

ACT AND GPA AS PREDICTORS OF PPST SCORES FOR PROSPECTIVE  
TEACHERS AT UW-STOUT

By

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**ABSTRACT**

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<u>ACT and GPA as predictors of PPST scores for prospective teachers at UW-Stout</u>			
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A hot topic in recent books and education journals is the need to ensure that today's schools are filled with qualified staff in elementary and secondary classrooms. Many states have enacted legislation to strengthen teacher recruitment, education, certification, and professional development. The U.S. Department of Education reported that public schools will need 2.2 million new teachers over the next seven years. The last two decades have provided much insight and understanding into the profession of teaching. There is a need for increased incentives to entice new trainees into quality teacher preparation programs.

The time is urgent to get teachers trained and in the classroom. There are a number of coordinated large scale studies that provide a clearer picture of the national situation and increase the potential for linking features of teacher preparation programs with the outcome data such as scores on exams. Tests often play an important role in what candidates study and their licensure systems.

In summary, the two predictor variables ACT and GPA were not found to be statistically significantly correlated with each other. However, the three criterion variables; the math, reading, and writing sub-scales of the PPST were all found to be statistically significantly correlated with each other. All three of the criterion variables are determined to be statistically significantly correlated with ACT scores. Conversely, none of the three criterion variables were shown to be statistically significantly correlated with GPA.

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## **CHAPTER I**

### **Introduction**

A hot topic in recent books and education journals is the need to ensure that today's schools are filled with qualified staff in elementary and secondary classrooms. Since 1995, many states have enacted legislation to strengthen teacher recruitment, education, certification, and professional development. (Goals, 2000 ). The U.S. Department of Education reported that public schools will need 2.2 million new teachers over the next seven years. They will also enroll the highest number of students ever to attend public schools. This report also stated that 7% of the teachers would retire from teaching each year. Another impact on the future of education is that after completing the preparation for teacher training, 30% are deciding not to continue in their field and chose to pursue higher paying positions outside education. These statistics make policy decisions in education of extreme importance (Palaich, 2000).

The Center for the Study of Teaching and Policy has suggested innovative ways to help reduce this impact through the use of alternative certification programs. In the early 1990's, most people who wanted to teach in the public school system needed an undergraduate degree in teacher preparation. Today most states have a post baccalaureate alternative route, which addresses the shortages in math and science. This report also suggested these positions may

need to be filled by an educated professional who does not have a teaching degree in teacher preparation. Institutions

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are attempting to project the impact and need that exists for trained education majors (Wilson & Floden, 2001).

The last two decades have provided much insight and understanding into the profession of teaching. The application of school improvement efforts are of significant importance in meeting the demand for higher student performance. There are however, differences between the nation's educational goals and student achievement. While the National Commission on Teaching has focused on the qualifications of teachers and their preparedness as teacher candidates, there is a simultaneous need for increased incentives to entice new trainees into teacher preparation programs. Pursuing quality teachers who can handle the various responsibilities of the job presents many challenges. Each of the teacher roles are important and difficult to complete simultaneously. The challenges to improving education programs are enormous, while a qualified teaching force is an unquestionable necessity (Wilson & Floden, 2001).

The need is urgent to get quality teachers trained and into the classroom. The 105<sup>th</sup> Congress highlighted teacher preparedness and initial teacher assessment as critical improvement areas. The Educational Testing Service (ETS) has been a leader in educational research and the development of computer based

testing. It designs and administers achievement, occupational, and admissions tests. ETS annually administers 11 million tests in the United States (Barton, 1999). Knowledge and skill assessment are a key to the development of quality teachers.

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The test that is most commonly used for admission to universities is the American College Test or ACT. The Pre-professional Skills Test (PPST) is required for entrance into the professional level of teacher education programs.

A report by the U.S. Department of Education and the Office for Educational Research, suggests a number of coordinated large scale studies could help provide a clearer picture of the national situation and increase the potential for linking features of teacher preparation programs with the outcome data such as scores on exams. Tests often play an important role in what candidates study and their licensure systems. Candidates work hard to prepare for licensure and practice (Darling-Hammond, 1990). Panels may typically determine the knowledge and skills that are critical for effective performance. Emphasis on knowledge and skills must be mastered prior to entering education programs.

State of Wisconsin entrance requirements for teacher preparation programs include a 2.5 GPA on at least 40 semester hours of credit and minimum scores on the PPST (a minimum of 175 in reading, 174 in writing, and 173 in mathematics). It is possible to waive the GPA or PPST requirement for up to 10% of the entering class of teacher education students (PPST, 2001).



If a correlation exists between PPST, ACT and GPA of students, there may be potential to predict future success rates. Redirecting a potential teacher trainee into a different major if there is not adequate reason to expect passing PPST scores, may prevent the clogging of the system for the much needed education majors. These results would also help determine if remedial assistance is a viable option.

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### **Statement of the Problem**

With the growing national teacher shortage, it becomes more important than ever to attempt to make teacher preparation as efficient as possible. Potential education majors at UW-Stout could benefit from knowledge of the ability to predict PPST sub-scale scores from either or both ACT scores or GPA.

### **Purpose Statement**

The purpose of the study is to determine the feasibility of using student ACT scores and university GPA as predictors of success on the required PPST sub-tests. The ability to predict student success or failure on the PPST at UW-Stout, would allow teacher educators and program administrators to identify individual students in need of remedial instructions at the earliest opportunity.

### **Null Hypotheses**

This study will test the following null hypothesis:

HO-1 There is no statistically significant correlation between ACT scores and GPA for education majors at UW-Stout.

HO- 2. There is no statistically significant correlation between any of the PPST sub-scales for education majors at UW-Stout.

HO-3 There is no statistically significant correlation between Act scores and any of the PPST sub-scales for education majors at UW-Stout.

HO-4 There is no statistically significant correlation between GPA and any of the PPST sub-scales for education majors at UW–Stout.

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## **CHAPTER II**

### Review of Literature

#### **Introduction**

The review of literature addresses both the extent of current teacher shortages and developing alternatives to teacher preparation within traditional teacher training programs. Concern for quality indicators to determine student progress is also discussed. The impact of these indicators on the progress of students at UW-Stout was of particular interest in this study. It seems plausible that if the research indicates useful projected outcomes on PPST from GPA and ACT scores, then teacher preparation can become more efficient and effective.

High School students have many career options available to them. Choosing one career over another is all part of the decision making process. This process is the same no matter what career path is chosen. Any career plan may change midstream while others continue in the direction of a particular career path for various reasons. There are a number of progressive possibilities that may propel students in the direction of teaching as a career.

One major reason for choosing a career in education is that teachers feel a mission in their jobs. They are “called” to serve and find extreme satisfaction in helping others. There is a joy that comes from teaching and helping students grow and develop their fullest potential and self esteem. Every teacher may have a goal of creating a positive change in the process of a child’s development.

