



The Florida Senate

Interim Project Report 2000-30

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Committee on Education

Senator Anna Cowin, Chairman

TEACHER EFFECTIVENESS

SUMMARY

Florida lacks a coordinated, statewide method for recruiting and preparing the best candidates to become and remain teachers. Its requirements for temporary, professional, and alternative certification are characterized by contradiction and confusion. Florida has initiated dramatic new changes in the teaching profession but has not yet implemented them. This report provides indicators of the challenges before the state as it attempts to improve the effectiveness of its teachers. It does not provide a comprehensive analysis of existing data but points out gaps in essential information. The major recommendation is the development of a statewide approach to recruiting and preparing teachers who possess the characteristics identified in effective teachers. This approach should include recruiting components in liberal arts colleges and among college graduates in other careers. It should involve a comprehensive, state-level alternative to the traditional certification process. Florida should shore up its temporary certificate by requiring on-the-job support, and the State should abandon its practice of allowing school districts to develop alternative certification programs on their own, even with a requirement for state-level approval.

BACKGROUND

Florida's laws on teacher preparation and certification are contained in chapter 231, F.S., and s. 240.529, F.S. Section 236.08106, F.S., creates the Excellent Teaching Program, Florida's incentive program for teachers to obtain certification by the National Board of Professional Teaching Standards. The 1999 Legislature made significant changes in these laws. Among those changes are a mandated core curriculum for teacher preparation programs and an ambitious schedule for implementing a new statistical method for grading schools and evaluating teachers. The Department of Education's Bureau of Teacher Certification, assisted by the Education Standards Commission and an appointed Teacher Preparation Program Committee,

has the responsibility for reviewing and recommending changes in the laws and the curriculum requirements of teacher preparation programs.

The Commissioner of Education is a signatory on a 1999 "Manifesto" called *The Teachers We Need and How to Get More of Them*, which criticizes as a failure the "regulatory strategy" of improving teacher quality. States should focus on results, not regulations, and recent changes in Florida law require a speedy shift in focus. Schools and teachers are to be evaluated based on gains in student achievement, or "value-added" assessment -- a statistical process that uses an analysis of variance to estimate the influence of the teacher on annual student achievement gains. The point is to come up with the learning gains that can be attributed to the teacher and not to other factors, such as the student's entering ability. This approach offers tantalizing possibilities -- among them the possibility of identifying the characteristics of effective teachers.

Research in other states using this technique has strengthened the powerful 1996 findings of the National Commission on Teaching and America's Future: The teacher is the single most reliable variable in predicting student gains in achievement. This form of analysis has not, however, identified ways to produce effective teachers, and in fact it raises questions about some common assumptions.

At the same time, Florida is facing a teacher shortage and cannot wait for a new evaluation system before deciding what qualities teachers should have and designing ways to attract people with those qualities into the profession. We must rely on research that is currently available and applicable to Florida. That research shows, above all, that it is a mistake to employ unqualified people to teach, even if the existing "regulatory" method is all we use to define qualifications. Other states have adopted emergency routes to certification to meet state class-size goals or localized shortages, only to see the potential benefits wiped out because of ineffective teachers.

This report provides a summary of the measures of teacher effectiveness currently available and an estimate of problems Florida faces in attracting and keeping effective teachers.

METHODOLOGY

- A. Literature review
- B. Survey of 67 district school superintendents
- C. Interviews with school district administrators, staff of the Department of Education, Bureau of Teacher Certification, the Education Standards Commission, and the Board of Regents
- D. Analysis of data on professional development activities selected by Florida teachers

FINDINGS

A. Literature Review

1. Teacher Effectiveness

In an acknowledgment of the focus on outcomes, this review selected literature that correlated student achievement gains with teaching, whenever possible. Using research supplied by states in which “value-added” evaluation systems have been in place for five or more years, the highest correlation between student learning and teachers is the teacher’s pursuit of higher education in subject area content. The best teaching behaviors are continuous assessments of how well students are learning and “deep teaching.”¹ Other research identifies two other characteristics of effective teachers: how literate they are in general and how they perceive their abilities to succeed.

