizing such tools, were the qualities of effective teachers being considered by school districts, to what extent did they impact the hiring decision, was there a link between the selection tools and said qualities. In order to conduct such a study, the researcher sought the help of PASPA (Pennsylvania Association of School Personnel Administrators). PASPA granted the researcher permission to survey its membership. Of the 260 organizational members, 177 represented Pennsylvania public schools.

The sample size of 177 school districts was representative of central office administrators responsible for hiring. Fifty-five individuals responded with three respondents stopping the survey after the statement, “If you are not the person primarily responsible for the hiring process in your district, please stop taking the survey and forward this e-mail to the person that is responsible for hiring.” Fifty-two (52) recipients present valid data representing both genders and various central office administrative positions.

Although the response rate to certain tools was low, the researcher believes that the data collected raises valid questions about teacher selection in Pennsylvania public schools. Further, the data may help to inform hiring practices and policies in the Commonwealth of Pennsylvania.

4.1.3 Selection Tools

When cross-tabulating schools that utilized a commercial selection tool with criteria that school administrators felt the most important in hiring a teacher, results indicated that high quality considerations were just as important to schools utilizing locally created interview questions as they were with schools utilizing commercial tools. Therefore, there appears to be no connection between utilized selection tools and criteria that district administrators believe important when hiring a teacher.

4.1.4 Considerations and Influences on the Teacher Selection Process

It is clear that what school districts rate as high considerations in hiring a teacher also influence the teacher selection process. However, it is also clear, according to the data, that there are other items influencing the teacher selection process: alumnae of the district, resident in the district and knows a School Board member.

4.2 LIMITATIONS OF THE STUDY

4.2.1 Survey Instrument

Utilizing an on-line survey had many advantages and a few disadvantages. The convenience of sending the survey out to the intended sample and getting results back instantaneously was very time efficient and inexpensive. The on-line survey provider, Survey MonkeyTM, collected and stored all data. Once the survey was closed, all numerical data was presented in chart and graph form with response ratings. This data was then downloaded to an Excel spreadsheet and to the SPSS Software (Statistical Package for the Social Sciences) for deeper statistical analysis. However, one limitation was the lack of knowledge of who responded and who did not. Follow-ups were difficult because the researcher did not know who had already taken the survey. However as discussed in Chapter 2, respondent anonymity was needed because the researcher felt that human resource directors (or school officials responsible for the teacher selection process) may not be entirely honest or might not participate if asked for identifying information.

4.2.2 Bias of the Researcher

The researcher has been a teacher in rural, urban and suburban school districts, both in Pennsylvania and the state of North Carolina. She has also been an assistant principal and principal in both a large urban and large suburban school district in both Eastern and Western Pennsylvania. As a past building level administrator and in her current position as the Assistant Superintendent for Human Resources in a large suburban public school district in Pennsylvania, she brings her experience to this research topic. Conversely, she had preconceived notions about the results of her study. She minimized this bias by

using quantitative collection methods and seeking assistance from survey experts (Mr. Keith Trahan, Graduate Assistant at the University of Pittsburgh and Dr. Elaine Rubenstein, Office of Evaluation and Method, University of Pittsburgh).

4.2.3 Generalizability of the Findings

This study only focused on public schools in the state of Pennsylvania. Charter, cyber, private and parochial schools are not included in the study. Had this study been broadened to include these non-traditional types of schools, the results may have looked significantly different due to their diversely different organizational structures. In addition, these schools sometimes have difficulty finding teachers in general because of lower salaries and scarcity of resources. However, at the same time, a growing new body of research (Bickel & Iriti, 2009) is indicating that innovation in hiring practices in these schools should cause all educators and educational policy makers to take notice. These innovative hiring practices include hiring teachers as “at-will employees”, performance interviewing and evaluation linked to student performance (p. 5). Although, including these types of schools may have helped to increase the overall return and participation rate, the researcher chose not to include them so as not to draw conclusions across diversely different organizational structures.

The focus group is also limited to school districts belonging to the professional organization PASPA (Pennsylvania School Personnel Administrators) organization. Although comprised of 270 members, only 177 members were affiliated with a public school. There are 501 public school districts in Pennsylvania, but only 53 are represented in this study, approximately 11%. In addition, respondents were a self-selected sample. Those who chose not to respond may have used more or fewer of the commercial teacher selection tools listed in the study.

