Addressing The Problem Of Unequal Distribution Of Highly Effective Teachers

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White Paper

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Forward

We are all reminded that every state has an educational credentialing system in place to assure the best qualified teachers are assigned to each subject.

It has become a state's rights issue, a *No Child Left Behind* mandate, that all teachers be highly-qualified. Many states are applying for or already have received waivers from this and/or the Average Yearly Progress (AYP) goal so as to lessen the number of failing schools by that definition.

In this paper we have assumed the stance that the law still exists. The terminology relating to highly-qualified teachers is still in place, and that even absent the law, it will still be the state's responsibility and goal to provide the most highly effective teachers in every subject.

So, regardless of whether NCLB exists, all stakeholders, parents, students, educators and politicians in each state will still be concerned with the unequal distribution of highly-qualified effective teachers.

ADDRESSING THE PROBLEM OF THE UNEQUAL DISTRIBUTION OF HIGHLY EFFECTIVE TEACHERS

This writing proposes a practical, economical path to the better preparation of in-service teachers on a subject-by-subject basis leading to improved student achievement. The need for such a path is evident in the crisis's defined by failing schools, the unequal distribution of effective teachers, lagging adequate yearly progress (AYP: half of all U.S. schools failing in this measure according to Center on Education Policy Report released Dec. 2011, per cent by state on pages 18-21 of this paper), the high teacher turnover, the looming teacher retirements, the lowered standards for instructor hiring, the low student achievement, the low graduation rates. Collectively, the results are an inadequate level of college and workforce readiness, which contributes to concerns relating to national competitiveness and security issues. In order to highlight the size and scope of the issue, you may only need to review a partial list of the many programs that have been proposed or implemented to address these issues, including:

- Short duration professional development workshops (focusing on pedagogy, classroom management, differentiated learning, etc.)
- Longer school day and/or longer school year
- Smaller class sizes
- Block scheduling / modular scheduling
- Information process approach to learning: problem-based learning, inquiry-based learning, essential questions, discovery or project-based curriculum designs
- Virtual classrooms
- Whole language
- After school programs (including tutoring)
- Paying students for good grades
- Moving the best teachers out of the classroom and placing them in mentoring positions
- Moving the best teachers from suburban to urban or hard-to-staff schools
- Establishing smaller schools
- Generic mentoring of teachers
- Individualized study programs
- Differentiated Education Strategies
- Mainstreaming of all students – trackless curriculum
- Dumbing down of course content in effort to leave no child behind
- Open classroom, blended learning, team teaching
- Cross-curriculum learning
- Enrolling more students in college prep and AP courses
- More standardized testing
- Merit pay
- Credentialing
- Vouchers, school choice
- Turnaround, restart, closure, or transformation of schools

In addition, a report recently released by the GAO found 82 overlapping teacher training programs, none of which has solved the problem to date. Each of these well-intentioned programs or solutions has a price and can be costly in any economic climate. Although many have attained some initial success, the problem of failing schools and underachieving students remains unsolved.

1. The Problem:

There is a huge amount of public and private data, research and commentary on the global challenge of failing school systems. Research, over decades, shows a one-to-one relationship between better prepared teachers leads to improved student achievement.

To underline the severity of the problem, close to 30% of all entering high school freshman fail to graduate, almost 50% fail to graduate in many U.S. urban school districts. In many cases, students are taught by instructors who lack a college major or minor in the subject. In the physical and biological sciences and history, the percentages are over 50% of students taught by an under qualified teacher.

The U.S. Department of Labor data indicates that if even 33 percent of current dropouts would graduate from high school, the federal government would save $11 billion each year in food stamps, housing assistance and temporary assistance for needy families. Recent data released from the "Alliance for Excellent Education," a D.C.-based policy, research and advocacy organization, indicate more than 1.2 million students in the U. S. didn't graduate from high school in 2004, the last year for which data was available. These numbers are going in the wrong direction. This is more than just another indictment of our public schooling process. According to the recent Alliance report, in the lifetimes of the dropouts, it will cost the nation $325 billion in lost wages, taxes and productivity.

Presidents, past and present, and the National Governors Association have identified their *highest education priority as the need to highly qualify all teachers, particularly high school teachers*, in all the subjects they teach. Convincing research concluded, we will never achieve our national goal of leaving no child behind until we leave no teacher behind. Although State and Federal Governments have poured billions of dollars in to programs that allegedly address this problem, there still remains a huge opportunity to close the gap between expectations and actual results. Addressing the problem of under qualified K-12 teachers will help reduce the discrepancy in educational opportunity for all students.

Part of the federal No Child Left Behind law passed in 2001, the "highly qualified" provision requires teachers in every state to hold at least a bachelor's degree and demonstrate mastery in each subject taught, either by passing a state test or having studied the subject in college.

Regardless of whether you agree or not with the NCLB federal mandate that all teachers be highly qualified using the current definition of the law, or even if the entire law where repealed, it remains that each state has a credentialing system in place whose goal it is to provide the best qualified teacher in every classroom. If you have concerns about the term highly qualified, there should be little disagreement that each teacher should be as highly *effective* as possible.

Given that understanding, over a quarter of the 3.5 million PK-12 U.S. school teachers are assigned to teach at least one subject a day in which they lack even a college minor (including 261,000 secondary teachers who are the focus of this writing). Hundreds of thousands more are teaching a course for the first time, and although technically qualified, still have no experience in teaching that specific subject.

Adding to this problem is the fact that over 2 million veteran teachers will retire in the next ten years requiring replacements from a smaller pool of qualified candidates. Thirty years ago teachers came from the top quintile of college graduates (before the best and brightest women migrated to more financially rewarding professional opportunities). Today, teachers typically (with exceptions) come from the lowest quintile of graduates adding more each year to the problem of under qualified teachers. Additionally, a recent study found that 4 out of 10 teachers now come from alternative certification routes (nonteaching careers) as opposed to graduating from schools of education.

At one time or another during their careers, 100% of teachers face the problem of teaching a subject for the first time. While they are adapting to this problem, it inevitably negatively affects their students. The problem of new course assignments affects everyone involved, from the administration to the department chair, teacher, student and parent. Assigned to teach a subject for which they do not have proper qualifications or experience happens often to a novice teacher or from time-to-time to a veteran teacher.

It only takes a few teachers in a particular school, unavoidably assigned to a new subject (for which they are only technically qualified) or, worse, assigned out-of-field (meaning they have neither college major nor minor in the subject), to result in a failing status or lower Adequate Yearly Progress (AYP) for the entire school. (See solution section for an answer to this situation).

The 2002 NCLB Education Bill called for all teachers to be 'highly qualified' in their teaching assignments by June 2006. Unfortunately, despite many well-intentioned educational initiatives, programs and massive funding, this goal has not been reached.

