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10 Attorneys for Defendant State of California

11 **SUPERIOR COURT OF THE STATE OF CALIFORNIA**

12 **CITY AND COUNTY OF SAN FRANCISCO**

13

14 ELIEZER WILLIAMS, et al.,) Case No. 312 236
15)
16 Plaintiffs,) Date Action Filed: May 17, 2000
17)

18 vs.)
19)
20 STATE OF CALIFORNIA, DELAINE)
21 EASTIN, State Superintendent)
22 Of Public Instruction, STATE)
23 DEPARTMENT OF EDUCATION, STATE)
24 BOARD OF EDUCATION,)

25 Defendants.)

26 STATE OF CALIFORNIA)

27 Cross-Complainant,)

28 vs.)

29 SAN FRANCISCO UNIFIED SCHOOL)
30 DISTRICT, et al.,)

31 Cross-Defendants.)

32

33 **EXPERT WITNESS DECLARATION RE CHRISTINE H. ROSSELL, Ph.D.**

34

35

1 I, Paul B. Salvaty, declare as follows:

2
3 1. I am an attorney with the law firm of O'Melveny & Myers
4 LLP, counsel of record herein for defendant State of California
5 ("the State").

6
7 2. The State has provided a list of persons whose expert
8 opinion testimony the State intends to offer at trial of this
9 action, either orally or by deposition testimony. The list
10 includes Professor Christine Rossell, to whom this declaration
11 refers.

12
13 3. Professor Rossell has agreed to testify at trial.

14
15 4. Professor Rossell will be sufficiently familiar with
16 the pending action to submit to a meaningful oral deposition
17 concerning the specific testimony, including any opinions and
18 their bases, that Professor Rossell is expected to give at trial.

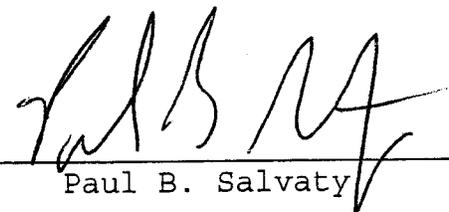
19
20 5. Professor Rossell's fee for providing deposition
21 testimony, consulting with the State, conducting research and
22 other activities undertaken in preparation of the attached report
23 is \$200 per hour.

24
25 6. Pursuant to Section 2034(f)(2)(A) of the California
26 Code of Civil Procedure, attached hereto as Exhibit A and
27 incorporated herein by reference is a curriculum vitae providing
28 Professor Rossell's professional qualifications.

1 7. Attached hereto as Exhibit B and incorporated
2 herein by reference is Professor Rossell's expert report.
3 Pursuant to Section 2034(f)(2)(B) of the California Code of Civil
4 Procedure, the following is a brief narrative statement of the
5 general substance of the testimony that Professor Rossell is
6 expected to give at trial. Professor Rossell addresses the
7 arguments raised in several of plaintiffs' expert reports
8 including plaintiffs' claims that poor and EL students are
9 disproportionately taught by teachers with emergency credentials;
10 emergency credentialed teachers have a negative impact on student
11 achievement; there is an achievement gap between fluent students
12 and EL students; California lags behind other states in per pupil
13 expenditures; plaintiffs' claims regarding the condition of
14 school facilities and their impact on student achievement.
15 Professor Rossell further opines that many aspects of
16 California's educational program have been given high ratings by
17 independent organizations; that plaintiffs' experts have changed
18 their own opinions over time; and that plaintiffs' arguments are
19 really just attacks on the democratic process and local control.
20 The foregoing statements are only a general summary of the issues
21 and conclusions discussed and documented more fully in Professor
22 Rossell's expert report.

23 I declare under penalty of perjury that the foregoing
24 is true and correct.

25 Executed this 18th day of April, 2003, at Los Angeles,
26 California.

27
28 
Paul B. Salvaty

11/29/02

VITA

Christine H. Rossell

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EDUCATION: Ph.D., Political Science, University of Southern California, January 1974;
M.A., Political Science, California State University, Northridge, June 1969;
B.A., International Relations (Latin America), UCLA, June 1967.

FIELDS OF CONCENTRATION: Public policy; public policy analysis; school desegregation and educational policy; bilingual education; urban politics and policy; methodology. Dissertation: "The Electoral Impact of School Desegregation in 67 Northern Cities," University of Southern California, 1973.

ACADEMIC POSITIONS

Boston University, Political Science Department, 1975 -present

Professor, 1989-present; Associate Professor (tenured), 1982 -1989; Assistant Professor, 1975 -1982.

Administrative Responsibilities: Chairperson, 1992 -1995; Assistant Chairperson, 1982 -1985; Director of Undergraduate Studies, 1985 -1992.

Public Policy Institute of California, Visiting Fellow, Jan. 1 -June 1, 1999.

University of Canberra (Canberra, Australia)
(formerly CCAE), Visiting Lecturer, Fall 1985.

University of California, Berkeley, Graduate School of Public Policy
Visiting Assistant Professor, Jan. - June 1981.