Research data do not prove or disprove the value of current certification requirements in assuring that teachers will possess desirable levels of these qualities. The following summaries consider recent publications from several sources about the selected variables and about certification.

a) Higher Education and Content Knowledge

Nationally about 45 percent of teachers have an advanced degree, most of them in education. The

¹Karen L. Bemby and others, Dallas Public Schools, *Policy Implications of Long-term Teacher Effects on Student Achievement*, Paper presented at the 1998 Annual Meeting of the American Educational Research Association.

correlation of effective teachers and higher education is greatest when the education is specific to the content. One study showed that a teacher’s having a master’s degree in education as opposed to the subject area had no impact on students’ test scores in science and a negative impact on the scores in math. That same study showed that teachers with a Ph.D. did not have higher scoring students than teachers who did not. Math teachers were more effective if they had a degree in math education than if they had a B.A. in math without an education concentration.²

These excessive variations prevent an easy conclusion that subject area expertise is all that matters. They do not tell what else matters, but clearly motivation to pursue subject area expertise is very important.

This interim project report does not include an analysis to see how many of Florida’s teachers have academic degrees and how many advanced degrees are in education. That analysis would require a survey of a random sample of Florida teachers or a review of each transcript of a sample of employed teachers.

More information is available about the education Florida teachers pursue while they are on the job -- in-service training or professional development. Professional development appears to be a low priority among local school districts. The 1997 Department of Education study of staff development found a contrast between the state policy and local implementation.

Although the policy and framework of support exist, in practice, staff development:

- is not supported by local funds,
- is not built into school schedules,
- does not conform to student needs, and
- lacks focus: “workshops are at an awareness level only and do not provide for substantive changes in curriculum, instruction, or technology.”

That report also concluded that the effect of staff development on student achievement is “virtually unstudied.”³

²Dan D. Goldhaber and Dominic J. Brewer, *Teacher Licensing and Student Achievement*, Thomas B. Fordham Foundation, 1999.

³Florida Department of Education, *The 1997 Staff Development Evaluation Study*, presented by Frank T. Brogan, Commissioner, September 30, 1997.

A review of the choices Florida teachers make about professional development indicates little concentration on content. The following table shows, for a selected sample of districts, the total number of in-service hours

and the total number of hours in math and science content. Only one district devoted 10 percent or more of its professional development to math and science:

Table 1:*

District	All In-Service	Math & Science Number	Percent	District	All In-Service	Math & Science Number	Percent
Alachua	6,567	244	3.7	Bay	5,150	235	4.6
Broward	58,120	4,187	7.2	Calhoun	434	3	0.7
Charlotte	3,050	330	10.8	Citrus	9,407	283	3.0
Collier	4,775	151	3.2	Columbia	6,727	-0-	-0-
Dade	47,041	4,244	9.0	Desoto	1,899	1	0.1
Duval	1,5761	631	4.0	Hillsborough	39,505	3,380	8.6
Orange	22,016	275	1.2				

*1996-1997 Inservice Report, Florida Department of Education. Includes instructional, certificated staff only.

b) Literacy in General

Studies of the scores teachers make on various tests of academic ability reveal that they are more literate than the general population, but, beyond that, conclusions are weak. Studies of the same data sets sometimes come up with conflicts. One cohort study in the 1980s and 1990s found that lower achieving students are over- represented when they begin their pursuit of the profession, but that those who actually graduate from a teacher preparation program come from the top half of the achievement distribution. Of those who took teaching jobs, a third came from the top quartile of the initial distribution. A conclusion was that while some relatively weak people study education, those who complete their studies are not the “dregs” as some have suggested.”⁴

Other studies show that teachers who score well on tests leave the profession faster than lower-scoring teachers. The consensus is stated in a Harvard study: “College graduates with high test scores are less likely to become teachers, licensed teachers with high test scores are less likely to take teaching jobs, employed teachers with high test scores are less likely to stay, and

former teachers with high test scores are less likely to return.”⁵

c) Perceived Ability

A 1999 report by the Office of Educational Research and Improvement in the U.S. Department of Education found that only 20 percent of teachers felt very well prepared to integrate educational technology into classroom instruction or to teach limited English proficient or culturally diverse students. (Fifty-four percent of those teachers actually taught limited English proficient or culturally diverse students, and 74 percent taught students with disabilities.) Only 28 percent of teachers felt very well prepared to use student performance assessment techniques; 41 percent reported feeling very well prepared to implement new teaching methods; and 36 percent reported feeling very well prepared to implement state or district curriculum and performance standards. Surprisingly, the highest number, 71 percent, felt very well prepared to maintain order and discipline in the classroom.