There are articles and reports almost weekly that further amplify the need for better and more focused teacher preparation and professional development. Here are a few examples from Education Week:

Teaching at the Precipice: Strengthening Teacher Retention and Recruitment for the Long Haul, Nov. 5, 2008, by Arthur E. Levine and David Haselkorn:

> "…nearly half of all teachers (are) leaving their classrooms within five years and as many of a third of the nation's teaching force (are) readying for retirement…Study after study has shown that experienced teachers are more effective in raising student academic performance. We can help retain teachers ameliorating the key problems which cause them to leave: poor salaries, bad working conditions, low status and too little preparation for the classroom…The National Commission on Teaching and America's Future has estimated the cost of replacing teachers who turn over in the early years at $15,000 to $20,000 per teacher in our largest urban schools. The additional cost of remediation for students who lack expert teachers more than doubles that amount."

Out-of-Field Teaching More Common in Poor Schools, Dec. 10, 2008, Article by Stephen Sawchuk:

> "Children in high-poverty schools are twice as likely as those in affluent schools to be taught by teachers who hold neither certification nor academic majors in their fields, says the report commissioned by the Education Trust, a Washington-based group that advocates for children...The (NCLB) law requires to staff every core academic class with a 'highly-qualified' teacher – one who is fully licensed, holds a bachelor's degree, and demonstrates content matter knowledge in his or her field (by passing a test)…Out-of-field teaching appears to be most severe in grades 7-12. At that level, more than 2 in every 5 classes in high-poverty schools were taught by teachers who held neither certification nor an academic major in their fields according to the Federal SASS data."

Pressure Builds for Effective Staff Training - Teachers' on-the-job learning seen as path to greater student gains, July 27, 2005, Article by Debra Viadero:

> Experts know, for instance, that programs focused on the academic content that teachers must cover and on *how students think about that content are more effective than those that impart more generic teaching techniques. They know that longer-lasting professional development tends to produce better results.* They also know that such programs work best when they link to teachers' daily classroom experiences—the tasks their students

> will have to do, for example, or the texts they will use. Besides measuring students' learning gains . . . studies will test teachers' "pedagogical content knowledge"—in other words, both what teachers know about the subject matter and what they know about how children learn and think about it.

The following text is excerpted from a report prepared by the National Commission on Teaching and America's Future, April 2008: *America's Schools Are About to Be Hit By the Largest Teacher Retirement Wave in History Are We Ready? (italics in the following quotes are our emphasis)*

> "Over 50 percent of the nation's teachers and principals are Baby Boomers. During the next four years we could lose a third of our most accomplished educators to retirement. The wave of departures will peak during the 2010‑11 school year, when over one hundred thousand veteran teachers could leave. In less than a decade more than half of today's teachers – 1.7 million – could be gone.
>
> *We can't recruit our way out of this problem*. Wholesale replacement of accomplished veterans with inexperienced beginners is a bad bet. Beginning teacher attrition rates have been rising steadily for more than a decade (see Appendix A). By some estimates, over a third of the nation's new teachers leave the profession within three years. In some school districts half of the new hires are replaced every five years. *The schools in these districts struggle to close the student achievement gap, because precious resources and time are consumed by constant efforts to rebuild their staff. High turnover is a central factor driving the inequitable distribution of quality teaching.*
>
> *The consequences of this turnover are particularly dire for high‑poverty schools that struggle to close the student achievement gap because they never close the teaching quality gap—they are constantly rebuilding their staff. A massive amount of their scarce capital—both human and financial—is consumed by the constant process of hiring and replacing beginning teachers*, who leave before they have mastered the ability to collaborate with their colleagues to create a successful learning culture for their students. When they go, they leave a host of problems behind for the eager young teachers who take their place."

> "The traditional teaching career is collapsing at both ends. Beginners are being driven away by antiquated preparation practices, outdated school staffing policies, and inadequate career rewards. At the end of their careers, accomplished veterans who still have much to contribute are being separated from their schools by obsolete retirement systems. In five years, two-thirds of the teachers we entrust our children to in America's classrooms could be gone.
>
> *Additionally, no recruitment strategy, no matter how robust or well‐funded, can capture and distribute the wisdom and collective knowledge of successful dedicated veteran teachers. Few school systems have any way to identify who should stay, and virtually none has a way to institutionalize what the most accomplished teachers have learned through their decades of service about how to improve student achievement."*

In an article entitled *No U-Turn*, by Diana Senechal, March 4, 2010, published in The Core Knowledge Blog, Closing the Achievement Gap: Teaching Content, Senechal writes:

> "In The Death and Life of the Great American School System, as in her previous work, Diane Ravitch takes apart many education fads and clichés. Throughout her career, Ravitch has repeatedly criticized the tendency of reformers to latch onto the newest educational idea without regard for the substance of a curriculum. In *The Troubled Crusade* (1983), and later, in *Left Back* (2000), she describes the curriculum revision movement of the early decades of the twentieth century: it typically began with an administrator learning that 'his own school's program, no matter how successful it might seem, was outmoded.' *The efforts to bring the school in line with the times invariably destroyed the academic curriculum*. In her latest book, too, she shows the futility of reforms that ignore the substance of learning. '*Schools have been pushed beyond teaching reading and writing to include social programs and became laboratories for instructional fads…*'"

According to U.S. Department of Education statistics over 40%, of the 3,500,000 K-12 teachers in the U.S. are either new to the profession; have only a general education degree; are assigned to teach a subject out-of-field (a subject in which they have neither a college major or minor) each year. Lack of preparation among new or out-of-field teachers telegraphs a negative

message to students, leading to a loss of respect for the teacher, a break down in classroom discipline and an environment not conducive to learning. Thousands of schools have been given failing grades by the US Department of Education, based on individual state performance standards. Adding to these problems is an existing shortage of qualified teachers. It is disturbing that some school districts are offering signing bonuses and waiving traditional teaching certification requirements.

Quantifying the problem:

The U.S. Department of Education National Center for Educational Statistics (NCES) has over the decades defined and quantified the problem of underprepared teachers. To be specific, there are two categories of teachers who would most benefit from a sustained professional development program leading to their becoming highly qualified in their new subject assignments:

1) Under-qualified: Secondary teachers (approx. 261,000 each year in a changing population) who are assigned to subjects for which they are not technically qualified to teach because they:

a) Do not have a collegiate major or minor in the subject assignment,

b) Do not have NCLB HOUSE points to qualify,

c) Have not passed a competency test for that subject (where there is such a test available).

2) Technically-qualified: Secondary teachers (an additional 250,000 approximately and not included in the NCES estimates) who are "technically-qualified" to teach the subject, yet had never taught it before (these might be a secondary teacher certified in science with a life science collegiate major (such as biology) asked to teach a physical science such as chemistry or physics) or a physical education major asked to teach U.S. History.

Realistically, in a free labor market, the distribution of highly-qualified and effective teachers is a naturally occurring inequity. Highly qualified and effective teachers gravitate to suburban schools and lesser qualified teachers to urban schools. As a result, it has been found to be difficult to either:

1) Find enough highly qualified and effective educators who will volunteer for failing schools,
2) Coerce enough talented teachers, to failing schools.