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To lead students in the decision making process and to care about society as a whole is another reason people choose to be educators. The teacher’s role may be to help students create a positive impact in the community. They may be there to serve as an educational leader of knowledge. To strive to learn and encourage the learning process as well as create a positive learning environment are both important. Teachers are also prepared to provide opportunities to think and continue to challenge students with interesting materials that are relevant and have meaning to them.

Being an effective teacher is not easy. It does take hard work, however many students are ready to accept these challenges. There are expectations asked of each teacher and the majority are prepared for the reality of not being paid high salaries for the multitasked responsibilities. There is more driving them than financial rewards. Most know full well that going into education will not be a high paying monetary career.

Strong teachers go beyond their own enthusiasm for their subjects; they convince their students that learning has an inherent value. There is compassion for the subject being taught and it is conveyed in numerous ways to the students. This passion is another reason for someone to choose the lifestyle of a teacher. There are many other individual

reasons why people would dedicate their life to the helping professions. Just as someone else chooses a career in nursing or law, the reasons are varied.

While this review of literature will address the related areas of insufficient numbers of teacher candidates, and teacher attrition, the primary focus will be the clog that occurs in the teacher training pipeline when teacher trainees are unable to demonstrate minimal competency through either sufficient GPA or passing PPST scores or both.

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### **Teacher shortage/profiles**

The need for elementary and secondary teachers has grown in the United States. It is estimated that there are 3.1 million educators, 2,666,034 of whom are teaching in public schools . Another 4,000 educators teach in private schools (National Center for Education Statistics, 1997). These estimates show an increase of about 17 % since 1988. The number of teachers is projected to increase by 1.1% annually to a total of 3.46 million by the year 2008 (Gerald &Hussar, 1998). The number of elementary school teachers will increase to 2.05 million, while secondary school teachers will increase to 1.19 million by 2008. Gerald and Hussar (1998) also reported that student enrollments are projected to increase to 54.27 million during this same time period.

Research shows some renewed interest in teacher shortages, but now with some added concerns. Many policymakers and researchers estimate that school districts will need to hire about 200,000 teachers annually over the next decade to keep pace with the increase in student enrollments. More than two million additional teachers may be needed to replace the growing number of teachers projected to retire in the next 10 years (Fideler & Haselkorn, 1999). The projected demand for teachers may not be able to keep

pace with the projected supply of teachers available over the next decade. There are a number of obstacles that stand in the way of meeting our nation's need for a high quality teaching force. Seeking enough teacher trainees, ensuring they are well qualified, and matching them to subjects for which they are adequately prepared could all prove to be problematic. Findings from this research and their implications and applications to school improvement could become of extreme significance during this shortage.

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### **Supply and demand**

The shortage of quality teachers is of most urgent concern in large urban areas and rural areas. Due to difficulties with recruitment and retention of new teachers, 7.7% of the urban and rural schools districts reported a shortage of qualified teachers. These districts also tend to have higher levels of poverty along with the newest teachers with the least or no experience. They also face the highest rates of out-of-field experience (National Center for Education Statistics, 1995). While school districts are experiencing shortages of qualified teachers all across the country, “shortages are most acute in Southern and Western states, urban and rural schools, and in mathematics, science, English as a second language, and special education” (Curran, & Canada, 2000). The most common reasons identified were low salaries, lack of support for first year teachers, and lack of opportunity for advancement, as well as poor retirement plans. Urban and poor communities are projected to see the greatest need for teachers, with more than 700,000 additional teachers needed in the next decade. These same communities are also faced with a concern for retaining teachers who are attracted to wealthier suburban

districts which pay higher salaries. These facts make it clear that there is an uneven distribution of qualified teachers.

### **Qualified teachers in the classroom**

Another barrier to quality teaching is the fact that teachers are being asked to teach subjects for which they are inadequately prepared. A National Center for Education Statistics report identified almost one third of all high school math teachers as having neither a major nor minor in math. Similarly almost one fourth of all high school English

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teachers have neither a major nor minor in English. These problems are escalated in schools with large numbers of low-income and minority children.

The public believes that quality teaching and holding students accountable are critical elements of the education process. Polls show support for these efforts because the public believes that high-quality teachers improve student learning and school performance (NFTAC, 1997). Staffing a classroom with prepared teachers who have adequate content knowledge related to their teaching assignment is vital. A study conducted in 1998 for Education Week, found that parents, taxpayers, and educators view teacher qualifications as the second most important indicator of how their schools are performing, second only to school safety (Beldon, 1998).

Staffing the nation's classrooms with qualified teachers who have the knowledge base related to the subjects they are teaching is one of the grounding principles for improving teacher quality. In the U.S., teacher attrition is the largest single factor driving the demand for additional teachers (Boe, Bobbit, & Cook, 1996). Research shows that since the 1970's, 25 % of the students prepared to teach never entered the teaching

profession. A teacher follow-up survey compiled by the National Center of Education statistics (National Center for Education Statistics, 1997) showed a 5.6% attrition rate for teachers in public schools and a 12.7% attrition rate for teachers in private schools.

### **Profile of teachers**

An interesting 1999 study for the American Association of Colleges for Teacher Education, (AACTE, 81996) found that teacher education graduates with higher standardized test scores were less likely to teach, while those that did chose to teach

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were more likely to leave the profession early. Women were generally more interested in the profession than men. They were also more inclined to remain in the profession and also more likely to teach in an elementary school. These characteristics of a teacher profile indicate where the profession is probably headed without some intervention.

There is an imbalance in both gender and racial makeup of the nations teaching force. Females comprise three-fourths of the staff, however that number is less in the upper grades. Nine out of ten teachers are white. There is a strong need for males in elementary schools and the need for minority teachers has reached a crisis level (Archer, 1997). There appears to be a significant difference between the number of teachers of color and students of color (Lewis, 1996). Black, Hispanic, Asian American, and Native American role models for both the minority students and majority students falls well short of the changes in the student population. By 2010, forty percent of Americans between the ages of 5 and 19 will be Latino, African American, Asian American or Native American. These students pose a unique challenge for teachers because of their

social and economic backgrounds. They include high risk factors such as poverty, limited English proficiency and low parent education levels (Archer, 1997).

### **Teacher Attrition**

Even though there are more teachers being trained to meet the increased enrollments and demands, many lose interest in their chosen fields for various reasons, including low salaries, being unprepared for the realities of the classroom, and difficulty with certification exams (Curran & Canada, 2000). It is difficult to attract top students into teaching when salaries are between 50-70% lower than jobs in other professional areas

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. Being unprepared for the realities of the teaching profession, like discipline, dealing with difficult parents, and being given the most challenging students are also issues of doubt and concern that increase the need for additional teachers.