d) Length of Service

The issue of length of service, or experience in the classroom, is not frequently researched on its own. The number of years a teacher stays on the job is not as important an indicator of effectiveness as other factors.

⁴Eric A. Hanushek and Richard R. Pace, “Who Chooses to Teach (and Why)?” *Economics of Education Review*, Vol. 14, No. 2, 1995.

⁵Richard J. Murnane, et. al., “Who Will Teach?” *Policies that Matter* (Cambridge, Mass: Harvard University Press, 1991).

The important policy question is how to identify good teachers and keep them in the classroom. Teachers more frequently leave after 3 or 4 years on the job, especially teachers with academic majors rather than education majors. Presumably, their skills are more marketable or their interests lie elsewhere. Teachers tend to remain in the profession if they have majored in education: 50 percent of teachers with 3 years of teaching or less have an academic major, compared to 36 percent of those with 20 years or more in the classroom.⁶

e) National and International Measures of Student Achievement

The literature review included a number of studies with alarming statistics about the achievement levels of students in the United States and Florida. But analyses of these studies disagreed about whether the deficiencies reflected ineffective teaching as opposed to different approaches to curriculum.

Nevertheless, it has become almost common knowledge that the Third International Mathematics and Science Study (TIMSS) reported deficiencies in students in the United States compared to those of other countries, especially in the upper grades. Only Cyprus and South Africa reported lower scores than twelfth graders in the United States.

Standardized tests limited to students in the United States indicate that the nation as a whole is not producing many “proficient” learners, and neither is Florida. According to the National Assessment of Educational Progress (NAEP), the greatest disparity is with ethnic minorities. In math, the number of White students who scored “proficient” overall was 37 percent nationally and 31 percent in Florida. The number of African-Americans who scored “proficient” was only 5 percent nationally and 4 percent in Florida, and the number of Hispanic-Americans who scored “proficient” was 11 percent nationally compared to 9 percent in Florida.⁷

These facts point out great challenges, and they support efforts to find the cause and improve the situation,

⁶In Florida, the average years of experience is declining slightly, from 13 years in 1996 to 12.4 years in 1999.

⁷NAEP is a national program that has tested a sample of students periodically since 1969. Its purpose is not to assess every student but to provide a national report card.

including the teacher situation. But they do not in themselves support a general criticism of the nation’s teachers because they cannot rule out other factors -- notably curriculum -- that might contribute to the problem.

2. Teacher Recruitment and Certification

a) Supply and Demand

Florida has 213,977 people certified to teach, but only 129,731 (61 percent) of them are employed as classroom teachers. Of those, about 4,000 hold a temporary certificate.⁸

Florida’s projected need for teachers in 1999-2000 is 10,157, with some districts experiencing much greater need than others.⁹ In Hillsborough County, for instance, over a thousand new teachers must be employed this fall.¹⁰

Traditionally, teacher shortages are addressed by lowering standards rather than by preparing more highly qualified applicants. A less frequent response is to improve working conditions to attract and retain people who may already be eligible for employment. In a 1984 study, *Shortages and Gluts of Public School Teachers*, Charles Kerchner commented, “A teacher shortage is measured by lack of credentialed applicants rather than the lack of highly qualified persons.”

b) Certification and Alternative Certification

The literature presents two ideas about how teachers should be prepared: Either states should control the preparation programs and assure that all teachers complete them as a condition of employment, or states should provide alternatives for college graduates who are talented but have not spent years in traditional education programs. The National Council on Teaching for America’s Future (NCTAF) strongly supports the

⁸Source: Florida Department of Education: Teacher Certification Database for certification data; Office of Educational Information and Accountability for employment data.