In addition, this study did not investigate all teacher selection tools; only commercial and local interview questions. As indicated by the other tools that participants listed in 3.2.1, many other tools are utilized beyond commercial tools to screen and interview candidates. Most districts use conventional methods – job fairs, locally created interview questions, reference checks, hiring substitute teachers, etc. However, it appears that many more are beginning to use a performance type interview with a demonstration / mock lesson involved.

It is also important to note that when respondents were asked in the survey to rate the utilized selection tool's efficacy, there may be a vested interest impacting the responses. For instance, since the respondent is the person charged with the responsibility of hiring, it is also likely that they chose, or was part of the decision, to use such selection tool. Therefore, one must question the nature of the data. It would be interesting to see what outside experts would say about the selection tool and how it is being used in the districts identified in this study.

Finally, this study is limited to the time that the survey was given (fall 2009). As the body of research on qualities of effective teachers grows, as technology becomes more cost efficient for schools and more selection tools become available, more schools may choose to utilize such technologies and non-conventional tools.

4.3 RECOMMENDATIONS FOR FURTHER RESEARCH

If the same survey instrument were to be used for another study, the researcher recommends:

- 1) Changing #22's last choice to "unsure" versus "disagree" to mirror all other Likert scale questions in survey.

2) Delete question #23, #24 and #25, #26, #27 and #28 as these products have become obsolete since this study first began. In addition, the new researcher should update the survey with any new commercial tools that have become available.

3) Define the difference between “classroom pedagogy” (#66 and #67) and “classroom practices” (#64 and #65); with pedagogy referring to instruction and practices referring to class procedures.

4) Add aid-ratio in the demographics section so that the factor of district wealth can be analyzed against the results.

5) Open to a larger sample size to increase the validity.

If a similar study were to be repeated, the following are recommendations from the researcher:

1) Increase the population size to all 501 public school districts to allow for a generalization of teacher selection tools across all public schools in the state of Pennsylvania.

2) Use more open-ended questions in the survey. Obtaining more qualitative data about why or why not a school district is using a certain commercial tool(s) could add to this limited body of educational research.

3) Conduct a case study on one of the school districts that uses a commercial tool.

4) Study how school districts choose narrowing criteria for the large pool of candidates.

5) Investigate why school districts are accepting both electronic and paper applications.

6) Take the open-ended/qualitative data on what school districts consider to be important in hiring a teacher and compare to the actual selection tools districts are using in a case study analysis to determine if what they say is important is measured or aligned in the selection tool.

7) Since 93% of respondents report utilizing locally created interview questions, it would be interesting to do a document analysis/case study analysis in those school districts utilizing such tool to see if there is any research or validity behind this type of tool.

4.4 DISCUSSION AND RECOMMENDATIONS

The purpose of this study was to investigate if public school districts in Pennsylvania were utilizing commercial teacher selection tools, and if so, were these tools linked to the qualities of effective teachers? The study revealed that many school districts were utilizing electronic employment technologies as credential warehouses but not for interviewing purposes. Interestingly enough, many school districts that reported utilizing an on-line warehousing database also indicated that they were still accepting paper applications. Seventy-one percent of the districts in this study used an on-line electronic warehousing system to search for applicants. Forty-eight of the districts were still accepting paper applications. If the purpose of the electronic warehousing databases, (as indicated by the research in Chapter 1), was to reduce collecting, storing and sorting paper credentials in order to streamline human resource offices in schools, then one must wonder, “Why are school districts still accepting paper applications?” “Is accepting both formats enhancing or complicating the hiring process?” As a current supervisor of a human resources department, it is the opinion of the researcher, that accepting both formats has complicated the process and created serious problems with records retention. In addition, for the districts accepting electronic applications exclusively, the researcher suspects that these commercial tools have streamlined the process, with storage and sorting made easier and opening up a broader and more diverse pool to the district. However, in another way they have complicated the process by opening up a larger pool within which districts must fairly sort and

condense in order to bring a more manageable pool to the interview table. Since districts must pay annual fees for this service, impoverished districts may be at a clear disadvantage in competing with more affluent districts for the best teachers in the pool.

In regards to teacher selection tools, the survey results indicated that very few school districts utilized a commercial, researched-based or proprietary teacher selection tool. This low usage number for formal selection tools, could be a result of the large pool of candidates in Pennsylvania. The teacher market oversupply, although desired by many school districts nationally, presents unique hiring problems in many school human resources offices in Pennsylvania. Sorting and storing thousands of applications, choosing criteria to narrow the large pool of applicants and ultimately, putting a hiring process in place to hire the best can be daunting in a saturated market. In addition, the researcher questions the fairness in the teacher selection process, with some indication in this study mirroring the literature on factors that influence the teacher selection process: applicant is a resident of the district, applicant is an alumnus of the district, and applicant knows a school board member. Although, the lowest scores were in the three criteria that are not identified as qualities of effective teachers, it is surprising that school districts chose them at all.