Duke University, Institute of Policy Sciences
Visiting Assistant Professor, 1977 -78.

University of Maryland, College Park
Research Associate, Bureau of Governmental Research; Lecturer, Institute for Urban Studies; 1974 -75.

Pitzer College (the Claremont Colleges, Claremont, Calif.)
Assistant Professor, Political Studies, 1973 -74.

Johns Hopkins University
Research Assistant, Center for Metropolitan Planning and Research, , 1972 -73.

ACADEMIC AWARDS AND RESEARCH GRANTS

Who's Who in America, 1995, 1996, 1997, 1998, 1999, 2000; 2001; 2002; Who's Who in the World, 1995-96, 1999-2000; 2001; Who's Who in American Education, 1994-95, 1995-96, 1996-97.

Dean's Award for Outstanding Teaching, College of Arts and Sciences, Boston University, 2000.

Fellowship, Public Policy Institute of California, San Francisco, CA, Jan. 1 -June 1, 1999.

with Keith Baker, "Bilingual Education Reform in Massachusetts," Pioneer Institute, 1992 -95.

with Keith Baker, "Bilingual Education as a Civil Rights Policy," Smith Richardson Foundation, 1991 -92.

"Magnet Schools and Issues of Public School Desegregation, Quality, and Choice," (contract LC 90043001) awarded to American Institutes for Research by the Department of Education, subcontracted to me as co-principal investigator, 1990-93.

"The Effectiveness of Desegregation Plan Characteristics in Producing Interracial Exposure," funded by the Department of Education, 1987-88.

"The Long-Term Impact of Magnet Schools as Desegregation Tools," funded by the National Institute of Education, 1983-1985

Co-Investigator, "Assessment of Current Knowledge About the Effectiveness of School Desegregation Strategies," funded by the National Institute of Education, 1979-81.

Abt Associates award for the best essay on social policy, 1979.

Co-principal Investigator with J. Michael Ross, "The Long-Term Effect of Court-Ordered School Desegregation on White Withdrawal from Central City Public School Systems: the Case of Boston, 1974-79," funded by the Ford Foundation and the Carnegie Corporation, 1978-79.

"The Social Impact of School Desegregation," funded by the National Institute of Education, 1973-76.

Graduate School Awards: Haynes Foundation Graduate Research Fellowship, 1972-73; Teaching Fellowship, Political Science Dept., 1970-72; University Grant, 1971; Graduate Tuition Award, 1970; University of Southern California.

PUBLICATIONS

Books

Christine H. Rossell, David J. Armor, and Herbert Walberg, (eds.) School Desegregation in the 21st Century, Westport, Ct.: Praeger Publishers, 2002.

Christine H. Rossell and Keith Baker, Bilingual Education in Massachusetts: the Emperor Has No Clothes. Boston, MA: Pioneer Institute, 1996.

- Chapter 3 reprinted in Nicholas Capaldi, Immigration: Debating the Issues. (Amherst, N.Y.: Prometheus Books, 1997)

Christine H. Rossell, The Carrot or the Stick for School Desegregation Policy: Magnet Schools vs. Forced Busing. (Philadelphia: Temple University Press, 1990).

Christine H. Rossell and Willis D. Hawley (eds.). The Consequences of School Desegregation. (Philadelphia: Temple University Press, 1983).

Willis D. Hawley, Robert L. Crain, Christine H. Rossell, Janet Schofield, Janet Eylor, and others. Strategies for Effective Desegregation. (Lexington, Ma.: Lexington Books, 1983).

Journal Articles and Book Chapters

"The Evolution of School Desegregation Plans Since 1954" in Stephen Caldas and Carl Bankston (eds), The End of School Desegregation? Nova Science Publishers, forthcoming 2003. [65]

"Dismantling Bilingual Education: the Impact of Proposition 227 in California," Education Next, forthcoming Summer 2003. [64]

"The Desegregation Efficiency of Magnet Schools," Urban Affairs Review (formerly Urban Affairs Quarterly), forthcoming May 2003. [63]

*with David J. Armor and Herbert J. Walberg, "Introduction: Assessing the Promise of *Brown*," in Rossell, Armor, and Walberg, (eds.), School Desegregation in the 21st Century, pp. 1-16. Westport, Ct.: Praeger Publishers, 2002. [62]

"The Effectiveness of Desegregation Plans," in Rossell, Armor, and Walberg, (eds.), School Desegregation in the 21st Century, pp. 67-118. Westport, Ct.: Praeger Publishers, 2002. [61]

"Ability Grouping and Classroom Desegregation," in Rossell, Armor, and Walberg, (eds.), School Desegregation in the 21st Century, pp. 189-234. Westport, Ct.: Praeger Publishers, 2002. [60]