⁹*Projected Number of Teachers Needed Through 2010-2011*, Florida Department of Education, Office of the Deputy Commissioner for Planning and Budgeting, March 1998.

¹⁰Telephone interview, Hillsborough County Office of Teacher Recruitment.

first idea, but most states have some variation on the second.

Florida's regulations straddle this fence. The statutes and rules are filled with requirements that teacher preparation programs and those who wish to enroll in them must meet. But they also provide for 2-year temporary certificates, which may in practice be re-issued for a total of 6 years, and they allow school districts to initiate their own alternative certification programs, with state approval. So far, only Hillsborough County has implemented a successful, state-approved alternative certification program, and two more are nearing the end of the planning stage.

Other states vary a great deal in their requirements: Texas requires only six units in pedagogy, while some states require 36. Some require a major in education, and some deny an initial license if the teacher's degree was in education.

Most states require teachers to pass tests before becoming licensed or certified, but the tests generally are easy enough to guarantee a high passing rate. Florida requires teachers to take a professional education test, a test of general knowledge, and a subject area test for the area of certification. Over 95 percent pass the professional education test. The general knowledge test may be either the PRAXIS I or the College Level Academic Skills Test (CLAST). CLAST is designed not for teachers but for college sophomores; according to the Department of Education, a person with 10th grade skills can earn a passing score, although some test items are above that level. About half of the prospective teachers pass all required subtests on the first try; most retake it and pass. For example, in October 1997, 57 percent of applicants who took CLAST passed the math portion; by August of 1998, 65 percent had passed. A passing score is 33 of 50 test items, or 66 percent. In this cohort analysis, it is not known whether all the October test-takers were taking it for the first time.¹¹

Empirical studies do not provide much help to a policy maker trying to decide whether to increase or decrease the hurdles. Rather, they suggest that the variables -- including unpredictable variables related to teacher salaries, the economy, and working conditions in the schools -- are too numerous to be adequately

controlled. Following is a discussion of the main comparative analyses conducted within the most recent years.

National Studies: One kind of national "report card" proved unhelpful in focusing on teacher quality -- evaluations of the various states by selected quality issues related to certification rather than to teaching. Either the requirements are changing more rapidly than the comparisons can accommodate, or the reviewers made mistakes. For instance, Florida received a low score -- one out of a possible 12 Quality Indicators -- by the National Council on Teaching and America's Future (NCTAF) in the annual *State-by-State Report Card, Indicators of Attention to Teaching Quality*. Some of the indicators were out-of-date or were defined extremely precisely. For instance, Florida did not get a point for having teachers with National Board Certification because only 17 had attained it and the standard was 20 per state, without adjusting for the size of the state. Today, 22 have attained NBPTS certification, so Florida should score that point.

Until recently, studies of certification versus alternative certification focused on the quality of the education provided to the teacher, not the effect of the teacher on students. Many of the broader studies conclude that certification assures that ignorant people may not become teachers, but not that all teacher candidates are well-educated.¹² Also, hiring practices may add as many hurdles as the requirements for certification.

Studies based on student achievement are no more conclusive, and even when they do suggest conclusions, caveats usually follow. In general, however, students of alternate-route teachers do at least as well as students in classes taught by teachers who went through the traditional certification process.

When traditional certification appears to result in higher student performance, the real reason might be that traditionally certified teachers tend to come from families with higher incomes, and they are more likely to get jobs in better schools. There is plenty of evidence in the literature for these tendencies, especially the markedly higher number of out-of-field teachers assigned to schools with more students in poverty. In schools with the highest minority enrollments, students have less than a 50 percent

¹¹Florida Department of Education, *Florida Teacher Certification Examinations Technical Report 1997-1998*, Table 17.

¹²Naomi Schaefer, *Traditional and Alternative Certification: A View from the Trenches*; The Thomas B. Fordham Foundation, 1999.

chance of getting a science or mathematics teacher who is certified to teach science or math.¹³

In one case, however, a significant difference was found between teachers holding regular versus alternative certificates. That occurred when the scores earned by certified teachers on the National Teacher Exam were part of the regression analyses. Then student performance increased as teachers' average scores increased. This result is a better argument for a content requirement or a literacy requirement than for a pedagogy requirement for teachers.