In a recent *Education Next* interview, the observation was made that if we force teachers to teach in particular schools, they may leave for another district, choose an administrative position, or leave education altogether. Kati Haycock said in this interview **"**No matter what measure of "quality" you look at, poor and minority students—and not just those in inner-city schools—are much less likely to be assigned better-qualified and more-effective teachers. *Core academic classes in high-poverty secondary schools are* ***twice as likely*** *as those in low-poverty schools to be taught by a teacher with neither a major nor certification in the subject. The percentage of first-year teachers at high-minority schools is almost* ***twice as high*** *as the percentage of such teachers at low-minority schools."*

The following chart is based on the latest available NCES statistics from 1999 regarding out-of-field teaching assignments by state. This chart shows that an average 24% of secondary teachers nationally are teaching one or more subjects out-of-field. It is our belief that if there had been measurable improvement, newer data would have been made available.

STATE/JURISDICTION	# SECONDARY TEACHERS	% TEACHERS OUT-OF-FIELD	# TEACHERS OUT-OF-FIELD
ALABAMA	19,298	22.97%	4,433
ALASKA	2,842	29.44%	837
ARIZONA	13,033	34.50%	4,496
ARKANSAS	15,678	18.24%	2,860
CALIFORNIA	77,488	26.68%	20,674
COLORADO	21,601	20.05%	4,331
CONNECTICUT	12,305	27.31%	3,360
DELAWARE	3,793	37.45%	1,420
DISTRICT OF COLUMBIA	1,599	18.37%	294

STATE/JURISDICTION	# SECONDARY TEACHERS	% TEACHERS OUT-OF-FIELD	# TEACHERS OUT-OF-FIELD
FLORIDA	52,204	28.42%	14,836
GEORGIA	38,882	31.02%	12,061
HAWAII	5,000	33.04%	1,652
IDAHO	6,777	26.22%	1,777
ILLINOIS	32,161	22.03%	7,085
INDIANA	25,782	12.99%	3,349
IOWA	12,479	15.66%	1,954
KANSAS	14,791	19.51%	2,886
KENTUCKY	15,947	31.68%	5,052
LOUISIANA	14,742	40.15%	5,919
MAINE	5,423	29.37%	1,593
MARYLAND	21,462	22.33%	4,792
MASSACHUSETTS	33,655	19.44%	6,543
MICHIGAN	44,028	20.44%	8,999
MINNESOTA	25,364	7.28%	1,846
MISSISSIPPI	11,088	30.03%	3,330
MISSOURI	31,659	24.36%	7,712
MONTANA	3,436	20.47%	703
NEBRASKA	8,350	15.49%	1,293
NEVADA	6,937	30.49%	2,115
NEW HAMPSHIRE	4,493	20.58%	925
NEW JERSEY	28,172	17.47%	4,922
NEW MEXICO	4,837	35.17%	1,701
NEW YORK	69,480	18.11%	12,583
NORTH CAROLINA	29,999	19.41%	5,823
NORTH DAKOTA	3,274	16.39%	537
OHIO	40,497	30.08%	12,181
OKLAHOMA	17,863	25.98%	4,641
OREGON	8,068	26.05%	2,102
PENNSYLVANIA	48,595	22.22%	10,798
RHODE ISLAND	4,657	17.66%	822
SOUTH CAROLINA	13,158	22.49%	2,959
SOUTH DAKOTA	2,646	22.23%	588
TENNESSEE	15,735	35.62%	5,605
TEXAS	110,911	29.67%	32,907
UTAH	9,088	19.37%	1,760
VERMONT	3,053	22.51%	687
VIRGINIA	37,135	28.37%	10,535
WASHINGTON	21,078	26.03%	5,487
WEST VIRGINIA	6,759	30.38%	2,053
WISCONSIN	17,724	13.68%	2,425
WYOMING	3,475	19.03%	661
TOTAL	1,078,501	24.21%	261,105

KEY: orange (or gray in black and white version of this report) = state or jurisdiction over national average of 24% secondary teachers out-of-field annually

Source for number of secondary teachers and % out-of-field: National Center for Educational Statistics at U.S. Department of Education, 1999-2000

The following chart details the per cent of teachers with or without a collegiate major in the subject of the classroom assignment. In summary, not much progress in the numbers of highly-qualified teachers by subject area is shown. It still remains that specific sciences (44%-78%), math (37%), foreign language (47%) and history (62%) are the least well served where teachers are technically qualified (certified) yet have no collegiate major in the subject. An assumption can be made that if progress had been made over the last few years, a survey would have been released to demonstrate that fact.

Table 1.—Percentage of public school students by grade levels taught and teacher's qualification status in subject: 1987–88 and 1999–2000

Subject	Middle grades (5–8)				High school grades (9–12)			
	No major and certification		No major, minor, or certification		No major and certification		No major, minor, or certification	
	1987–88	1999–2000	1987–88	1999–2000	1987–88	1999–2000	1987–88	1999–2000
English	64.6	58.3	19.5	17.4	38.2	29.8	13.0	5.6
Foreign language	—	60.7	—	13.8	—	47.6	—	11.1
Mathematics	69.9	68.5	17.2	21.9	37.4	31.4	11.1	8.6
Science	62.4	57.2	16.3	14.2	31.4	27.3	8.1	5.5
Biology/life science	70.0	64.2	32.9	28.8	47.7	44.7	9.3	9.7
Physical science	92.9	93.2	43.0	40.5	70.2	63.1	30.9	15.5
Chemistry	—	—	—	—	62.9	61.1	16.8	9.4
Geology/earth/space science	—	—	—	—	83.2	78.6	50.9	36.3
Physics	—	—	—	—	81.6	66.5	40.3	17.0
Social science	48.3	51.1	12.7	13.3	33.7	27.9	7.5	5.9
History	67.5	71.0	15.2	11.5	62.1	62.5	13.0	8.4
ESL/bilingual education	80.5	72.9	41.2	36.1	88.7	70.8	54.4	31.1
Arts and music	15.1	15.0	2.0	2.5	15.7	19.6	3.3	5.0
Physical education/health education	22.2	18.9	5.8	3.4	24.8	19.1	5.6	4.5

—Not available.

NOTE: Middle-level teachers include teachers who taught students in grades 5–9 and did not teach any students in grades 10–12; teachers who taught in grades 5-9 who identified themselves as elementary or special education teachers were classified as elementary teachers. High school teachers include all teachers who taught any of grades 10–12, as well as teachers who taught grade 9 and no other grades. Not all subjects were measured in each SASS administration.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public Teacher Questionnaire," 1987–88 and 1999–2000, and "Charter Teacher Questionnaire," 1999–2000.