*with David J. Armor, "Attitudes on Race and Desegregation," in Rossell, Armor, and Walberg, (eds.), School Desegregation in the 21st Century, pp. 291-322. Westport, Ct.: Praeger Publishers, 2002. [59]

with David J. Armor and Herbert J. Walberg, "The Outlook for School Desegregation," in Rossell, Armor, and Walberg, (eds.), School Desegregation in the 21st Century, pp. 323-334. Westport, Ct.: Praeger Publishers, 2002. [58]

with David J. Armor, "Desegregation and Resegregation in the Public Schools," in Abigail Thernstrom and Stephen Thernstrom, Beyond the Color Line, pp. 219-258. Palo Alto, CA: Hoover Institution Press, 2002. [57]

"All That Glitters is Not Gold: the Limits of the California Department of Education's English Learner Achievement Data," Read Perspectives, vol. 8, Fall 2001: 151-168. [56]

"Is One Year Enough?," in The ABCs of English Immersion: a Teacher's Guide. Washington, D.C.: Center for Equal Opportunity, 2000. [55]

"Educating Limited English Proficient Students," American Language Review, September/October 2000 (4): 15-19. [54]

"Different Questions, Different Answers: A Critique of the Hakuta, Butler and Witt Report, 'How long does it take English learners to attain proficiency?'," READ Perspectives, Volume VII, October 2000: 134-154. [53]

"The Federal Bilingual Education Program: Title VII of the Elementary and Secondary Education Act," in Brookings Papers on Education Policy, 2000, edited by Diane Ravitch, Washington, D.C.: Brookings Institution, 2000: 215-244. [52]

"Teaching Language Minorities: Theory and Reality," in City Schools: Lessons From New York, edited by Diane Ravitch and Joseph Viteritti, Baltimore: Johns Hopkins University Press, 2000: 187-218. [51]

"Mystery on the Bilingual Express: a Critique of the Thomas and Collier Study," Read Perspectives, V (2), Fall 1998: 5-32.

- **Reprinted** in Rosalie Porter (ed.), Educating Language Minority Children, Vol. 6 of Read Perspectives, 2000 [50]

"The Convergence of Black and White Attitudes on School Desegregation Issues," in Redefining Equality, Neal Devins and Dave Douglas (eds.). New York: Oxford University Press, 1998. [49]

"An Analysis of the Court Decisions in *Sheff v. O'Neill* and Possible Remedies for Racial Isolation," Connecticut Law Review, vol. 29 (3), Spring 1997: 1187-1233. [48]

*with Keith Baker, "Response," Research in the Teaching of English, October 1996, 30 (3): 70-86 (symposium). [47]

"Is Bilingual Education an Effective Tool?" in Jorge Amselle (ed.), The Failure of Bilingual Education, Washington, D.C., The Center for Equal Educational Opportunity, 1996. [46]

*with Keith Baker, "The Educational Effectiveness of Bilingual Education," Research in the Teaching of English, February 1996, 30 (1): 7-74. [45]

*with David Armor, "The Effectiveness of School Desegregation Plans, 1968 -1991," American Politics Quarterly, July 1996, 24 (3): 267-302. [44]

"The Convergence of Black and White Attitudes on School Desegregation Issues During the Four Decade Evolution of the Plans," The William and Mary Law Review, January 1995, 36(2): 613-663. [43]

"Controlled Choice Desegregation Plans: Not Enough Choice, Too Much Control?" Urban Affairs Review (formerly Urban Affairs Quarterly), September 1995, 31(1) 43-76. [42]

"The Progeny of Brown: From the Old Freedom of Choice to the New Freedom of Choice in Four Decades," Urban Geography, 15 (5), July-August 1994: 435-453. [41]

• Reprinted in Readings on Equal Education, Charles Teddlie and Richard Fossey (ed s.), vol. 15, 1996.

*with Christine Bachen, "Advertising on Channel One: Are Students a Captive Audience?" The High School Journal, February 1993, 76 (2): 100-109. [40]

"Using Multiple Criteria to Evaluate Public Policies: the Case of School Desegregation," American Politics Quarterly, April 1993 (21): 155-184. [39]

"Nothing Matters? A Critique of the Ramirez, et. al. Longitudinal Study of Instructional Programs for Language Minority Children," Bilingual Research Journal, 16 (1 & 2), Winter & Spring 1992: 159-186. [38]

"Bilingual Education and Bilingual Certified Teachers: Are They Necessary?" in Keith Baker (ed.), Bilingual Education: Legal Issues, Bloomington, IN: Phi Delta Kappa, 1991. [37]

"The Effectiveness of Educational Alternatives for Limited English Proficiency Children," in Gary Imhoff (ed.), The Social and Cultural Context of Instruction in Two Languages: From Conflict and Controversy to Cooperative Reorganization of Schools. (New York: Transaction Books, 1990). [36]

"The Research on Bilingual Education," Equity and Choice, 6 (2), 1990, 29-36. [35]

"The Carrot or the Stick for School Desegregation Policy?" Urban Affairs Quarterly, 25 (3), 1990, 474-499.

with Robert Crain, "Catholic Schools and Racial Segregation" in Public Values, Private Schools, Neal Devins (ed.). (Stanford: Falmer Press, 1989). [33]

"How Effective are Voluntary Plans with Magnet Schools?" Educational Evaluation and Policy Analysis, 10 (4), 1989, 325-342. [32]