One study, surprisingly, found no evidence of an advantage for standard certification over *emergency* certification, but a statistically significant advantage for standard certification over *out-of-field* certification. The caveat offered is that school districts and principals screened teachers with emergency certificates more carefully for content knowledge and ability than they did teachers with standard certification¹⁴.

A more important caveat is that the study of emergency certification was based on data in the *National Education Longitudinal Study of 1988*, years before the "emergency" was so widespread as it is today. In the case of a severe teacher shortage, one in which principals may not have the luxury of careful selection, these results could be negated. For instance, preliminary data from California attribute lower-than-expected gains in student achievement directly to the less well-qualified and inexperienced teachers employed because of the mandated reduction in class size.

Another consideration is that the school system may also have provided better support to the teachers employed on emergency certification. On-the-job support -- particularly with peer assistance and planning -- receives high ratings with many comparative researchers, particularly international comparisons. Opinion surveys of teachers also provide evidence for school-based professional development over pedagogy that is exclusively theoretical.

¹³J. Oakes, *Multiplying Inequalities: The Effects of Race, Social Class, and Tracking on Opportunities to Learn Mathematics and Science*, RAND Corporation, 1990.

¹⁴Goldhaber and Brewer, *op. cit.*

Florida's Position: Under Florida's certification requirements, not many teachers have historically entered the profession through bona fide "alternative" certification, that is, a route to full professional certification that bypasses an approved teacher preparation program at a college of education. Rather, Florida authorizes three alternate routes by which an applicant may be authorized to teach without completing a state approved teacher preparation program. The alternate routes lead to a *temporary certificate* rather than a *professional certificate*.

It is possible that the characteristics of Florida's temporary certificate are more like those of an emergency license than an alternative certificate in other states. No test of general knowledge is required and no education courses must be completed until the teacher applies for a professional certificate.

Details are in rules of the State Board of Education, but generally a person may be eligible for a Florida temporary certificate if he or she possesses one of the following:

- A bachelor's or higher degree from an accredited institution with a degree major in an area in which Florida offers a certification coverage and a GPA of at least 2.5 in the major subject.
- A bachelor's or higher degree from an accredited institution with 30 semester credit hours in an area in which Florida offers a certification coverage and a GPA of at least 2.5 in the 30 content hours.
- A valid out-of-state certificate.

Holding an out-of-state certificate is the only route to a temporary certificate for elementary school teachers. They cannot complete the content area specialization of the other routes without taking education courses. Also, under certain conditions a teacher with an out-of-state certificate may meet all the requirements for a professional certificate.

No studies have been located that gauge the effectiveness of Florida's teachers with temporary certificates. Based on evidence from other states, their performance would probably benefit from a significant level of on-the-job support through mentoring and planning, and a comprehensive and well-planned professional development component. Florida has eliminated a former requirement that teachers with temporary certificates must be placed in schools that have an approved Professional Orientation Program.

The survey of school districts (discussed below) indicates a good level of support for new teachers but

less attention to a professional development component. The 1999 Legislature required and funded a system of statewide professional development academies, but they are in various stages of implementation, and no data are available to tell whether they are providing adequate assistance to teachers with temporary certificates.

B. School District Survey:

Forty-eight of the 67 school superintendents responded to a survey designed to identify innovative practices to support and encourage effective teaching, including professional development activities, mentoring, and other methods of assisting teachers. The responses indicate work in recruitment, support for new teachers, and the selection and delivery of professional development activities.

1. Recruitment:

Thirty-three districts report that they have a program to recruit college students into the teaching profession. However, most of these programs consist of recruiting people who have already decided to become teachers or who have recently become certified. Some consist only of efforts to recruit minority teachers. Only two have programs to encourage liberal arts students to enroll in a teacher preparation program. One has an alternative certification program for mid-career college graduates who work in the school system in positions other than teachers.

2. Support for new teachers:

An impressive 44 school districts assign a mentor to new teachers, and 34 of those report that the mentor receives compensation for the work. Some of those compensate the mentor with “points” rather than money. The points count toward the 300 needed to renew a 5-year certificate.