Table 2. Percentage of Public School Teachers Without a Full Certificate in the Field Taught, in Selected Fields, By State (1999–2000)

		Secondary			
	Elementary	English	Math	Science	Social Studies
United States	6.56	26.71	28.62	23.99	27.99
Alabama	0.10	32.11	23.84	21.57	15.64
Alaska	6.07	41.29	54.08	27.24	36.26
Arizona	6.85	25.97	37.54	32.26	28.86
Arkansas	0.00	22.74	15.06	16.41	21.34
California	13.14	33.91	41.53	32.77	35.52
Colorado	5.03	33.10	44.93	28.22	35.30
Connecticut	1.74	24.67	18.34	19.41	27.04
Delaware	12.66	37.02	40.93	34.15	49.91
DC	20.49	28.73	32.35	27.26	69.63
Florida	4.25	31.48	40.43	24.49	37.67
Georgia	6.36	33.64	20.30	23.74	27.23
Hawaii	5.05	41.90	56.28	34.56	34.54
Idaho	1.49	16.74	23.43	11.11	19.77
Illinois	2.93	18.04	21.31	17.65	26.48
Indiana	1.38	14.25	20.76	19.71	14.14
Iowa	7.05	20.12	24.00	15.11	20.81
Kansas	0.00	24.94	22.97	21.19	27.66
Kentucky	9.88	27.97	26.39	27.21	19.35
Louisiana	6.83	34.49	33.91	34.91	35.87
Maine	2.59	27.42	28.29	12.97	23.61
Maryland	6.32	30.05	20.89	30.8	28.36
Massachusetts	5.11	21.81	23.73	25.28	19.75
Michigan	16.49	32.83	38.81	27.18	42.99
Minnesota	1.37	11.83	19.05	21.58	16.18
Mississippi	3.97	40.15	33.37	21.16	13.68
Missouri	6.28	28.13	25.40	26.38	26.09
Montana	0.87	24.45	21.74	23.98	22.66
Nebraska	0.00	25.75	24.33	19.54	28.01
Nevada	4.98	26.37	19.31	23.76	15.80
New Hampshire	0.00	22.65	33.24	32.82	29.00
New Jersey	1.14	24.85	17.17	22.60	32.43
New Mexico	2.61	28.84	33.49	27.53	38.05
New York	10.88	32.82	33.66	26.62	30.03
North Carolina	3.06	24.51	28.57	31.48	19.80
North Dakota	1.58	12.28	26.85	16.49	13.63
Ohio	14.57	25.60	22.36	21.43	18.27
Oklahoma	0.96	26.47	25.22	15.60	20.43
Oregon	0.00	26.00	28.95	20.01	29.55
Pennsylvania	1.99	31.15	26.52	21.17	31.26
Rhode Island	6.13	26.89	14.11	23.10	22.13
South Carolina	3.20	16.19	13.55	23.18	10.29
South Dakota	1.34	15.63	11.81	7.63	20.85
Tennessee	5.56	23.27	24.07	24.77	24.71

Table 2. continued: Percentage of Public School Teachers Without a Full Certificate in the Field Taught, in Selected Fields, By State (1999–2000)					
		Secondary			
	Elementary	English	Math	Science	Social Studies
Texas	8.18	21.02	36.14	24.39	31.83
Utah	1.47	28.42	23.12	16.04	21.01
Vermont	0.00	10.37	20.21	4.35	14.25
Virginia	8.97	20.43	26.29	23.49	33.05
Washington	2.29	28.97	23.32	15.68	40.08
West Virginia	0.00	27.66	19.94	12.53	24.94
Wisconsin	2.41	15.44	10.74	11.78	14.69
Wyoming	0.84	13.19	16.92	13.26	27.65

Notes on the preceding chart: "Less-than-full certification" includes those with emergency, temporary, alternative, or provisional certification. "Full certification" includes those with probationary, regular, standard, full, or advanced certification. "Probationary" refers to an initial certificate issued after satisfying all requirements, except completion of probationary period. Teachers completing alternative route programs are classified based on the type of certificate held at the time of the survey, but once an alternative route program is completed and a teacher earns a full or standard certificate, he or she would be classified as fully certified.

"Elementary" includes those teaching kindergarten or grades one to eight. It only includes those teaching in self-contained classes, i.e. where the teacher teaches multiple subjects to the same class of students all or most of the day. It includes K–8 teachers employed in middle schools. It excludes departmentalized teachers who teach subject-matter courses to several classes of different students all or most of the day.

"Secondary" includes those teaching grades seven to twelve in the fields of English, math, science, and social studies. It only includes those teaching in departmentalized classes, i.e. where the teacher teaches the same subject to different classes of students all or most of the day. It includes seventh and eighth grade, departmentalized teachers who are employed in middle schools.

Source: *1999–2000 Schools and Staffing Survey*, National Center for Education Statistics, U.S. Department of Education., web link: http://www.nga.org/Files/pdf/0408HQTEACHER.pdf

Number and percentage of public high school-level classes of specific subjects taught by a teacher with a major and certification in that subject area, by selected subject areas: 2007–08

Selected subject area	Number of classes	Major in subject area			No major in subject area			Total certified
		Total	Certified	Not certified	Total	Certified	Not certified	
Mathematics	676,900	70.4	62.0	8.4	29.6	15.7	14.0	77.6
Science	562,700	81.7	71.2	10.4	18.3	11.4	6.9	82.7
Biology/life sciences	245,000	72.9	57.2	15.7	27.1	17.2	10.0	74.4
Physical science	289,300	43.2	35.4	7.8	56.8	29.1	27.7	64.5
Chemistry	106,900	46.0	35.3	10.7	54.0	33.9	20.1	69.2
Earth sciences	53,100	23.7	18.0	5.7*	76.3	22.1	54.2	40.1
Physics	43,200	46.7	31.4	15.4	53.3	28.3	25.0	59.6

*Interpret one data point with (*) above with caution. The standard error for this estimate is equal to 30 percent or more of the estimate's value.

NOTE: High school-level classes include classes taught to students in any of grades 9-12 by teachers in traditional public and public charter schools. Each subject area includes several subfields. Under science, several subfields are examined in detail. These subfields are not inclusive of all subfields in the subject and, therefore, do not add to the broad field total. "Major in subject area" columns include all teachers, regardless of whether the major was held within or outside the school/college of education. Majors in subject area were credited if they are held at the bachelor's degree level or higher. "Certified" columns contain teachers with a regular/probationary certification in-subject and at the secondary level. Detail may not sum to totals because of rounding and because some data are not shown.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public School Teacher Data File," 2007–08.
web link: http://nces.ed.gov/surveys/sass/tables/sass0708_010_t1n.asp

The most disconcerting data in the preceding chart is in the column labeled “no major in subject area and not certified.”