Only 60% of trained teachers actually enter the teaching profession. Many potential teachers decide not to enter teaching after completing their training due to higher pay and status, better working conditions, and career advancement opportunities in corporate positions of companies. The Education Commission of the States suggested that well-qualified teachers should be a goal in improving teacher quality. Higher pay, status, and advancement are not progressing as fast as some many hoped, thus more reality in screening may be required. Screening candidates entering teacher preparation programs and preparing students to teach to achievement standards are two ways to aid this process. The education training programs need to prepare students in their major field of study in the most efficient way.



Teacher training programs are already being challenged with an increased demand for entry level teachers. Although the increased demand is easily predictable from the increased number of teacher retirements and increased enrollments, exact estimates are still difficult to predict. The shifts in the teaching labor force from an older to a younger force will dramatically impact education issues. Budgets from teacher salaries and fringe benefit packages are usually 50-60% of education budgets. As older teachers are replaced by younger teachers, policy makers and school boards will have some relief from the higher teaching salary costs.

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The national goals of President Bush and state governors have shown concern for public and private education. There are a number of policy initiatives that impact the future of education. One initiative of President Bush is to upgrade the nation's teaching force. Suggestions are to create alternative entry routes for new teachers, along with creating a national system for certifying teachers at a higher level of teaching competence. The goal of retaining a teaching force of the highest possible quality is also a goal of the present administration. The high expectations for student achievement and the shortage of teachers has produced an urgent need to recruit, retain, develop, and train high quality teachers (Palaich, 2000). The quality of education depends on the qualifications of the individuals who enter and stay in the profession. Addressing the dramatic changes in the teacher labor market and laying the basis for the development of policies that will be necessary to move through the many challenges in teacher education are necessary to meet the teacher shortage crisis.

## **Alternative programs**

Alternative teaching programs are a controversial subject and the jury is still out on whether or not they are effective options for the field of education. The supply of teachers has actually grown over the past ten years. However, the current demand for teachers indicates that the supply has simply failed to increase proportionately over this same time period. The demand for new teachers varies by district depending on local changes in population, teacher retirements, immigration rates and attrition as well as teacher salaries. One suggestion to help meet the increased need for teachers is through alternative teacher preparation programs. If we want to retain new teachers, particularly

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those teaching in inner city schools, we must pay them well, introduce them to the profession, and support them through the challenges of the beginning years. (Boe & Gifford, 1997). There must also be proper staff development opportunities to help them become successful in the profession.

In the last decade, alternative teacher certification has produced many new programs that provide preparation and training for a career in the teaching profession. Most of these programs are efforts that are coordinated with state departments of education, the colleges and universities that train the teachers, and the districts that hire them. Listed below are some strategies for reducing the teacher shortages through alternative programs designed to retain the teacher supply.

1. Recruitment of individuals from the private sector.
2. Preparing new teachers through mentoring programs.
3. Collaborative projects with large companies.

4. National Job Banks
5. Alternative Certification Programs.
6. On the Job training projects.
7. Bonus incentives and loan forgiveness programs.

Recruiting prospective teachers from the private sector can be a challenge. Forty - two percent of the 1993-1994 teachers hired, finished a college preparation program but had not taught previous to that time. There were twenty four percent of the first time teachers who had been doing something other than going to college in the years previous to the time of employment.(Curran,& Canada, 2000). To help fill the void for much

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needed teachers, Los Angeles hired 1,500 new teacher recruits from the military, retail sales and downsized companies. They were screened carefully and given an intense 2 year program including a strong support system. After five years, 80% of the recruits from this project remained in the program and are still in the teaching profession (Streisand & Toch , 1998).

In a study conducted by the National Education Association, NEA, less than half of the teachers hired in the last nine years participated in some type of induction program. There is an increased interest in giving attention to induction of new teachers as a strategy to keep them and encourage competent teachers to stay and thrive in the profession (Archer, 1999). An assistant professor from the University of Georgia stated that policy makers must make teacher induction programs and mentoring a central part of their reform efforts. Well respected, well supported, and well paid professionals require minimal efforts for retention (Archer, 1999).

Other examples of mentoring programs that show some promise can be found in New York, as well as in Florida and California. One initiative provides \$400,000 to a university, school system, and a teacher union team. The project uses a veteran teacher to mentor a new teacher through the first years in the profession. These programs are designed to reflect the experience of the veteran teacher and help inexperienced teachers practice appropriate methods for some of the more difficult urban schools. The purpose of this project is to increase the pool of effectively prepared teachers and reduce the attrition rates in urban schools (Lynch, 1991).

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In 1999 the Education Department under the direction of Richard W. Riley created a national job bank and clearinghouse for teacher recruitment. It provides teachers with information on national vacancies and helps districts find potential new hires (Bradley, 1999). There are also on-line recruiting web sites that aid in the process of finding these much needed replacements. The City of New York is projected to have 8,000 teaching positions that need to be filled in the fall of 2001. Even with these added technology support systems, there just are not the numbers available to fill the many positions already surfacing that urgently need to be filled.

The federal government has launched a major effort to develop and test new ways to operate and organize schools. A number of policy issues are being planned that would work towards upgrading the teaching force. One of these programs is the alternative entry route for new teachers. Alternative teaching certification programs vary by state and may be designed to serve different purposes in each area of the country. The

alternative certification process includes holding a bachelors degree in the subject to be taught and achieving a passing score on a certification test, completing an intense teacher training program and completing a supervised teaching internship. The overall purpose of this program is to certify candidates who may have the basic subject matter competencies but lack the formal teacher preparation training.

According to the Digest of Educational Statistics, 2000, over forty states are experimenting with alternative certification programs. From 1983 to 1996, 50,000 teachers received training and certification through alternative programs. Last year three times as many teachers received alternative certification as were certified 10 years ago.

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Troops to Teachers is a program alternative that prepares retired military personnel and mid-career professionals to become teachers. The Teach for America alternative program has moved 5,000 college graduates with no teacher education classes into teaching positions in needy rural and urban areas since 1989 (Bradley, 1999). Another program called Recruiting New Teachers, Inc. is also designed to assist people who wish to make a mid-career move into teaching. These programs may have some promise for increasing the total number of teachers available.

The alternative fifth-year teacher certification option may be a plausible consideration for someone who has already completed a baccalaureate degree from a regionally accredited institution in a field other than teacher education. These students have the undergraduate certification in one field and want to change to another field at the masters level. It provides an option at the graduate level for the training needed to become a teacher.

Some school districts are offering incentive packages to teachers who agree to stay in a district for one to three years. These package deals may vary from \$1,000 to \$20,000 signing bonuses. In Massachusetts there were 5,000 requests for information on this concept and about 600 applications will be processed for this consideration (Bradley, 1999). There are also programs to offer loan forgiveness options if individuals enter and continue in the teaching profession in low income areas under the Higher Education Act of 1965 with amendments added in 1998.