*with Charles Glenn, "The Cambridge Controlled Choice Plan," The Urban Review, 20 (2), 1988, 75-94. [31]

*with Keith Baker, "Selecting and Exiting Students in Bilingual Education Programs," Journal of Law and Education, 17 (4), Fall, 1988, 589-624. [30]

"The Problem with Bilingual Education Research: A Critique of the Walsh and Carballo Study of Massachusetts Bilingual Education Programs," Equity and Excellence, 23 (4) Summer 1988, 25-29. [29]

"Race and Ethnic Relations Among High School Youth: Perspectives From Political Science," International Journal of Group Tensions, 18, Spring 1988, 44-55. [28]

"Is it the Busing or the Blacks?," Urban Affairs Quarterly, 24, September 1988, 138-148. [27]

- "The Buffalo Controlled Choice Plan," Urban Education, 22, October 1987, 328-354. [26]
- "Does School Desegregation Policy Stimulate Residential Integration? A Critique of the Research," Urban Education, 21, Jan. 1987, 403-420. [25]
- with Keith Baker, "An Implementation Problem: Specifying the Target Group for Bilingual Education," Educational Policy, 1 (2), 1986-87. [24]
- *with J. Michael Ross, "The Social Science Evidence on Bilingual Education." The Journal of Law and Education, 15, Fall 1986, 385-419. [23]
- Reprinted in M. Yudof, D. Kirp, and B. Levin, Educational Policy and the Law (St. Paul: West Publishing Company, 1992).
- "Estimating the Net Benefit of School Desegregation Reassignments," Educational Evaluation and Policy Analysis, 7, Fall 1985, 217-227. [22]
- "What is Attractive About Magnet Schools?" Urban Education, 20, April 1985, 7-22. [21]
- "Applied Social Science Research: What Does It Say About the Effectiveness of School Desegregation Plans?" Journal of Legal Studies, 12, January 1983, 69-107. [20]
- *with W.D. Hawley, "Introduction: Desegregation and Change," in Christine H. Rossell and Willis D. Hawley (eds.), The Consequences of School Desegregation. (Philadelphia: Temple University Press, 1983). [19]
- "Desegregation Plans, Racial Isolation, White Flight, and Community Response," in Christine H. Rossell and Willis D. Hawley (eds.), The Consequences of School Desegregation. (Philadelphia: Temple University Press, 1983). [18]
- with W.D. Hawley and Robert L. Crain, "Directions for Future Research," in Christine H. Rossell and Willis D. Hawley (eds.), The Consequences of School Desegregation. (Philadelphia: Temple University Press, 1983).
- *with Robert L. Crain, "The Importance of Political Factors in Explaining Northern School Desegregation," The American Journal of Political Science, 26, November 1982, 772-796. [16]
- *with W.D. Hawley, "Policy Alternatives for Minimizing White Flight," Educational Evaluation and Policy Analysis, 4, Summer 1982, 205-222. [15]
- *with W.D. Hawley, "Understanding White Flight and Doing Something About It," in W.D. Hawley, (ed.), Effective School Desegregation (Beverly Hills, Ca.: Sage Publications, 1981) pp. 157 -184. [14]
- "The Atheoretical Nature of Desegregation," Educational Evaluation and Policy Analysis, 3, May-June 1981, 95-97. [13]
- "Social Science Research in Educational Equity Cases: a Critical Review," Review of Research in Education, 8, 1980, 237-295. [12]
- "Magnet Schools as a Desegregation Tool: the Importance of Contextual Factors in Explaining Their Success," Urban Education, 20, October 1979, 303-320. [11]
- "School Desegregation and Community Social Change," Law and Contemporary Problems, 42, Summer 1978, 133-183. (10)
- "White Flight: Pros and Cons," Social Policy, 9, November/December 1978, 46 -51. (9)

- "A Response to 'The White Flight Controversy,'" The Public Interest, 53, Fall 1978, 109-111. (8)
- "The Effect of School Integration on Community Integration," Journal of Education, 160, May 1978, 46-62.
- "The Effect of Community Leadership and the Mass Media on Public Behavior," Theory Into Practice, 17, April 1978, 131-139. (6)
- "Boston's Desegregation and White Flight," Integrated Education, January-February 1977, 36-39. (5)
- "The Mayor's Role in School Desegregation Implementation," Urban Education, 12, Fall 1977, 247-270. (4)
- "School Desegregation and White Flight," Political Science Quarterly, 92, Winter 1975-76, 675-696;
- Reprinted in N. Mills, ed., Busing USA, (N.Y.: Columbia University Teacher's College Press, 1979);
 - Reprinted in D. Caraley and M. Epstein, ed., The Making of American Foreign and Domestic Policy, (Farmingdale, N.Y.: Dabor Social Science Publications, 1978). (3)
- "School Desegregation and Electoral Conflict," in F. Wirt, ed., The Polity of the School (Lexington, Ma.: Lexington Books, 1975) pp. 49-64. (2)
- "Measuring School Desegregation," Chapt. 12 in Political Strategies in Northern School Desegregation, D.J. Kirby, T.R. Harris, R.L. Crain, and C.H. Rossell (Lexington, Ma.: Lexington Books, 1973) pp. 171-203. (1)