Number of public high school-level teachers who reported a specific main assignment and the percentage with and without a major in that main assignment, by subject of main assignment: 2007–08

Selected main assignment	Number of teachers	Percent with major in main assignment	Percent without major in main assignment
English	161,300	82.8	17.2
Mathematics	143,600	72.5	27.5
Science	119,800	84.0	16.0
Biology or life sciences	53,800	76.1	23.9
Physical science	58,100	48.5	51.5
Chemistry	24,500	48.2	51.8
Earth sciences	8,500	33.2	66.8
Physics	8,800	57.7	42.3
Social science	119,200	83.3	16.7
Economics	6,200	15.0 *	85.0
Geography	8,000	9.7 *	90.3
Government or civics	15,000	6.1 *	93.9
History	60,100	63.8	36.2
French	11,500	82.0	18.0
German	3,100	87.2	12.8‡
Latin	2,000	68.7	31.3 *
Spanish	41,700	74.6	25.4
Art or arts and crafts	32,400	89.5	10.5 *
Music	34,900	95.2	4.8
Dance and drama or theater	7,500	61.0	39.0

*Interpret the 3 data points above with asterisk (*) above with caution. The standard error for those 3 estimates is equal to 30% or more of those 3 estimate's value. ‡ Reporting standards not met.

NOTE: Teachers include traditional public and public charter teachers who taught departmentalized classes to students in any of grades 10–12, or grade 9 and no grade lower. Each main assignment includes several subfields. Under science and social science any of several subfields are examined in detail. These subfields are not inclusive of all subfields in the subject and, therefore, do not sum to the broad field total. "Major in main assignment" includes all teachers, regardless of whether the major was earned within or outside the school/college of education. Majors in main assignment are credited if they were earned at the bachelor's degree level or higher. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public School Teacher Data File," 2007–08.

http://nces.ed.gov/surveys/sass/tables/sass0708_006_t1n.asp

The column to the far right in this table above notes a disturbing per cent of teachers without a major in their subject assignments, particularly in Math, Science and History.

Additionally, the Center for Education Policy reported the following:

AYP Results for the Nation and the States

As **table 1** shows, an estimated 48% of the nation's public schools did not make adequate yearly progress in 2011. Also shown in table 1 are the estimated percentages for each state. Among individual states, this percentage ranged from 11% in Wisconsin to about 89% in Florida. To discern any patterns, we grouped states into quartiles according to their percentages of schools not making AYP. We also looked more closely at the states with the largest enrollments. Here's what we found:

- A large majority of the states (43 and D.C.) reported that 25% or more of their public schools did not make AYP in 2011.
- In 24 states and D.C., 50% or more of the state's public schools did not make AYP in 2011—twice as many states as in 2010.
- In 5 states and D.C., 75% or more of the state's public schools did not make AYP in 2011. From highest to lowest, these states included Florida, Missouri, D.C. and New Mexico (tied), Massachusetts, and South Carolina.
- No clear pattern was evident in the four largest states with 2011 data, which together enroll roughly one-third of the nation's students. The estimated percentages of schools that fell short of AYP in 2011 in these states were 89% in Florida, 66% in California, 65% in Illinois, and 29% in Texas.

Table 1. Estimated percentage and number of schools in the nation and each state that did not make AYP in 2011 based on 2010-11 testing

State	***% did not make AYP***	***% made AYP***	***# not making AYP***	***Total # of schools***	***Source***
U.S. total	***48%***	***52%***	***43,738***	***90,695***	
Alabama	27%	73%	377	1,383	http://www.alsde.edu/Accountability/2011Reports/Press/2011AypNewsRelease.pdf?lstSchoolYear=9&lstReport=2011 Reports%2FPress%2F2011AypNewsRelease. pdf
Alaska	54%	46%	274	505	http://www.eed.state.ak.us/news/releases/2011/News_Release_201 1 AYP. pdf
Arizona	42%	58%	814	1,938	http://www.azdatapages.com/datacenter/education/schools.html
Arkansas	69%	31%	736	1,071	E-mail communication with John Hoy, Assistant Commissioner for the Division of Academic Accountability, 11/17/11
California	66%	34%	6,526	9,875	E-mail communication with Rachel Perry (Director) and Jenny Singh (Education Research and Evaluation Consultant), Assessment, Accountability and Awards Division, California Department of Education, 11/16/11
Colorado	54%	46%	1,103	2,043	http://www.cde.state.co.us/communications/Releases/20111004ayp. html

Source: Center for Education Policy, Usher Report, Dec. 2011

State	% did not make AYP	% made AYP	Total # of schools	Source
Connecticut	47%	53%	979	http://www.sde.ct.gov/sde/lib/sde/pdf/pressroom/AYP201 1/ayp_2011 _newsrelease. pdf
Delaware	17%	83%	206	http://www.doe.k12.de.us/aab/files/School_Detail_Su m mary_2010-2011-corrected_Nov2011.pdf#School%20Accountability%20Summary%202011-updated and e-mail communication with Alison Kepner, Public Information Officer, Delaware Department of Education, 11/22/11
D.C.	87%	13%	193	http://www.nclb.osse.dc.gov/schoolsSummaryReports. asp?c=E&rt=&sb=
Florida	89%	11%	3,063	http://www.fldoe.org/news/2011/2011_06_30.asp
Georgia	27%	73%	2,246	http://public.doe.k12.ga.us/ayp2011/overview.asp?SchoolID=000-0000-b-1-0-0-0-5-6-0-8-0-10
Hawaii	59%	41%	286	http://lilinote.k12.hi.us/STATE/COMM/DOEPRESS.NSF/a1 d7af052e94dd120a2561f7000a037c/6baf7d23ce54788f0a2578f9000da7c8?OpenDocument
Idaho	38%	62%	659	http://www.sde.idaho.gov/site/assessment/FederalReq/docs/FINAL_AYPSchoolDistrictList_9132011.xlsx
Illinois	65%	35%	3,920	http://www.isbe.net/news/2011/oct20.htm
Indiana	49%	51%	1,793	http://www.doe.in.gov/ayp/docs/2011/ayp_results_summary-by_the_numbers.pdf
Iowa	37%	63%	1,401	http://educateiowa.gov/index.php?option=com_content&view=article&id=2489%3A2011-state-report-card-for- no-child- left-behi nd&catid=242%3Anews-releases&Itemid=2717
Kansas[1]	16%	84%	1,367	http://www.ksde.org/Default.aspx?tabid=36&ctl=Details&mid=1030&Item ID=555
Kentucky	57%	43%	1,148	http://www.education.ky.gov/KDE/HomePageRepository/News+Room/Current+Press+Releases+and+Advisories/1 1-082.htm
Louisiana	22%	78%	1,284	E-mail communication with Barry Landry, Press Secretary, Louisiana Department of Education, 11/8/11
Maine[2]	67%	33%	562	http://www.maine.gov/education/pressreleases/ayp/fy2012/i nd ex. htm l
Maryland	45%	55%	1,376	http://www.marylandpublicschools.org/NR/exe res/0 D9 08 3 D3 -7 0 E 1-4DB4-A3F4-56C821997979,frameless.htm?Year=201 1 & Month=9&W BCMODE=Prese%25%252%25%3e%25%3e%%3E
Massachusetts	81%	19%	1,714	http://www.doe.mass.edu/news/news.aspx?id=6421 and e-mail communication with Kenneth Klau, School Improvement Grant Programs, Division for Accountability, Partnerships and Assistance, Massachusetts Department of Elementary and Secondary Education, 11/29/11
Michigan	21%	79%	3,437	https://www.mischooldata.org/DistrictSchoolProfiles/ReportCard/ReportCardSummary/Final_AYP_Reports_2011.xls
Minnesota[3]	51%	49%	2,075	http://education.state.mn.us/mdeprod/idcplg?IdcService=GET_FILE&dDocName=021964&Revis ionSelectionM ethod=latestReleased&Rendition=primary