It is also important to note that although it is clear that the Commonwealth of Pennsylvania has a market over-supply, the same may or may not be the case across the nation. The national perspective on teacher supply (as indicated in section 1.3.2) is very dependent on region.

Aside from market supply, there appeared to be no pattern in cross-tabulations of what districts considered to be the most important in hiring a teacher between districts that used a commercial selection tool versus districts that developed their own interview questions, the researcher has no evidence for or against the presumption that a commercial or proprietary teacher selection tool is any better at finding or hiring a high quality teacher than using locally created interview questions.

However, the results of this study do help to illuminate the complexities of the process in identifying quality teaching in the hiring process. Further study of teacher selection tools is needed if administrators charged with this responsibility are to hire quality teachers for all students. With the onset of electronic employment technologies, it is clear that the teacher selection process could change drastically over the next decade. These changes must be founded on research-based practices.

APPENDIX A

PRE-EMPTIVE INVITATION LETTER

Dear Member,

As you may be aware, electronic data warehousing systems (e.g., PAREAP, PA-Educator.net) and commercial teacher selection tools are being utilized more frequently across the state of Pennsylvania in the hiring process. A fellow PASPA member, and Doctoral Student at the University of Pittsburgh, is conducting a research study on the types of teacher selection tools utilized in Pennsylvania Public Schools. If you are a Public School administrator with the primary responsibility of overseeing the hiring of teachers, you will be invited to participate in this research by completing a brief on-line survey. By completing the survey, you will also be given access to the results.

Please look for this survey through our E-Alerts in the next few weeks, I would appreciate your participation.

Sincerely,

Dr. James Antis, Executive Director, PASPA

APPENDIX B

INVITATION LETTER

Dear PASPA Member of a Public School District,

In May, you received an e-mail from me about a survey on **Teacher Selection Tools in Pennsylvania**.

A fellow PASPA member, and a Doctoral student at the University of Pittsburgh, is conducting a research study on teacher selection tools in **Pennsylvania public schools**. If you are the administrator in a **Pennsylvania public school** with the **primary responsibility of overseeing the hiring of teachers** in your district, we ask you for your assistance by taking about 15 minutes to complete an anonymous on-line survey about your district's teacher selection process. If you are not the primary administrator charged with the task of hiring teachers, then we ask that you forward this e-mail on to that individual in your school district.

If you are willing to participate, the questionnaire will first ask some very general demographic information about you and the context of your district. Then, the questionnaire will ask you about specific hiring tools utilized in your school district. There are no foreseeable risks associated with this project. This survey is entirely anonymous, and your responses will not be identifiable in any way. All survey data will be compiled in a confidential manner through "Survey Monkey". Your participation is voluntary, and you may withdraw from the study at any time.

This information will be useful to our organization to inform hiring practices across the state of Pennsylvania. We appreciate you taking the time to assist in this research. This study is being conducted by Ms. Tracy L. Vitale, who can be reached at 724-452-6040, ext. 216, if you have any questions.

To take the survey, please click on the following link:

http://www.surveymonkey.com/s.aspx?sm=5K8EQZD8Iz7Pn_2fvCXYMPig_3d_3d

Sincerely,

Dr. James Antis, Ed. D.
PASPA Executive Director

APPENDIX C

SURVEY ON TEACHER SELECTION TOOLS IN PENNSYLVANIA

Thank you for participating in this questionnaire regarding teacher selection. Your information will help to inform the hiring practices in school districts in the state of Pennsylvania. This survey should take approximately 15 minutes. Your identity and school district is completely anonymous. The confidentiality of your answers is assured.

Please click done after finishing the last question. Once you click done, the survey will automatically and anonymously be sent to a secure internet site. Thank you very much for participating in this research.

1) What term best describes your professional position?