Thirty-eight districts report that they provide new teachers with training in classroom management. Sixteen provide and pay the teacher and mentor for extra time to plan.

3. Professional development delivery:

Twenty-three school districts reported that they require teachers to attend professional development activities, but the definition of these activities varied so much that analysis is misleading. For instance, one reported nine days of required professional development. When called to explain, the administrator clarified that only one hour is required on each of nine days. The

maximum required by any district is 5 days. Eight districts require 2 days, four require 3 days, and six require 4 days. Often the days reported are during pre-planning and post-planning periods.

In answer to a question on whether attendance at required professional development activities is a problem, only one district reported that it was. Teachers are allowed to use their compensatory or personal leave, and many prefer to use it on days when students are not present. When asked specifically about the personal leave policy, district officials reported that teachers may use personal leave in lieu of attendance, but they do not collect data on the extent to which it is used. An incentive for teachers to attend regularly is to accrue points required for recertification. One district reported that none of their teachers had to resort to college courses to renew their certificates.

4. Professional Development Selection:

Six districts reported that professional development choices are not under the principal’s control; 30 reported some level of control; and nine reported that the principal controls the professional development of teachers at his or her school. Many commented that the school’s advisory committee selects the professional development activities.

A key provision in the 1999 Appropriations Act requires principals to take an active role in selecting professional development activities for the school’s teachers. Another provision in Florida’s new accountability law, the “A-plus Plan,” requires a review of the performance evaluations of teachers in failing schools and intervention if any of them need improvements in general knowledge or basic skills.

C. Conclusion

Available research does not provide a clear answer to the question of what states should require of every teacher. Some of the clearest characteristics of teacher effectiveness might not stand up if we required every teacher to have them. For instance, the benefits attributed to higher education might be because teachers who actively pursue advanced degrees are more dedicated to the profession and more interested in the subject. If we required advanced degrees of teachers who were less dedicated or who had less intellectual curiosity, those benefits might disappear.

In spite of these uncertainties, evidence is sufficient to support the following assumptions:

- The most talented high school students frequently decide prematurely that they do not want to be teachers. It would be worthwhile to expand recruitment programs such as *Teach for America* to change this perception.
- The certification system should not discourage liberal arts majors who are interested in teaching but who also want to complete an academic major.
- The certification process should encourage people who demonstrate an interest in teaching after pursuing another career for a time. People who are already working in schools are the obvious candidates for recruitment, as the Hillsborough County School District has demonstrated. The successful Troops to Teachers program is another example, and the Federal government has recently funded a similar program for other professions.
- Florida's system of grading schools should motivate efforts to improve the ability of teachers at poorly performing schools to be effective. School grading has already brought profound change to teachers at those schools, including the kind of scrutiny that would make anybody nervous. It will be important to find positive ways to introduce assistance.

RECOMMENDATIONS

The Legislature should carefully weigh the findings of the Department of Education's review of Chapter 231, F.S., *Personnel of School System*. That report is not due until January. The following recommendations are preliminary to that report, and the Legislature should reconsider them when its findings are disclosed:

1. Florida should develop a statewide approach to recruiting and preparing teachers who possess the characteristics identified in effective teachers. This approach should include recruiting components in liberal arts colleges and among college graduates in other careers. It should involve a comprehensive, state-level alternative to the traditional certification process.
2. Florida should abandon its practice of allowing school districts to develop alternative certification programs on their own, even with a requirement for state-level approval.
3. The Department of Education should include in its review an evaluation of the level of support provided to teachers working with temporary certificates. Then the Legislature should specify minimal levels of required professional development and on-the-job support for teachers who hold temporary certificates.
4. The research community should investigate carefully the effects of school grading on teacher effectiveness. The potential is high for adverse effects to occur as a result of well-meant but intrusive scrutiny. In particular, the potential for value-added research to identify "the best and the worst" teachers should be used very cautiously during turbulent times.

COMMITTEE(S) INVOLVED IN REPORT (*Contact first committee for more information.*)

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MEMBER OVERSIGHT

Senators Cowin and Horne