Source: Center for Education Policy, Usher Report, Dec. 2011

State	% did not make AYP	% made AYP	# not making AYP	Total # of schools	Source
Mississippi	50%	50%	445	894	Personal communication with M. Francie Gilmore-Dunn, Director of Statistics, Mississippi Department of Education, via e-mail 11/29/11
Missouri	88%	12%	1,916	2,188	http://mcds.dese.mo.gov/quickfacts/AYP%20%20Federal%20Accou ntability/AYP_Su mma ry_School.zip and e-mail communication with Janet Duncan, Assistant Director, Accountability Data, Missouri Department of Elementary and Secondary Education, 11/2/11
Montana	28%	72%	228	821	http://opi.mt.gov/pdf/AYP/2011/11AYPSumm ary.pdf
Nebraska	27%	73%	260	952	http://reportcard.education.ne.gov/Page/Acc ou ntabilityFederalSu mmary.aspx?Level=st and e-mail communication with Diane Stuehmer, Title I and Federal Programs Director, Nebraska Department of Education, 11/28/11
Nevada	55%	45%	372	680	http://nde.doe.nv.gov/AYP/PR_2010_2011_ AYP_Results.pdf
New Hampshire[4]	71%	28%	327	458	http://www.education.nh.gov/news/ayp11.ht m
New Jersey	50%	50%	1,123	2,228	http://www.state.nj.us/education/title1/accou ntability/ayp/101 1/
New Mexico	87%	13%	720	831	http://ped.state.nm.us/ayp2011/Quick%20Fa cts%202011.pdf
New York[5]	36%	64%	1,670	4,607	See footnote 5
North Carolina	72%	28%	1,804	2,495	http://www.dpi.state.nc.us/newsroom/news/2 011-12/20110804-01
North Dakota	53%	47%	242	457	http://www.dpi.state.nd.us/news/2011/press_ release8_5_2011.pdf
Ohio	40%	60%	1,454	3,628	http://www.ode.state.oh.us/GD/DocumentMa nagement/DocumentDown load. aspx?Docum entID=110354
Oklahoma	30%	60%	526	1,777	E-mail communication with Scott Goldman, Director of Research and Evaluation, Oklahoma State Department of Education, 11/18/11
Oregon[6]	46%	54%	586	1,270	E-mail communication with Cynthia Yee, Accountability Reporting Specialist, Oregon Department of Education, 11/2/11
Pennsylvania	28%	72%	869	3,096	http://paayp.emetric.net/StateReport
Rhode Island	19%	81%	54	289	http://www.eride.ri.gov/reportcard/11/docum ents/2011 StateSummaryofSchoolClassificati ons. pdf
South Carolina	76%	24%	831	1,087	http://ed.sc.gov/agency/news/?nid=1764
South Dakota	20%	80%	134	667	http://doe.sd.gov/pressroom/news.asp?ID=2 65 and e-mail communication with Judy Merriman, Administrator, Data Management, South Dakota Department of Education, 11/30/11
Tennessee	49%	51%	823	1,664	http://www.tn.gov/education/nclb/ayp/doc/Ba sic_AYP_Stats_2011-12.pdf
Texas[7]	29%	71%	2,233	7,830	http://ritter.tea.state.tx.us/ayp/2011/summari es1 1 .pdf
Utah	22%	78%	203	895	E-mail communication with Rebecca Donaldson, Education Specialist –Title I School and District Improvement, Utah State Office of Education, 11/28/11

Source: Center for Education Policy, Usher Report, Dec. 2011

State	% did not make AYP	% made AYP	# not making AYP	Total # of schools	Source
Vermont	72%	28%	216	300	http://education.vermont.gov/new/pdfdoc/dept/press_releases/EDU-Adequate_Yearly_Progress_Determination_Summary_2011.pdf
Virginia[8]	62%	38%	1,124	1,825	http://www.doe.virginia.gov/statistics_reports/accreditation_ayp_reports/ayp/index.shtml
Washington	63%	37%	1,358	2,149	http://reportcard.ospi.k12.wa.us/Download/2011/AYPSchoolOverall.xls
West Virginia[9]	54%	46%	361	663	http://wveis.k12.wv.us/nclb/public_eleven/repstatc.cfm
Wisconsin	11%	89%	228	2,072	http://dpi.state.wi.us/eis/pdf/dpinr2011_65.pdf
Wyoming	29%	71%	101	348	http://edu.wyoming.gov/Libraries/WDE_Press_Releases/Final_AYP_Press_Release_July_15_2011.sflb.ashx

Table reads: In 2011, 377 Alabama schools, or 27% of the public schools for which the state reported AYP results, did not make AYP.

[1]Kansas had yet to determine the AYP status of 6 schools.

[2]In Maine, there were 29 schools with no AYP status due to a lack of testing data and 17 schools for which AYP status was still pending.

[3]In Minnesota, 180 schools had insufficient data and did not receive an AYP designation. The percentage calculated was for the total number of schools reporting AYP designations.

[4]In New Hampshire, 11 schools received a small-schools designation and are not included in AYP numbers.

[5]According to an e-mail of 11/22/11 from Clara DeSorbo of the New York State Education Department, New York will not publicly release its 2010-11 AYP determinations until February 2012. This table uses New York's 2009-10 AYP numbers from its State Consolidated Performance Report. The percentage of schools not making AYP in 2011 is likely to increase compared with 2010, as gauged by the unprecedented number of New York schools that have been identified for improvement.

[6]In Oregon, 16 schools did not receive AYP ratings due to "new school status or reconfiguration".

[7]In Texas, 696 schools were not given AYP designations because of the grade levels they served, their size, or other reasons.

[8]Virginia has 8 schools whose AYP status is still "to be determined" and 5 new schools that are not included in the AYP count.

[9]In West Virginia, 30 schools were new, small, or did not receive an AYP designation for other reasons. The percentage calculated was for the total number of schools reporting AYP designations.

Source: Center on Education Policy, based on information collected from the state sources shown in the last column of the table.

As noted in earlier CEP reports, these variations among states may be less a result of differences in educational quality than of differences in test difficulty, cut scores defining proficiency on state tests, AMOs, student demographics, and other factors. States in which a high percentage of schools did not make AYP may have harder tests, higher cut scores, or higher AMOs. These variations make it inadvisable to draw conclusions about student performance or educational quality by comparing AYP status across states. Additionally, these figures are estimates; official numbers will not become publicly available until next year.