The logic behind alternative teacher certification programs is to ward-off teacher shortages by providing other routes to certification. Understandably, there is criticism

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by many educators that believe lowering the qualifications for teachers is not a viable solution for addressing the teacher shortage. The National Commission on Teacher & America's Future report has as their goal to provide every student in America access to the most competent, caring, and qualified teachers by the year 2006 (NCTAF, 1996). They also stressed that some teacher qualifications are much less than acceptable throughout the nation.

Public education in the United States is the responsibility of each state rather than a federal obligation. States are free to set the eligibility, qualifications and certification for all levels of teachers through the high school level. (Kern , 1998) noted that teacher certification is one of the most important ways to insure that schools have an acceptable and appropriate quality level for their teachers. Upgrading the quality of teachers and the teaching profession requires upgrading the quality of teacher's jobs.

In a study conducted by the National Commission on Teaching and America's Future (NCTAF, 1996), it was discovered that nearly one fourth of the new public school teachers lack the qualifications for their jobs. This information was gathered over two years and included the findings from almost 200 studies. In 1994 many new teachers had not completed licensing requirements in their main teaching areas. The findings included the controversial fact that 11% did not have any license and 16% held emergency, temporary, or alternative licenses. Veteran high school teachers who had less than a minor in their teaching area included 21% of the total population. Streisand and Toch (1998) also stated that many districts are reducing certification standards. Some districts are allowing teachers to teach science without having a major in biology or chemistry.

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There were 29,000 individuals who were employed to teach with emergency credentials and many of those had no teacher training or experience, whatsoever.

The critics of alternative approaches say that too many retired teachers and burned out executives will be attracted to teaching. They may lack the most recent knowledge in their fields and lack the computer skills that are considered important for effective teaching (Bruno, 2000). Speaking on the issues in education, Bruno also states that one important contribution of alternative preparation programs has been the success at attracting ethnic minority candidates and men into the teaching profession. This fills a much needed void in having male and minority role models in the classroom.

Competency requirements are established to help ensure that the minimum standards are met before someone is allowed to teach in the classroom (Darling-Hammond & Berry, 1988). In the last decade, there have been a number of policies that have affected teacher

certification requirements. Subject matter competencies and training are required to assure effective teaching strategies.

Competition might ultimately improve all teacher education programs. Alternative options for the teacher shortage may help to change the dramatic need for teachers. Not long ago, the U.S. Postal Service had a monopoly on delivery of the mail. It became sluggish in delivery and production to deliver messages in faster more efficient methods. The involvement of innovative services of other companies like Federal Express produced more competition. The original delivery service was forced to make changes and improve. There is a similarity here with what may happen with our educational system to make it competitive as well. Some of the alternative certification programs

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may help make the overall education of new teachers better than previously expected. There would be a very positive result if the competition raised the standard for all teacher preparation programs. While the verdict is still waiting, many educators are becoming increasingly nervous.

The implications for the future of the American education system are associated with the supply and demand of teachers. Concern for quality education is an issue. Some state governments may begin to make teacher training programs less rigorous in order to speed the completion time for teacher preparation. Is it possible that standards for admission may be lowered? In the late 1980's, many states required standardized tests such as the National Teacher Examinations and Praxis be passed by students to meet state certification requirements. Requirements such as being a U.S. citizen, minimum number of credits and moral character were also considered in determining a potential



candidate for the teaching profession. Critics of alternative teacher preparation programs fear that these programs could change the total quality of the teaching force, by possibly relaxing the requirements for certification.

Is there a need to redesign the system for teacher certification? The Thomas Fordham Foundation states that teacher certification systems in most states reflect the worst of both worlds: by keeping highly qualified people out and allowing poorly-qualified people through the system (Fordham, 1999). They state that relying upon entrance exams into colleges of education and later into the teaching profession amounts to setting hurdles for the “best and brightest” thus preventing them from even entering. They suggest that individuals who know their subject matter well, and know how to convey it

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to children and have a strong character, should be allowed to teach. In New Jersey, twenty percent of the beginning teachers go through alternative certification programs. Studies in Texas and California have found that alternatively certified teachers tend to score as well as teachers with education degrees on licensing tests. They also tend to stay on the job as long or longer than the traditionally trained teachers (Streisand & Toch, 1998).

In a 1990 study by Darling-Hammond on the quality of teachers in alternative route programs she found knowledge of the interns who had lower job satisfaction and possible inadequate preparation led to early attrition. These problems appear to be alleviated when adequate pre service preparation is incorporated with intensive on-the-job supervision. Darling-Hammond feels that subject matter is important “up to a point.”

Relationships between coursework and teacher effectiveness and high quality and clinical learning experiences are invaluable (Darling-Hammond, 1991).

Some alternative programs are attracting high quality, well educated, talented, enthusiastic and life experienced adults to the teaching profession (Feistritzer, 1998). There are however some people who feel that recruitment, preparation, and retention of teachers is much more complex than policymakers originally thought. Due to the great variety in alternative certification programs the general consensus is that both traditional and alternative routes to teacher preparation need improvement. While current alternative routes may not significantly improve teacher learning, many believe they should not be considered to be worse than many university based teacher preparation programs (Stoddart & Floden, 1995).

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### **Testing**

The potential is tremendous for research to improve teacher education in the United States. Building upon what has been done, and conducting studies of important questions, helps maintain the goal of having well qualified teachers available to all children. Tests often play an important role in licensure paths and in what candidates study and learn to prepare for their career options. These tests are designed to provide a dependable tool for identifying practitioners who have met certain standards.

The Pre-Professional Skills Test (PPST), was developed by the Educational Testing Service (ETS) at the request of the National Teachers Examination Council. It was designed to provide objective, standardized measures of proficiency in reading, mathematics, and writing. ETS is an educational measurement organization, that

pioneered computer-based testing and who boasts of being a leader in educational research. This organization develops and administers achievement, occupational, and admissions tests, such as the SAT for clients in education, government, and business. There are 11 million tests administered each year in the United States and in 180 other countries (Princeton, 1999) .

### **ACT/American College Testing Program**

The idea for the American College Testing Program began in the 1950's. Most colleges wanted to expand and by the late 1950s, there were large numbers of students reaching college age who wanted to attend these schools of higher learning. The American College Testing Program was designed to help students make better decisions about their postsecondary education and also provide more information to colleges

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interested in the numerous candidates . In the late 1990s, the name was changed to ACT and now includes the new expanded supplementary and tutorial materials and services added to their product line (ACT, 2000).

Research has shown repeatedly that participation in college-preparatory courses are directly related to higher levels of achievement on the ACT tests, and may determine greater success in college. Students with more high school math and science courses achieve much higher average scores, not only on the ACT subject tests, but also on the composite, or overall score. President of ACT, Inc., Richard L Ferguson, reports a steady increase in ACT scores since 1990. Those higher scores, in turn, typically translate into scholarship opportunities, more postsecondary options and better academic

performance. More than 37 years of research has shown that performance on the ACT assessment is directly related to the first-year college grade point average (ACT, 2001).