- Superintendent
- Assistant Superintendent
- Director of Human Resources
- Other _____

- 2) Are you the primary person that oversees the hiring process for the school district?
- Yes
 - No (If no, please stop taking the survey and refer it to the person charged with this responsibility in your district.)
- 3) How many years have you been in this position?
- 1-5 years
 - 6-10 years
 - 11-15 years
 - 16 + years
- 4) How many years have you been in the field of education?
- 1-5 years
 - 6-10 years
 - 11-15 years
 - 16+ years
- 5) What is your gender?
- Female
 - Male

- 6) What is the context of your school district?
- Urban
 - Rural
 - Suburban
- 7) What region do you consider your school district in Pennsylvania?
- North West
 - South West
 - Central
 - North East
 - South East
- 8) What is the total student enrollment in your district?
- 1-900
 - 1,000-3,000
 - 3,001-5,000
 - 5,001-6,999
 - 7,000+

- 9) What is the total number of teachers in your school district (this number includes full and part time)?
- Less than 100
 - 100-200
 - 201-300
 - 301-500
 - 501-899
 - 900+
- 10) On average, my school district seeks to fill the following number of teaching position each year:
- 1-5
 - 6-10
 - 10-20
 - 21-30
 - 31+
- 11) The process for selecting teachers in my district is primarily:
- centralized** with the central/district office making most of the decisions about hiring.
 - decentralized** with building level principals making most of the decisions about hiring.
 - a combination of both of the above

12) Who is on the interview team that recommends a finalist(s) to the School Board? (Check all that apply).

- Superintendent
- Other Central Office Personnel (e.g., Assistant Superintendent, Business Manager, Director)
- Principal
- Assistant Principal
- Teachers
- Other _____(please specify)_____

13) My district accepts the following types of applications: (Check all that apply.)

- Paper
- On-line (e.g., PA-Educator.net)
- Electronic (e.g., e-mail)
- All of the above

14) Does your district currently utilize **PA-Educator.net** in the teacher selection process?

- Yes (If yes, computer branches to #15 and #16)
- No (If no, computer goes to #17)
- I do not know what this is (computer goes to #17)

15) Do you feel this tool is time efficient?

- Very Efficient
- Efficient

- Somewhat Efficient
- Not Very Efficient
- Unsure

16) Do you feel this tool helps to hire the best candidates?

- Very Helpful
- Helpful
- Somewhat Helpful
- Not Very Helpful
- Unsure

17) Does your district currently utilize **PAREAP** in the teacher selection process?

- Yes (If yes, computer branches to #18 and #19)
- No (If no, computer goes to #20)
- I do not know what this is (computer goes to #20)

18) Do you feel this tool is time efficient?

- Very Efficient
- Efficient
- Somewhat Efficient
- Not Very Efficient
- Unsure

19) Do you feel this tool helps to hire the best candidates?

- Very Helpful
- Helpful
- Somewhat Helpful
- Not Very Helpful
- Unsure

20) Does your district currently utilize **Teacher Insight** by Gallup in the teacher selection process?

- Yes (If yes, computer goes to #21 and #22)
- No (If no, computer goes to #23)
- I do not know what this is (Computer goes to #23)

21) Do you feel this tool is time efficient?

- Very Efficient
- Efficient
- Somewhat Efficient
- Not Very Efficient
- Unsure

22) Do you feel this tool helps to hire the best candidates?

- Very Helpful
- Helpful
- Somewhat Helpful
- Not Very Helpful
- Unsure

23) Does your district currently utilize **Teacher Perceiver** by Gallup in the teacher selection process?

- Yes (If yes, computer goes to #24 and #25)
- No (If no, computer goes to #26)
- I do not know what this is (Computer goes to #26)

24) Do you feel this tool is time efficient?

- Very Efficient
- Efficient
- Somewhat Efficient
- Not Very Efficient
- Unsure

25) Do you feel this tool helps to hire the best candidates?

- Very Helpful
- Helpful
- Somewhat Helpful
- Not Very Helpful
- Unsure

26) Does your district currently utilize **Interactive Voice Response** by Gallup in the teacher selection process?

- Yes (If yes, computer goes to #27 and #28)
- No (If no, computer goes to #29)
- I do not know what this is (Computer goes to #29)

27) Do you feel this tool is time efficient?

- Very Efficient
- Efficient
- Somewhat Efficient
- Not Very Efficient
- Unsure

28) Do you feel this tool helps to hire the best candidates?

- Very Helpful
- Helpful
- Somewhat Helpful
- Not Very Helpful
- Unsure

29) Does your district currently utilize **Interactive Computer Interview System** by Ebmeier in the teacher selection process?

- Yes (If yes, computer goes to #30 and #31)
- No (If no, computer goes to #32)
- I do not know what this is (Computer goes to #32)

30) Do you feel this tool is time efficient?