Source: Center for Education Policy, Usher Report, Dec. 2011

In summary, the myriad of problems faced by the educational community include:

- A revolving, under-prepared instructional talent pool;
- Continued funding of ineffective programs;
- Lowering of standards and rigor;
- Recruitment, development and retention issues and
- Lack of respect for teachers in the classroom.

All of the above items are factors against improved student achievement. Progress still eludes us, despite the many programs and solutions that have been proposed, well-funded, implemented,

2. A Solution

Many have identified the lack of sufficient numbers of highly-qualified teachers as the problem most likely inhibiting improvements in student achievement, to wit, here are two well credentialed voices:

NCLB: Highly Qualified Teachers - the Search for Highly Qualified Teachers

Journal article by Barnett Berry, Mandy Hoke, Eric Hirsch; Phi Delta Kappan, Vol. 85, 2004):

> "Over the last decade, policy makers and business leaders have come to realize what parents have always known - *teachers make the most difference in student achievement.* Thanks to new statistical and analytical methods used by a wide range of researchers, the evidence is mounting that *teacher quality accounts for the lion's share of variance in student test scores*."

Frederick M. Hess, American Enterprise Institute (AEI) Director of Education, wrote the following in his summary of a March 24, 2009 discussion entitled *An Army of Great Teachers?*

> "Teachers may be the most important element of an effective school, but must K-12 improvement wait on the ability of schools or systems to recruit, nurture, and retain outstanding teachers? Can reformers and practitioners devise ways to increase this pool of talent or devise highly effective school models that are less reliant on standout teachers?"

Yes, reformers can find a way to increase the pool of talent and devise highly effective school models: by better preparing teachers already in the workplace. There is no need to encourage or coerce teachers from suburban to urban settings. A simpler, less costly and less disruptive strategy is to better supply the teachers at their schools when they have new assignments.

New teachers, veteran teachers and under qualified teachers will certainly benefit from a combination of sustained professional development, mentoring and continuing education and the benefits will accrue to their students. In this scenario the choice would not be between professional development and mentoring, it would combine them. In fact, such a program would not only support teachers with a combination of subject-specific curricula and mentoring, it would also add online courses for certification by subject. In this combination the subject-specific mentoring component would overlay and compliment any general mentoring program possibly already in place.

Steven F. Wilson, supported in his White Paper *Success At Scale In Charter Schooling*, published by the American Enterprise Institute (AEI), a sustained teacher development solution. His paper analyses the "No Excuses School" based on a traditional model. Wilson finds that even if all the elite college graduates went into teaching, there wouldn't be enough to provide a highly- qualified or effective teacher for every classroom. So, to scale the highly-qualified and effective teacher pool, he posits:

> *"If teachers were provided a powerful instructional system—placement tests and guides for class formation; a sequential, content-rich curriculum tightly linked to state standards and taught to mastery; frequent electronic assessments; detailed pacing charts, and so on*—then skilled career educators of varying backgrounds might be able to achieve results similar to those posted by the No Excuses schools."

As mentioned earlier, decades of research show a one-to-one relationship between better prepared teachers and student improvement. The **Teaching Point** instructional support program is rooted in this research-based common-sense finding and the conclusion that we will never achieve our national goal of leaving no child behind until we *leave no teacher behind*™.

Teaching Point proposes to address the problem of supplying highly-qualified and effective teachers in every classroom by the least costly and least intrusive method possible by better preparing teachers, in-place, with a sustained subject-specific professional development and subject-specific mentoring program.

In summary outline, the 3-part sustained professional development teacher training program (patent pending) developed by **Teaching Point** includes:

1) Complete subject-specific instructional materials,

2) Access to Subject-specific mentoring for the teacher and

3) Subject-specific Online Continuing education level 3-hour credit course, non-program related (not counting toward a Masters) specifically designed to prepare the teacher for the new subject assignment and certify them as highly-qualified and effective through an end of course content and pedagogy test.

In the development of this comprehensive solution to provide highly-qualified and effective teachers for every classroom, hundreds of teachers and administrators were asked the same following questions over the last 20 years.

Questions to teachers and their responses

What are the elements of support you would find most helpful when learning a new teaching assignment? The answer usually includes the desire for ongoing consistent access to a mentoring teacher of the subject and the access to their lesson files.

Are materials available from some other sources? They responded that although there are numerous lesson plan sites on the web and that they are helpful to experienced teachers looking for occasional complimentary resources, sifting through the posted stand alone lesson plans, activities or labs when you are new to a subject and don't know good material from bad or how to organize

the various pieces into a comprehensive daily presentation is a daunting task. Indeed, they find that to search for and discover high quality detailed material, if they can be found, is usually more time consuming than writing the lessons themselves (assuming they were motivated or qualified enough to do so).

Trying to string together a school year's worth of daily lessons with all the alignments, plans, class notes, activities, homework assignments, appropriate labs (that work) and assessments from these online free lesson plan sources is virtually impossible, and even if they could easily review them, the writing and teaching styles of each of the various teachers who wrote the individual materials is too inconsistent to use effectively. Teachers are also usually concerned that the general mentoring program available to them does not provide a teacher who is experienced or qualified in the subject of their new assignment.

Typically the general mentoring program provides tutoring in classroom management or teaching techniques as opposed to subject-specific help. Regarding subject content assistance, we asked:
If there were teachers in the building who taught the same subject, would they be of help? The answer came back many times that the other teacher is reticent to share. It seems it is a right of passage among teachers to write their own materials, essentially reinventing the wheel. Additionally, it seems to be a competitive concern as well for the experienced teachers (the humorous conclusion was that teachers may have failed 'sharing' in kindergarten). Also, sometimes a new teacher to a subject is the only teacher in the building who teaches that subject. In those cases, securing subject-specific mentoring becomes even more problematic.

Questions to administrators and their responses

Administrators were asked what concerns they had when forced from time-to-time to give a subject assignment to an under-qualified teacher. The answer was the need for a sustained professional development program that would best support those teachers in such unavoidable temporary assignments throughout the school year. The answer also voiced concerns that out-of-field assignments impact the standing of the school with the district, state and U.S. Department of Education.

Specifically they are concerned about Adequate Yearly Progress (AYP) given not all teachers are not knowledgeable of the subject content. They also ask if there is an emergency or alternative NCLB conforming path through the *High Objective Uniform State Standard of Evaluation* (HOUSSE) program where states are allowed to create subject content test to certified teachers as highly-qualified absent other academic or classroom experience) to highly-qualify these teachers and if subject-specific instructional support and subject-specific mentoring are available. Additionally, they are concerned about retention of teachers to whom they unavoidably need to make new assignments, particularly those who are veterans near retirement who will not want to take on the added workload (hundreds of hours of prep time) necessary to create the materials for the classroom.

Questions to mentoring teacher-authors and their responses

Of the experienced, highly-effective teachers who write their materials for publication in the **Teaching Point** *Expert Systems for Teaching Series*, we asked the same question: Is there such a comprehensive instructional support material available in their subject? Hundreds of teachers interviewed representing 120 different subjects published, answered a resounding "NO", in every case – such materials do not exist either domestically or internationally.