### **PPST/ Pre Professional Skills Test**

It is the intention of the Wisconsin Department of Instruction to assure that prospective teachers demonstrate a minimal level of basic skills competency. University students in Wisconsin who enrolled after August 30, 1990 are required to pass basic skills tests in reading, writing, and mathematics before being allowed to advance into programs that lead to a license to teach . (UW-Stout began requiring this test for all teacher candidates in the fall of 1987). All students planning to enroll in an initial professional education program in Wisconsin colleges and universities are required to pass one of the basic skills tests. The PPST (Pre-Professional Skills Test) or the Computer based Academic Skills Assessments (CBT) are considered to be approved tests

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of assessment for beginning teachers. Praxis I is generally used for admissions to teacher programs and Praxis II is generally used for licensure.

Upon completing 40 credits at UW-Stout, students who are interested in an education degree need to pass PPST . The following scores are required to continue in the education programs: PPST Reading 175, PPST Writing 174, and PPST Mathematics 173. The PPST alternative called CBT requires a score of 322 for CBT Reading, 320 for CBT Writing, and 318 for CBT Mathematics. One third of the candidates taking the PPST test at UW-Stout do not pass all three sections the first time. They retake one or more sections and can obtain extra assistance with the Learning Plus tutorial Program. Special

modifications will also be allowed for English as a second language or learning disabilities modifications.

### **Praxis Series**

The Praxis Series is currently being used by 34 states. Between 1977 and 1997, research was done on 200,000 candidates who had taken at least one teacher test during this time period (Gitomer, 2000). The study used candidates ACT scores as a determinant of their academic ability. Validity of using these to determine success was determined by reasoning that teachers should be drawn from the most academically able group. There is also growing evidence that ACT and SAT scores are positively related to verbal ability (Ehrenberg & Brewer, 1995). There are many qualities that are related to academic ability that may be a part of what makes an effective teacher, however it is just one way of measuring teacher quality.

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### **Raising standards**

Testing can and does pose something of a barrier to many teacher candidates, because of the passing rates. While more than 3 out of 4 candidates seeking entrance to a college of education passed Praxis I and nearly 9 out of 10 seeking their license passed Praxis II (Gitomer, 2000a), the failure rate is still quite high. Most of the problems occur for minority candidates who are drastically lower than the majority of candidates in their overall scores. Across all racial/ethnic groups, minority candidates tend to pass Praxis at lower rates than majority candidates. Another example of this barrier may be those

students who have not passed the Praxis II (PPST), and may be clogging the pipeline for future candidates of education

A group called Organization Trust has suggested there is need to raise the standards for teacher licensure tests. There would be much stricter guidelines for testing than those currently in place and would consequently reduce the total pool of teachers available. If the highest current passing scores are used across all states, fewer than half the candidates would pass Praxis I, and fewer than two thirds would pass Praxis II. (Gitomer, 2000b ).

The National Research Council recently stated in a report released by (AACTE, 1996) that scores on teacher licensure exams do not provide complete information about teacher qualifications. Teacher preparation programs should not be judged solely on these statistics. The licensure tests should not be the only measure that gauges a teacher's everyday practices.

### **Summary**

Raising the standards for teacher trainees and passing higher scores on student tests are important goals for reaching excellence in education. There needs to be effective ways to increase both the overall supply of teachers and the types of teachers needed in some content areas. Suggestions to raise teacher salaries, focus on recruitment and early preparation plus intense alternative route programs to lure new trainees into education programs may all serve promising results.

Is improving education the responsibility of somebody else? Society continues to take the same narrow view of quality education and direct the blame to others. If the problems and issues continue on the same path, the future of education may drastically threaten quality education for all students. The “frog dilemma” is a good example of what could happen in the near future. If a frog is placed in hot water, he would immediately hop out. However, put the frog in room temperature water and then turn the heat on gradually. The frog will be overcome by the heat only after it is too late and can not get out. There appears to be a gradual increase of the temperature of the education climate that may not be noticed until the problems are impossible to overcome. Is this someone else’s problem or does it need everyone’s immediate attention? Suddenly, there may be some urgency to surviving the hot water.

## **CHAPTER III**

### Methodology

#### **Introduction**

This chapter will describe the subjects under study and how they were selected for inclusion in this study. In addition, the instruments being used to collect information will be discussed as to their content, validity, and reliability. Data collection and analysis procedures will then be presented. The chapter will conclude with some of the methodological limitations.

### **Description of subjects**

The subjects for this study were 46, anonymous, sophomore teacher education majors whose data were randomly drawn from more than 550 students who completed the PPST at UW-Stout during the spring of 2001. No demographic data were collected on this sample. However, the random nature of the subject selection probably means that most, if not all, of the teacher education programs offered at UW-Stout would have been represented in this sample. The following are education bachelor's degree programs offered at UW-Stout: Art Education, Early Childhood Education, Family & Consumer Education, Marketing / Business Education, Technology Education, and Special Education. There are also Graduate level degrees of education in Guidance & Counseling, School Psychology, and Technology Education. Teaching minors are also offered for certification in English, Speech, History, Mathematics, Coaching, and Health.

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### **Instrumentation**

Both the Office of Teacher Education and the Registrars' Office cooperated to provide the researcher with a single document containing 46 anonymous data sets. Each data set was made up of a Cumulative Grade-Point Average (GPA), American College Test score (ACT), and Reading, Writing, and Mathematics sub-scale scores from the Pre-Professional Skills Test (PPST). Below is a short description of each of the five pieces of data and how they are related to each other.



GPA. Because any credits transferred to UW-Stout transfer without grades, data from transfer students were not included in this study. Subjects would have had a minimum of three semesters to develop their GPA.

ACT. High school seniors complete these tests that derive their name from the American College Testing Service that develops the instrument. Scores are sent to colleges and universities who use them as part of the admissions application process to predict the likelihood of academic success. Not every freshman is required to submit an ACT score in order to be admitted to UW-Stout. Students over the age of 21, military veterans, married students, and transfer students are among those who are exempt from completing the ACT. Both the reliability and the predictive validity of the ACT are frequently reported to be exceptionally high.

PPST. The American College Testing Service also develops this instrument. It is required for students in teacher preparation programs in Wisconsin. Students are required to pass each of the three subscales of the test with minimum scores of Mathematics 173, Reading 175, and writing 174, respectively. Because

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there are two forms for taking the PPST test; the paper-and-pencil PPST test and the computer PPST test, all the computer scores were converted to the comparable values for pencil and paper scores.

## CHAPTER IV

### Results, Discussion, and Recommendations

#### Results

This study collected and analyzed data related to four null hypotheses with results as follows:

HO-1 There is no statistically significant correlation between ACT scores and GPA for education majors at U W-Stout.

This hypothesis was supported. Results of the analysis shown in Table I reveal that with correlation of  $r = .233$ , the probability of this occurring is greater than  $p = .05$ .