Book Reviews

- Lorraine M. McDonnell, P. Michael Timpane, and Roger Benjamin (Eds.) Rediscovering the Democratic Purposes of Education. Lawrence, Kansas. The University Press of Kansas, 2000 in American Political Science Review, 96 (02) June 2002, 429-430. [9]
- Steven Taylor, Desegregation in Boston and Buffalo: the Influence of Local Leaders, (Albany, N.Y.: The State University of New York Press, 1998, in American Political Science Review, June 2000. [8]
- Ronald P. Formisano, Boston Against Busing: Race, Class, and Ethnicity in the 1960s and 1970s (Chapel Hill and London, The University of North Carolina, 1991 in Political Science Quarterly, 107, Fall 1992, 558. [7]
- Mark A. Chesler, Joseph Sanders, and Debra Kalmuss, Social Science in Court (Madison: The University of Wisconsin Press, 1988) in Contemporary Sociology, 19 (2), March 1990, 263-264. [6]
- Charles V. Willie, School Desegregation Plans That Work (Westport, CT.: Greenwood Press, 1984) in Contemporary Sociology, 14, May 1985, 392-394. [5]
- Emmett H. Buell, Jr., School Desegregation and Defended Neighborhoods (Lexington, Ma.: Lexington Books, 1982) in Political Science Quarterly, 98, Winter 83-84. [4]
- Robert H. Salisbury, Citizen Participation in the Public Schools (Lexington, Ma.: Lexington Books, 1980) in Political Science Quarterly, 96, Spring 1981, 169-171. [3]
- Florence H. Levinsohn and Benjamin D. Wright, eds., School Desegregation, Shadow and Substance, (Chicago: University of Chicago Press, 1976) in Political Science Quarterly, 92, Spring 1977, 136-137. [2]
- Howard D. Hamilton and Sylvan H. Cohen, Policymaking by Plebiscite: School Referenda (Lexington, Ma.: Lexington Books, 1974) in The American Political Science Review, 71, Sept. 1977, 1181-1182. [1]

TECHNICAL REPORTS

- Rebuttal Report on the Student Assignment Plan of the Lynn Public Schools," a report prepared in the case of Comfort v. Lynn and Commonwealth of Massachusetts and Bollen v. Lynn, May 10, 2002. [67]

"Opinions on the Secondary Student Assignment Policy in San Jose Unified School District," a report to the San Jose Unified School District, April 25, 2002. [66]

"Dismantling Bilingual Education, Implementing English Immersion: the California Initiative," February 20, 2002. [65]

"Desegregation Issues in the Dayton Public Schools," a report prepared in the case of *Brinkman v. Gilligan*, February 8, 2002. [64]

"The Desegregation of the Benton Harbor Area School District," a report prepared in the case of *Berry, et al. v. School District of the City of Benton Harbor, et al.*, July 6, 2001. [63]

"The Desegregation of the Kansas City, Missouri School District, From Brown to 2000 -01," a report prepared for the case of *Jenkins, et al. v. State of Missouri, et al.*, February 7, 2001. [62]

"Supplemental Report on Tracking and Ability Grouping in the Woodland Hills School District," a report prepared for the case of *Hoots, et al. v. Commonwealth of Pennsylvania, et al.*, May 9, 2000. [61]

"Bilingual Education in California Before and After Proposition 227," a report to the Public Policy Institute of California, March 17, 2000. [60]

"Compliance with the Green Factors in Woodland Hills, Pennsylvania," a report prepared for the case of *Hoots, et al. v. Commonwealth of Pennsylvania, et al.*, March 1, 2000. [59]

"Rebuttal Report on Within-School Integration in the Rockford School District," a report prepared for the case of *People Who Care, et al. v. Rockford Board of Education, School District No. 205* (Rockford, IL), February 20, 2000. [58]

"Is it Possible to Detrack?" a report to the San Jose Unified School System, January 10, 2000. [57]

"Within-School Integration in the Rockford School District, Fall 1999," a report prepared for the case of *People Who Care, et al. v. Rockford Board of Education, School District No. 205* (Rockford, IL), December 10, 1999. [56]

"Improving the Voluntary Desegregation Plan in the Baton Rouge School System," a Report to the Court in the case of *Davis, et al. v. East Baton Rouge Parish School Board, et al.*, October 28, 1999. [55]

"Testimony Of Christine Rossell at January 20, 1999 Administrative Law Hearing in the Matter of the Proposed Adoption Of Rules Relating To Desegregation (Minn. Rule, Parts 3535.0100 to 3535.0180) on Behalf of Dept. of Children, Families, and Learning, State Board of Education". [54]

"A Report on Educational Equity Issues in the St. Paul School District" prepared for the state of Minnesota in the case of *Independent School District No. 625, St. Paul, MN, et al v. State of Minnesota, et al.*, December 27, 1998. [53]