Response to teacher and administrator research

In answer to these specific concerns and requests, **Teaching Point** 's *Expert Systems for Teaching Series*, is an omnibus series of complete subject-specific instructional support materials; a knowledge base for teaching in all subjects and iterations of those subjects (adapted, regular, honors, AP and IB) in English with translations to other languages (Spanish already in process). Each of the curricula contains all the materials typically created by individual teachers and expected by administration, as well as the supplementary elements that are generally not included even with a teacher edition of a textbook.

These elements include printed and electronic versions of standard alignments, a syllabus, a pacing guide, a detailed daily lesson plan, editable assessments and keys, editable class notes (PowerPoint's), complete student activity book or lab manual and subject-specific mentoring teacher access (through email). The eBook and printed editions of over 120 different courses already serve schools in all 50 states and over 75 countries.

In addition to the subject-specific curricula materials and subject-specific mentoring program **Teaching Point** is developing online continuing education courses to certify teachers on a subject-by-subject basis when they are assigned unavoidably out-of-field. Templates for the first four courses: pre-algebra, algebra, biology and chemistry have been constructed. The continuing education courses will be hosted by university partners to highly-qualify teachers by subject.

This professional development program offers a low cost method to address the problems created by new and under-qualified teachers in the classroom. When implemented, this program will lead to better prepared teachers, who will receive greater respect from their students for their obvious preparation efforts. These teachers, in turn, will respond with improved achievement leading to lowered truancy, higher graduation rates, and college and workforce readiness.

In light of this well-documented quantifiable need, an economical and practical solution has developed with a knowledge base for teaching and sustained full-service teacher training program. In short, the **Teaching Point's** mission has crystallized in response to the problem of an educational system in crisis. Listed below are our goals:

- *Leave No Teacher Behind*™ by providing a solution to the national shortage of highly-qualified and effective teachers with an academically sound, day-to-day blue print for success in the classroom;
- Develop a care package for the educational community comprised of a complete series of subject and grade specific classroom preparation materials. Extensive materials would be available for teachers with new assignments and for teachers assigned out-of-field that include syllabus, standard alignments (including common core), pacing guide, detailed daily lesson plans, editable assessments, editable class notes and complete student activity book or lab manual without scripting allowing the teacher the ability to be creative in the classroom;
- Make subject-specific mentoring teachers available to instructors with new and out-of-field assignments through email (allowing for anonymity and reduction of the possibility of repercussions in one's own school);
- Develop more highly-qualified and effective teachers through a companion series of subject-specific non-program related online continuing education or continuing education credit courses with university partners leading to higher certification rates (**Teaching Point** will partner with universities to develop courses based on Company material and share in tuition);
- Assist in the recruitment and retention of teachers;
- Improve teacher competence and qualifications by subject leading to highly effective teaching;
- Improve student achievement and reduce dropout rates;
- Improve high school graduation rates;
- Improve college and workforce readiness; and
- Assist in national economic development through these outcomes.

Regardless of whether the *No Child Left Behind Education Act* mandate to certify that all teachers are "highly qualified" in their subject assignments and that schools attain student literacy and competency goals by 2006 (now revised to 2014) survives, each state still has a credentialing systems in place whose goals are to make sure the best qualified teachers are in each classroom.

To help districts move closer to achieving their own credentialing goals, there is certainly enough funding to accomplish this through the professional development budgets through the U.S. Department of Education and the states by reallocating from less than successful programs and/or discretionary funds held by state departments of education to this more practical and economical common sense program.

Collectively, over $21 billion annually (2006 estimates, similar today) is invested by the 50 states and the U.S. Department of Education for the professional development and training of educators. Of that, 25% of the $13 billion Title I program, or approximately $3.25 billion must be used for professional development, and another approximately $2.9 billion dollars comes from Title IIA Improving Teacher Quality State Grants as part of the NCLB (or its successor law). The remaining $15 billion comes from the states themselves.

The National Commission on Teaching and America's Future report estimates the high rate of teacher turnover in U.S. school systems cost more than $7 billion a year. According to the report, the costs included advertising and traveling to job fairs; hiring incentives and signing bonuses; the administrative processing and training of new recruits; mentoring and professional development for all teachers; salaries for substitutes; and separation costs if a teacher chose to quit. The "findings are a clear indication that America's teacher dropout problem is spiraling out of control," the report said.

The study said that so many teachers leaving the profession creates a self-perpetuating cycle of failure in some school systems, as a lack of experienced mentors and a sink-or-swim environment lead to trouble in the classroom and demoralization. Another study by the National Education Association, a teachers union, reports that nationally, about 50 percent of teachers leave their jobs within their first five years.

Yet another report finds that it costs approximately $30,000 to recruit a new teacher and approximately $15,000 to remediate students who were assigned to an underperforming teacher in terms of after school tutoring programs. The average teacher new to the profession now has a 3-5 year career before moving on to another.

This is an expensive and broken system whose negative effects can be minimized simply by providing a sustained professional development program with subject-specific instructional support materials, subject-specific mentoring and subject-specific online continuing education courses to highly-qualify teachers by subject.

According to the most recent *National Center for Educational Statistics*, there are approximately 261,000 under qualified secondary teachers nationally. The cost to qualify these secondary teachers (under any definition, federal or state) will be approximately $1 billion (or less than 5% of the annual $21 Billion professional development budgets already available to the states from the U.S. Dept. of Education each year. Some teachers are assigned to more than one new or out-of-field subject per day. This assumes an average of 1.5 online courses at a funded cost of approximately $1,414 each for the instructional support and mentoring teacher. In addition teachers would pay tuition of approximately $1,200 per 3 credit online continuing education course (some universities have higher tuition rates than others which may impact the use of Title I or Title IIa funds applied by school districts for enrollments).

In summary **Teaching Point** is developing

1) A dropout prevention program for students and teachers;

2) An economical, practical way to address one of the major problems of failing schools;

3) A way to recruit, develop and retain highly-effective teachers for every classroom assignment; and

4) Address the problem of the unequal distribution of effective teachers.

This patented program essentially provides the "missing link" in classroom preparation material and professional development. It also helps recruit, develop and retain teachers and, most importantly, leads to improved student achievement for the benefit of both the educational community and the workforce needs of many countries. The supply of these materials and services will, in turn, accrue benefits not only to the U.S. but also to developing nations globally, raising all boats.

Postscript:

The following universities have implemented the *Expert Systems for Teachers*® Series discussed here:

University of North Florida Division of Continuing Education (see http://www.UNFteacherPD.org),

Texas A&M University School of Education Commerce (see http://www.TEXASteacherPD.net) and

University of Missouri School of Education at St. Louis (see http://www.MISSOURIteacherPD.net)

All host the complete series of 100 subject-specific courses to certify teachers by subject as highly-qualified and set them on a path to be highly-effective.