TABLE 1

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MATRIX OF R (upper) and R sq (lower) VALUES:

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	ppst R	ppstW	ACT	GPA	
ppstM	0.456*	0.389*	0.647*	0.233	ppstM
	0.208	0.151	0.419	0.054	
ppstR		0.385*	0.523*	0.130	ppstR
		0.148	0.274	0.017	
ppstW			0.404*	0.190	ppstW
			0.163	0.036	
ACT				0.301	ACT
				0.091	

ppstR      ppstW      ACT      GPA      \* =p-value<.05 (2  
tail)

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HO-2 There is no statistically significant correlation between any of the PPST sub-scales for education majors at UW-Stout.

This hypothesis was rejected. Data in Table I show that each of the PPST sub-scales is statistically significantly correlated with the other two sub-scales in the set of three.

HO-3 There is no statistically significant correlation between ACT scores and any of the PPST sub-scales for education majors at U W-Stout.

This hypotheses was rejected. Table 1 reveals that ACT scores were statistically significantly correlated with each of the PPST sub-scales at the  $p = .05$  level.

HO-4 There is no statistically significant correlation between GPA and any of the PPST sub-scales for education majors at UW-Stout.

This hypotheses was accepted. The data from Table 1 show that none of the PPST sub-scales were statistically significantly correlated with GPA.

The data shown on Table 2 reveal that the mean score for each of the PPST sub-scales is moderately larger than the minimal passing scores for Math = 173, Reading =175, and Writing = 174. The PPST math sub-scale shows the greatest standard deviation (4.047), while the standard deviation (2.482) is smallest on the writing sub-scale.

TABLE 2

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TABLE OF MEANS AND STANDARD DEVIATIONS;

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	N	MEAN	SD	est SD
ppstM	46	177.522	4.047	4.092
ppstR	46	178.043	2.836	2.867
ppstW	46	176.717	2.482	2..509
ACT	46	20.152	3.014	3.048
GPA	46	3.309	0.411	0.416

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The mean ACT score for the participants in this study was just over 20 (20.153), while the mean GPA was 3.309 as shown in Table 2.

## **Discussion**

Among the most basic tenets of research design is that correlation studies do not lead to conclusions of casualty. Consequently, the data from this study demonstrate evidence of the connection between variables rather than attribution. In this study, both ACT and GPA were treated as potential predictor variables, while the three PPST sub-scales were each thought of as potential criterion variables.

Unlike many previous studies, the data from this study showed no statistically significant correlation between ACT scores and college GPA. The most cynical interpretation of this data probably suggests that pressure to retain students in order to

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maintain fiscal stability may have brought about a practice of grade inflation, resulting in steadily rising GPA.

A more generous interpretation might argue that UW-Stout promotes itself as a “minds on – hands on” university with more devoted laboratory space than any other university in Wisconsin. Consequently they might suggest that William Gardner’s theory of multiple intelligences is being applied in a way that provides students with opportunities to demonstrate their academic achievement in varied, non-traditional ways.

Regardless of the interpretation chosen, some additional discussion of ACT scores is warranted. The participants in this study had a mean ACT score of

20.152.. Meanwhile, the incoming freshman class for Fall 2001 at UW-Stout has a reported mean ACT score of 22. Wisconsin high school graduates from the class of 2000 had the fourth highest average ACT scores (mean = 22.2 ) in the United States. However, while 69% of all Wisconsin seniors took the ACT test, the percentages of seniors taking the ACT test in the three states with the best ACT scores was 12%, 6%, and 18% respectively. In short, Wisconsin is well known for having one of the best P-K-12 public education systems in the country.

The finding that the three PPST sub-scales scores were statistically significantly correlated with each other was of little surprise. Previous research had produced similar findings. The fact that the PPST failure rate for the total 550 data sets from which these data were selected was 14% and higher than university officials would like, must be tempered with the knowledge that Wisconsin uses the highest PPST cut

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off scores in the country. Of the students with failing PPST scores in this study, twice as many failed one sub-scale (50%) as failed either two sub-scales (25%) or all three sub-scales (25%).

The fact that this study found a statistically significant correlation between ACT scores and each of the PPST sub-scales was also no surprise. Previous research by Duke and Duke (1990) and Salzmon (1991) showed a consistent connection between ACT scores and PPST sub-scale scores. However, after factoring in teacher classroom performance as measured by instruments from the

Teacher Performance Assessment Instruments (TPAI) scale, Salzman concluded that she would not suggest using ACT, PPST or GPA as criteria for admission into teacher education programs.

The data from this study failed to demonstrate any statistically significant correlation between GPA and any of the PPST sub-scales scores. One of the interesting observations related to this finding is that not one single PPST failure occurred when the student used the Computer Based Academic Skills Assessment alternative to the paper-and-pencil PPST assessment. Other states have also noticed discrepancies between the written and computerized version of PPST. Both Texas and Kansas have banned use of the computer version of PPST.

In attempting to explain the variations found in the PPST scores between the paper and pencil version, and the computer version, literature has suggested possibilities such as students increased comfort with technology, paper and pencil tests always being administered on Saturday mornings (the morning after syndrome), and better coordination between the computer version of PPST and the Learning Plus

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tutorial program that allows students to prepare for the exam on the computer. The higher cost to take the PPST by computer has not seemed to deter many students from using this option. Considering the much higher success rate, this option might actually be cheaper for many students.

Since 1984, passing scores on the PPST have been required for entry into teacher education programs at the University of Texas at El Paso (UTEP). College of education faculty, concerned because the majority of their population has traditionally been older, Hispanic students, developed a pre-PPST screening and advising program as part of the required Orientation to Education course. The basis of the program consists of reading and math screening tests tied conceptually to the PPST and administered at voluntary testing sessions. The tests predict PPST scores with 96 percent accuracy (Salinger, 1986). Students failing below a validated cut off score are referred for remedial or refresher work, including successful PPST-preparation workshops. PPST pass rates of UTEP students have consistently been at or above the overall state average, with minority enrollment in the college maintaining constant over time. These screening tests and variations of the UTEP program are used in over 70 institutions. This screening test represents the best available alternative to teacher preparation programs that are concerned about the PPST failure rates.

In summary, the two predictor variables ACT and GPA were not found to be statistically significantly correlated with each other. However, the three criterion variables; the math, reading, and writing sub-scales of the PPST were all found to be statistically significantly correlated with each other.



All three of the criterion variables were determined to be statistically significantly correlated with ACT scores. Conversely, none of the three criterion variables were shown to be statistically significantly correlated with GPA.

Raw data for analysis can be found on Appendix A.

### **Recommendations for further study**

The data included in this study did not distinguish first time test takers from second, third or perhaps even fourth time test takers. The results of another study may differ if only first time test takers are used to supply the data.

This study could be replicated using either paper-and-pencil scores or computer scores exclusively.

A replication of this study could reveal different results if subjects were factored out by gender or by program majors.