"Declaration of Christine H. Rossell," prepared for the U.S. District Court in the case of *Valeria G. et al. v. Pete Wilson [Governor of State of California] et al.*, July 15, 1998. [52]

"The Compliance of the St. Louis Special School District with Desegregation and Vocational Educational Goals," a report to the Federal District Court in the case of *Liddell et al. vs. the Board of Education of the City of St. Louis, Missouri and the State of Missouri, et al.*, Dec. 12, 1997. [51]

"A Rebuttal Report Analyzing the Cleveland City School District's Compliance with Remedial Components," a report to the Federal District Court in the case of *Reed v. Rhodes*, Oct. 6, 1997. [50]

"The Effectiveness of Magnet Schools and Programs in the Cleveland City School District," a report to the Federal District Court in the case of Reed v. Rhodes, Sept. 15, 1997. [49]

with R. Peterkin, R. Shoenberg, and W. Trent, "Report of the Court -Appointed Panel in Vaughns et al. v. Prince George's County Board of Education, et al. Submitted to Judge Peter J. Messitte, June 30, 1997. [48]

"Declaration of Christine H. Rossell," prepared for the U.S. District Court in the case of Quiroz et al. v. Orange Unified School District and the State of California. September 9, 1997. [47]

"Declaration of Christine H. Rossell," prepared for the Orange Unified School District for presentation to the California State Board of Education, June 8, 1997. [46]

"School Desegregation in the Kansas City, Missouri School District, 1954-1996" a report to the U.S. District Court in the case of Jenkins, et al v. State of Missouri, et al., January 2, 1997. [45]

"Declaration of Christine H. Rossell," prepared for the Magnolia School District for presentation to the California State Board of Education, 1996. [44]

"An Analysis of the San Jose Unified School District's Compliance with its Remedial Orders on Student Assignment and Transportation," a report to the U.S. District Court, Northern District of California in the case of Vasquez, et al. v. San Jose Unified School District, et al., June 14, 1996. [43]

"Supplemental Report on School Desegregation in the St. Louis Public Schools, 1995," a report to the U.S. District Court in the case of Liddell, et al. v. St. Louis Board of Education, et al., December 29, 1995. [42]

"School Desegregation in the Rockford Public Schools," a report to the U.S. District Court in the case of People Who Care, et al. v. Rockford Board of Education, School District #205, November 29, 1995. [41]

"School Desegregation in the St. Louis Public Schools, 1967 -1995," a report to the U.S. District Court in the case of Liddell, et al. v. St. Louis Board of Education, et al., November 30, 1995. [40]

"Enrollment Projections for the Yonkers School District from Fall 1995 through Fall 2005," a report to the Superintendent of Schools, Reginald F. Marra, Yonkers Public Schools, April 4, 1995. [39]

*with Peggy Davis-Mullen, Boston City Council, "A Proposal for Transitioning the Boston Public Schools from the Current Controlled Choice Desegregation Plan to Community/Neighborhood Schools," June 2, 1994. [38]

"School and Classroom Desegregation in the New Castle County, Delaware Desegregation Area (Brandywine, Red Clay, Christina, and Colonial School Districts), a report to the federal district court in the case of Coalition to Save Our Children v. State Board of Education, November 30, 1994. [37]

"Results of the San Jose Unified School District's 1994 Phase II Parent Registration Survey," a report to the San Jose Unified School District, San Jose, California, November 15, 1994. [36]

"Enrollment Projections for the Yonkers School District from Fall 1994 through Fall 2004," a report to the Superintendent of Schools, Reginald F. Marra, Yonkers Public Schools, June 1, 1994. [35]

"Results of the San Jose Unified School District's Phase II Parent Registration Survey in Spring 1993," a report to the San Jose Unified School District, San Jose, California, February 2, 1994. [34]

"Enrollment Projections for the Yonkers School District from Fall 1994 through Fall 2004," a report to the Superintendent of Schools, Donald M. Batista, Yonkers Public Schools, April 19, 1993. [33]

"Supplemental Report Analyzing the San Jose Unified School District's Compliance With the Court Order in the Area of Student Assignment (School and Classroom Segregation), a report to the U.S. District Court, Northern

District of California in the case of Vasquez, et al., v. San Jose Unified School District, et al., November 1, 1993. [32]

"An Analysis of the San Jose Unified School District's Compliance With the Court Order in the Areas of Student Assignment (School and Classroom Segregation), Transportation and Bilingual Education," a report to the U.S. District Court, Northern District of California in the case of Vasquez, et al., v. San Jose Unified School District, et al., June 29, 1993. [31]

with David J. Armor, William Clark, and the Dallas Independent School District, "Data and Analysis in Support of the Dallas Independent School District's Unitary Status Motion to the Court," a report to the U.S. District Court in the case of Tasby, et al. v. Woolery, et al., 1993.

with Lauri Steel, Roger Levine, and David Armor, "Magnet Schools and Issues of Desegregation, Quality and Choice, Phase I: the National Survey and In-Depth Study of Selected Districts," a report to the Department of Education, 1993. [30]