- Very Efficient
- Efficient
- Somewhat Efficient
- Not Very Efficient
- Unsure

31) Do you feel this tool helps to hire the best candidates?

- Very Helpful
- Helpful
- Somewhat Helpful
- Not Very Helpful
- Unsure

32) Does your district currently utilize **STAR Teacher** by Haberman in the teacher selection process?

- Yes (If yes, computer goes to #33 and #34)
- No (If no, computer goes to #35)
- I do not know what this is (Computer goes to #35)

33) Do you feel this tool is time efficient?

- Very Efficient
- Efficient
- Somewhat Efficient
- Not Very Efficient
- Unsure

34) Do you feel this tool helps to hire the best candidates?

- Very Helpful
- Helpful
- Somewhat Helpful
- Not Very Helpful
- Unsure

35) Does your district currently utilize **The Teacher Quality Index** by Stronge & Hindman in the teacher selection process?

- Yes (If yes, computer goes to #36 and #37)
- No (If no, computer goes to #38)
- I do not know what this is (Computer goes to #38)

36) Do you feel this tool is time efficient?

- Very Efficient
- Efficient
- Somewhat Efficient
- Not Very Efficient
- Unsure

37) Do you feel this tool helps to hire the best candidates?

- Very Helpful
- Helpful

- Somewhat Helpful
- Not Very Helpful
- Unsure

38) Does your district currently utilize **locally created interview questions** in the teacher selection process?

- Yes (If yes, computer goes to #39and #40)
- No (If no, computer goes to #41)
- I do not know what this is (Computer goes to #41)

39) Do you feel this tool is time efficient?

- Very Efficient
- Efficient
- Somewhat Efficient
- Not Very Efficient
- Unsure

40) Do you feel this tool helps to hire the best candidates?

- Very Helpful
- Helpful
- Somewhat Helpful
- Not Very Helpful
- Unsure

41) Any other teacher selection tools utilized by your district?
 (If yes, please explain) _____

Are any of these items considered, in the teacher selection process in your district. . .

	Yes	No	Don't Know
42. The applicant is an alumnus of the district?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
43. The applicant resides in the district.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
44. The applicant has strong verbal ability.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
45. The applicant knows a School Board member.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
46. The applicant's knowledge of teaching and learning.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
47. The applicant has a Pennsylvania teacher certification.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
48. The applicant has an advanced degree.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
49. The applicant's content knowledge.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
50. The teacher preparation program the applicant has undergone to receive certification.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
51. The applicant's knowledge level about student achievement and growth.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
52. The applicant's demonstrated success in student achievement and growth.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
53. The applicant's knowledge of effective classroom practices.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
54. The applicant's level of knowledge with classroom pedagogy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
55. The applicant's prior teaching experience.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

b. **Branched/Conditional questions** - If yes to any in #42-55, to what extent does the item influence the selection process.

A lot	Some	Very Little	Not At All	Unsure
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The applicant is an alumnus of the district.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The applicant resides in the district.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The applicant's verbal ability.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The applicant knows a School Board member.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The applicant's knowledge of teaching and learning.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The applicant has a Pennsylvania teacher certification.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The applicant has an advanced degree.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The applicant's content knowledge.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The teacher preparation program the applicant has undergone to receive certification.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The applicant's knowledge level about student achievement and growth.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The applicant's demonstrated success in student achievement and growth.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The applicant's knowledge of good classroom practices.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The applicant's level of knowledge with classroom pedagogy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The applicant's prior teaching experience.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

70. From the following list, please rank order the top three most important to your district when hiring a teacher (1, 2, 3 – (with 1 being the most important).

The applicant is an alumnae of the district.
The applicant resides in the district.
The applicant's verbal ability.
The applicant knows a School Board member.
The applicant's knowledge of teaching and learning.
The applicant has a Pennsylvania teacher certification.
The applicant has an advanced degree.

The applicant's content knowledge.
The teacher preparation program the applicant has undergone to receive certification.
The applicant's knowledge level about student achievement and growth.
The applicant's demonstrated success in student achievement and growth.
The applicant's knowledge of effective classroom practices.
The applicant's level of knowledge with classroom pedagogy.
The applicant's prior teaching experience.

71. Please list others items that your district may be looking when hiring a teacher.

18. Is there anything else that you would like the researcher to know about teacher selection in your district?

Thank you for your valuable time in completing this survey!

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