It would be interesting to learn how much students actually know about the PPST success rates for computer versus paper and pencil forms of the test.

Finally, this study should be replicated outside Wisconsin in some state that has lower standards for high school graduation, lower PPST cutoff scores, and lower mean ACT scores.

APPENDIX A

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RAW DATA FROM DATA SETS  
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### References

ACT. (2000). ACT national and state scores composites by state.

Retrieved July 18,2001 from the World Wide Web:

<http://www.act.org/news/data/00/00states.html>

ACT. (2001). ACT history and facts. Retrieved July 18, 2001 from the  
World Wide Web: <http://www.act.org/aboutact/history.html>

American Association of Colleges for Teacher Education. (1996). Teacher  
Education Policy in the States: State Issues Clearinghouse

American Association of Colleges for Teacher Education. (1986).  
Alternative certification: A position statement of AACTE. Journal of Teacher  
Education, 36 (3), 24.

AASA, (1999) American Association of School Administrators online

advocacy Retrieved June 25, 2001 from the World Wide Web:

<http://www.aasa.org/Advocacy/.htm>

Archer, J. (1997, July 9). NEA's portrait of a public school teacher.

Education Week, p.7-9.

Archer, J. (1999, March 17). New teachers abandon field at high rate.

Education Week, p.10.

Barton, L. (1999, April). Whiter did's't thou go? (Report No. NCES-WP-99 12). Washington, DC: National Center for Educational Statistics. (ERIC Document Reproduction Service No. ED 448 591)

41

Beldon, R. (1998, April). Too much testing of the wrong kind: Too little of the right kind in k-12 education. Education Service Testing Network, 1, 51.

Bethel, L. (1986, February). Redesign teacher education to recruit talented candidates and remediate "at risk" candidates using skills tests and related data. (ERIC Document Reproduction Service No. ED 268 083). Retrieved June 15, 2001

<http://www.edu.org/about risk/overview.html>

Boe, E., Bobbitt, S., & Cook, L., (1996). Retention, reassignment, migration and attention of special and general education teachers (Report No. NCES-WP-96-12).

Washington, DC: National Center for Education Statistics. (ERIC Document Reproduction Service No. ED 417 159)

Boe, E., & Gilford, R. (1997). Teacher supply demand and quality: Policy issues models and databases. Retrieved June 16, 2001 from the World Wide Web:

<http://www.nap.edu/catalog/2040.html>

Bradley, A. (1998). Uneven distribution contributes to teacher shortages, study warns. Education Week, 18, 5-7.

Bradley, A. (1999, March 10). States' uneven teacher supply complicates staffing of schools. Education Week, 30, 15.

Bruno, S. (2000) The supply and demand of elementary and secondary school teachers in the United States. (ERIC Document Reproduction Service No. 486 529)

Curran, N., & Canada, B. (2000, January). Welcome more data, but apply it well. School Administrator, 11, 44-46.

42

Darling-Hammond, L., & Berry, B. ( 1988). The evolution of teacher policy. Santa Monica, CA: The RAND Corporation.(ERIC Document Reproduction Service No ED 351 312.

Darling-Hammond, L. (1990). Teaching and knowledge: Policy issues posed by alternative certification for teachers. Peabody Journal of Education, 67 (3), 123-35.

Darling-Hammond, L. (1991). Achieving our goals: Superficial or structural reforms? Phi Delta Kappa, 72, 286-295.

Duke,D.,& Duke, J. (1990 ) Predictors of performance on the mathematics test of the Pre Professional Skills Tests. (ERIC Document Reproduction Service No. 318 769)

Retrieved July 26, 2001 <http://ehostvgw21.epnet.com/fulltest.asp?resultSetId=R0000001&rlFormNum=300&selec>.

Education Commission of the States. (1999). Teacher recruitment.

Clearinghouse notes. Retrieved June 30, 2001 from the World Wide Web:

<http://www.ets.org/aboutets/news/99042701.html>

Ehrenberg A., & Brewer, M. (1995). Transforming to effective learning in our schools. Adult Learning, 7(4), 23-25.

Fideler, B. & Haselkorn, L. (1999, May). What makes teachers leave the profession? NEA Today, p 10-12.

Fehrenhaft, G. (2001). Baron's pass key to the ACT. American College Testing Program, Barron's Educational series,

Feistrizer, C.E. (1998, January). The truth behind the teacher shortage. Wall Street Journal, p. 10.

43

Fordham, T. (1999). Teachers unions and class size. Retrieved July 9, 2001 from the World Wide Web: <http://www.edexcellence.net/topics/teachers.html>

Gitomer, L (2000). Classroom environment, achievement goals and outcomes. Journal of educational Psychology, 93 (1), 43-54.

Gerald, D.E., & Hussar, W. J. (1998). Projections of education statistics to 2008. Washington, DC: U.S.Department of Education, Office of Education Research and improvement.

Goals (2000) Federal research investment and the improvement of teaching.

Retrieved June 18, 2001 from the World Wide Web:

<http://depts.washington.edu/ctmail/Publications/00JK1/intro.html>

Grissmer, D. (1997, Fall). Teacher turnover and teacher quality. Academic Search Elite, 99, 45. Retrieved June 23, 2001 from:

<http://ftviewer.epnet.com/ftviewer/delivery.asp?deliveryoption=Citation+>.

Jehlen, A. (2001, May). Why teachers leave the profession and what can make them stay. NEA Today, p.8-9.

Kern, J. (1998, September 7) . Demand for teachers . New York Times, p.A 9.

Learning Plus. (1998) Learning Plus Computer Program. Retrieved July 24, 2001 from the World Wide Web:

<http://admin.soe.purdue.edu/oppl/guide98/program/pluscom.html>

Lewis , M. (1996). A critical appraisal of the recommendations of the National Commission on teaching and America's future. Government Union Review, 17, (4).

44

Livingston, S. (2000, April). How well do SAT scores predict pass/fail statistics on a college-level basic skills test? (ERIC Document Reproduction Service No. ED 441 006)

Lynch ,J. (1991) .Who will teach? Cambridge: Harvard University Press. Retrieved June 23, 2001 from:

<http://ftviewer.epnet.com/ftviewer/delivery.asp?deliveryoption=citation+...>

Mitchel, K. (2001). Testing teacher candidates: The role of licensure tests to improve teacher quality . Committee on Teacher Quality Center for Education, p.15.

National Center for Education Statistics. (1997). Teacher outcomes NCES indicator. Digest of Educational Statistics Washington DC: Author.

NFTAC. (1997). Digest of educational statistics Table 3 Washington, DC: U.S. Government Printing Office.

NCTAF.(1996). What matters most, teaching for America's Future. Retrieved July 11, 2001 from the World Wide Web: <http://www.tc.columbia.edu/nctaf/publication/whatmattersmost.html>

Palaich, R. (2000, February). Mobilizing public support for policy initiatives that enhance the quality of teaching. Education Commission of the States, 1-12.