"An Analysis of the Segregation of Alternative Proposals for the Reorganization of the Grant Union High School District and Its Feeder Elementary Schools," a report to the Robla School District, Sacramento County, CA, Aug. 3, 1992. [29]

"Advertising on Channel One: Are Students a Captive Audience?" Report to the Superior Court of the State of California in and for the County of Santa Clara, July 29, 1992. [28]

"Enrollment Projections for the Yonkers School District from Fall 1992 through Fall 2001," a report to the Superintendent of Schools, Donald M. Batista, March 23, 1992. [27]

"Estimating the Effectiveness of a Voluntary Magnet School Desegregation Plan for the Stockton Unified School District. A report to the Superior Court of the State of California in the case of Hernandez v. Stockton Unified School District, September 19, 1991. [26]

"White Flight and Elementary Classroom Segregation" in Report on the Desegregation of the San Jose Unified District, a report to the U.S. District Court, April 30, 1991. [25]

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"What Is Attractive About Magnet Schools?" a report to the U.S. Department of Justice, March 15, 1984. [10]

"Options for Desegregating Howard and Madison Street Elementary Schools, Marion County, Florida," a report to the U.S. District Court, Middle District of Florida, Jacksonville, Florida, Nov. 5, 1983. [9]

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"Statistical Measures of Effective Net Reduction in Segregation," a memo to Shirley McCune, Associate Commissioner of Equal Educational Opportunity, Office of Education, February 1980. [6]

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"Monitoring Report of the Boston Public School System," prepared for the U.S. District Court by the Citywide Coordinating Council, August 1977. [3]

Reports to the Court in Carlin v. San Diego Unified School District, 1977, 1979; Seattle School District No. 1 v. State of Washington, U.S. v. Port Arthur Independent School District, 1979. [2]

*With Robert L. Crain, "Evaluating School Desegregation Plans Statistically," (Baltimore, Md.: The Johns Hopkins University Center for Metropolitan Planning and Research, 1973). [1]

PROFESSIONAL ACTIVITY

Advisory Board, READ, Washington, D.C., 1999 -2000.
Advisory Board, Center for Equal Opportunity, Washington, D.C. 1996 -1999
Advisory Board, U.S. Commission on Civil Rights study on school desegregation, 1986 -1987 (Welch and Light, "New Evidence on School Desegregation").
Member, The National Review Panel on School Desegregation Research, an 11 member panel of experts funded by the Ford Foundation, 1977-1980; Participant, "Ethics and Public Policy: Social Inquiry" project sponsored by the Hastings Center Institute of Society, Ethics and the Life Sciences, 1979 -80; Article reviewer for The American Political Science Review, American Journal of Political Science, Urban Affairs Quarterly, Social Science Quarterly, Sociology of Education, American Politics Quarterly; Review of Education Research ; Member, American Political Science Association; American Educational Research Association.

PUBLIC SERVICE

Member of the Massachusetts Bilingual Advisory Council, 2000 -03.

Member of the Citywide Coordinating Council of Boston, 1976 -77, a 15 member body appointed by Judge W. Arthur Garrity to monitor school desegregation and minority sub -committee representation. I was on the working sub-committee which helped develop and train the nine parent -citizen community district councils in Boston.

CONSULTING

Magnet Program Expert Panel, Prince George's County, Maryland in the case of Vaughns v. Prince George's County (Maryland), 2002. [50]

Fulton County (Georgia) School District in the case of Hightower et al. v. West et al., 2001-2002. [49]

Citizens for the Preservation of Constitutional Rights in the case of Comfort v. Lynn and Commonwealth of Massachusetts and Bollen v. Lynn, 2002. [48]

State of Ohio, in the case of Brinkman v. Gilligan, 2001-02 [47]

Kansas City, Missouri School District in the case of Jenkins v. Missouri, 2000-01. [includes Court Testimony] [46]

State of Michigan in the case of Berry, et al. v. Benton Harbor, et al., 2000-01. [45]

Natchez-Adams (Mississippi) School District in the case of U.S. and Nichols v. Natchez Special Municipal Separate School District, 2000-03. [44]

Rockford School District, in the case of People Who Care, et al. v. Rockford Board of Education, School District No. 205 (Rockford, IL), 1999-2000. [includes Court Testimony] [43]

State of Pennsylvania, Attorney General, in the case of Hoots et al. v. Commonwealth of Pennsylvania, et al., [Woodland Hills] 1998-2000. [includes Court Testimony] [42]

State of New York, Attorney General, in the case of CFE, et al. v. State of New York, 1998-99. [includes Court Testimony] [41]

Plaintiffs (Mexican -American Parents) Carbajal v. Albuquerque Public School District, 1998-1999. [bilingual] [40]

State of California, Attorney General, in the case of Valeria G. et al. v. Pete Wilson [in his official capacity as Governor of the State of California] et al, 1998 -2000. [bilingual][39]

State of Minnesota on state desegregation rule, 1998 -1999.