PPST (2001). PreProfessional Skills Test Information Retrieved July 25, 2001 from the World Wide Web: <http://www.augie.edu/dept/educ/andrews/ppst.html>

Princeton, N.J. (1999) Is there too much testing in American schools? Retrieved May 31, 2001 from the World Wide Web: <http://www.ets.org/aboutects/news/99042701>



Robinson, D. (2001, April). Testing teacher candidates: The role of licensure tests in improving teacher quality. Retrieved June 16, 2001 from the World Wide Web:  
<http://www.nap.edu/books/0309074207/html>.

Salinger, T. (1986, February). Responding to the Pre Professional Skills Test  
 Retrieved July 26, 2001 ERIC Document 268 113  
<http://ehostvgw21.epnet.com/fulltext.asp?resultSerId=R00000001> &  
 r1FormNum=300&selec

Salzman, S. (1991, February) Selecting the qualified : predictors of student teacher performance (ERIC Document Reproduction Service 330 672 Retrieved July 26, 2001 from the World Wide Web:  
<http://ehostvgw21.epnet.com/fulltext.asp?resultSerId=R00000001>&r1FormNum=300&sel  
 ec.

Schone, D. (1990). Recruiting and retaining teachers in rural schools Far West  
 Laboratory Knowledge Brief (No.4). San Francisco: Educational Research and  
 Development. (ERIC Document Reproduction Service No. ED 328 383)

Smith, M. (2001, May/June). Higher standards for prospective teachers-What's missing from the discourse? Journal of Teacher Education, 52, 179-181.

Snyder, T. (1999). Digest of education statistics, 1998. Washington,DC: National Center for Education Statistics, U.S. Department of Education.

State Issues Clearinghouse. (1996). Teacher education policy in the states. American Association of Colleges for Teacher Education, 85-86.

Streisand, B, & Toch, T. (1998, September). Many millions of kids and too few teachers. U.S. News and World Report. Retrieved June 15, 2001 the World Wide Web: <http://www.partnership.tamu.edu/about.shtm>

Stoddart, S., & Floden, F. (1995 September). Licensing a professional educator. New York Times, p. A9.

U.S. Department of Education. (1998, September). Promising practices : New ways to improve teacher quality. Retrieved June 25, 2001 from the World Wide Web: <http://www.ed.gov/pubs/prompractice/chapter2.html>.

Wilson, S., & Floden, R. (2001, March). Teacher preparation research: Current knowledge in gaps and recommendations. Center for the Study of Teaching and Policy, 1-5.

**APPENDIX A**

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 RAW DATA FROM DATA SETS
 

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		ppstM	ppstR	ppstW	ACT	GPA
Value #	1	183	180	185	23	3.658
Value #	2	189	180	182	23	3.134
Value #	3	175	175	175	18	2.893
Value #	4	176	178	175	17	3.018
Value #	5	179	174	180	21	3.858
Value #	6	181	178	177	21	3.648
Value #	7	179	178	174	20	3.278
Value #	8	181	182	176	26	3.407
Value #	9	179	181	176	23	3.383
Value #	10	178	181	177	23	3.232
Value #	11	175	178	178	23	3.412
Value #	12	181	179	176	20	2.712
Value #	13	180	178	176	19	3.374
Value #	14	176	180	177	22	3.667
Value #	15	173	178	175	15	3.097
Value #	16	181	180	175	21	3.124
Value #	17	181	180	181	26	2.761
Value #	18	177	177	176	17	2.748
Value #	19	176	176	178	22	4.000
Value #	20	178	178	178	23	3.948
Value #	21	174	176	175	19	3.963
Value #	22	179	181	176	21	3.719
Value #	23	180	182	178	23	3.899
Value #	24	181	178	176	23	3.422
Value #	25	177	177	177	17	2.898
Value #	26	176	176	174	18	3.381
Value #	27	178	178	178	23	3.447
Value #	28	176	180	178	22	3.770
Value #	29	173	181	176	18	2.897
Value #	30	180	181	177	23	3.602
Value #	31	179	180	176	19	3.564
Value #	32	178	176	174	21	2.750
Value #	33	180	180	180	21	3.463
Value #	34	179	179	172	20	3.531
Value #	35	178	178	178	21	2.585
Value #	36	174	177	174	19	2.618
Value #	37	165	174	174	17	2.476
Value #	38	180	180	180	23	3.832
Value #	39	177	178	174	17	3.816
Value #	40	178	178	178	22	3.061
Value #	41	182	178	177	18	2.954
Value #	42	177	177	175	21	3.036
Value #	43	176	176	176	17	3.710
Value #	44	168	181	181	12	2.944
Value #	45	176	168	174	15	3.331
Value #	46	167	169	174	14	3.212



## RAW DATA FROM DATA SETS

		ppstM	ppstR	ppstW	ACT	GPA
Value #	1	183	180	185	23	3.658
Value #	2	189	180	182	23	3.134
Value #	3	175	175	175	18	2.893
Value #	4	176	178	175	17	3.018
Value #	5	179	174	180	21	3.858
Value #	6	181	178	177	21	3.648
Value #	7	179	178	174	20	3.278
Value #	8	181	182	176	26	3.407
Value #	9	179	181	176	23	3.383
Value #	10	178	181	177	23	3.232
Value #	11	175	178	178	23	3.412
Value #	12	181	179	176	20	2.712
Value #	13	180	178	176	19	3.374
Value #	14	176	180	177	22	3.667
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Value #	16	181	180	175	21	3.124
Value #	17	181	180	181	26	2.761
Value #	18	177	177	176	17	2.748
Value #	19	176	176	178	22	4.000
Value #	20	178	178	178	23	3.948
Value #	21	174	176	175	19	3.963
Value #	22	179	181	176	21	3.719
Value #	23	180	182	178	23	3.899
Value #	24	181	178	176	23	3.422
Value #	25	177	177	177	17	2.898
Value #	26	176	176	174	18	3.381
Value #	27	178	178	178	23	3.447
Value #	28	176	180	178	22	3.770
Value #	29	173	181	176	18	2.897
Value #	30	180	181	177	23	3.602
Value #	31	179	180	176	19	3.564
Value #	32	178	176	174	21	2.750
Value #	33	180	180	180	21	3.463
Value #	34	179	179	172	20	3.531
Value #	35	178	178	178	21	2.585
Value #	36	174	177	174	19	2.618
Value #	37	165	174	174	17	2.476
Value #	38	180	180	180	23	3.832
Value #	39	177	178	174	17	3.816
Value #	40	178	178	178	22	3.061
Value #	41	182	178	177	18	2.954
Value #	42	177	177	175	21	3.036
Value #	43	176	176	176	17	3.710
Value #	44	168	181	181	12	2.944
Value #	45	176	168	174	15	3.331
Value #	46	167	169	174	14	3.212