State of Connecticut, Office of the Attorney General, in the case of Sheff v. O'Neill, 1990-91, 1998, 2002 [includes Court Testimony] [38]

Orange Unified School District, in the case of Quiroz, et al. v. State Board of Education, et al., 1997. *[includes Court Testimony] [bilingual]* [37]

State of Ohio and the Cleveland School District, in the case of Reed v. Rhodes, 1997-1998. *[includes Court Testimony]* [36]

Court-Appointed Expert to Federal District Court Judge Peter Mes site, in the case of Vaughns v. Prince George's County (Maryland), 1996-1997. *[includes Court Testimony]* [35]

State of Minnesota, in the case of NAACP v. Minnesota and Saint Paul School District v. Minnesota, 1996-1999. [34]

East Baton Rouge Parish School Board, in the case of Davis v. East Baton Rouge Parish School Board, 1996-2000. [33]

State of Missouri, in the case of Jenkins v. Missouri, (Kansas City) 1996-1997. *[includes Court Testimony]* [32]

Rockford Education Association, in the case of People Who Care, et al. v. Rockford Board of Education, School District No. 205 (Rockford, IL), 1995. *[includes Court Testimony]* [31]

State of Delaware and the Boards of Education of the Brandywine, Christina, Colonial, and Red Clay School Districts in the case of Save Our Children v. State Board of Education of the State of Delaware, et al., 1995. *[includes Court Testimony]* [30]

State of Missouri, in the case of Liddell v. St. Louis Board of Education, et al., 1994-1995. *[includes Court Testimony]* [29]

Dallas Independent School District, in the case of Tasby, et al. v. Woolery, et al. September 1993. *[includes Court Testimony]* [28]

San Jose Unified School District, (Diaz) Vasquez v. San Jose Unified School District, July 1985-present. *[includes Court Testimony in 1986]* [27]

Robla School District, Sacramento County, CA, in the case of Robla School District v. California State Board of Education, 1992. [26]

Department of Education, on reauthorization of Elementary and Secondary Act, May 1992.

East Side High School District, San Jose, CA, in the case of Honig et al. v. East Side Union High School District, 1992. [25]

Duval County, Florida Public Schools, Fall 1991.

Knox County Public Schools, Knoxville, TN, in the case of Middlebrook v. School District of the County of Knox, Tennessee, Jan. 1991-92. *[includes Court Testimony]* [24]

Oakland Unified School District, in the case of Zambrano et al. v. Oakland Unified School, 1989. [bilingual][23]

Savannah-Chatham County School District, Stell v. Board of Public Education for the City of Savannah and the County of Chatham, Jan. 1986-93. *[includes Court Testimony]* [22]

Yonkers School District, U.S. and NAACP v. Yonkers Board of Education; City of Yonkers; and Yonkers Community Development Agency Jan. 1986-present. *[includes Court Testimony]* [21]

Stockton Unified School District, Hernandez v. Stockton Unified School District, 1989-91. [20]

De Kalb County School District, Pitts v. Freeman, Nov. 1986-88. *[includes Court Testimony]* [19]

Ocean View School District, Huntington Beach, CA, Dec. 1990 -1991.

Topeka School District, Brown v. Board of Education, 1990. [18]

Natchez-Adams School District, U.S. and Nichols v. Natchez Special Municipal Separate School District, 1988-1989. [includes Court Testimony] [17]

Berkeley Unified School District, Teresa P. v. Berkeley Unified School District, 1987-1988. [includes Court Testimony] [bilingual] [16]

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The U.S. Commission on Civil Rights, "The Effectiveness of Various School Desegregation Plans in Reducing Student Racial and Ethnic Isolation Between and Within Public Schools" awarded to Unicon Corporation, Los Angeles, CA., June 1985-1987; System Development Corporation, Santa Monica, CA., Sept. 1984 -May 1985; testimony at hearings, June 11, 1987.

The Laurel Amici, Vaughns v. Board of Education of Prince George's County, May-June 1985. [13]

Fort Wayne Community Schools, consultant to the school district on a magnet school plan, 1986.

The U.S. Department of Justice, U.S. and Pittman v. Mississippi and Hattiesburg Municipal School District, 1985-1986, and 1998. [includes Court Testimony, 1986] [12]

The U.S. Dept. of Justice, U.S. v. Charleston County School District and the State of South Carolina, 1982. [11]

Court-appointed expert, U.S. v. Marion County (Florida), 1983-1984. [10]

Mediator for Community Relations Service, U.S. Department of Justice, in Little Rock School District v. Pulaski County, Special School District, et al., 1983. [9]

The U.S. Dept. of Justice, Davis and U.S. v. East Baton Rouge Parish School District, 1982-83. [8]

Contributor to the legal brief presented by the Legal Defense Fund, Inc. to the Supreme Court on behalf of Crawford v. Board of Education of Los Angeles, and Seattle School District v. the State of Washington, Feb. 1982. [7]

Expert witness, Committee on the Judiciary, Subcommittee on Civil and Constitutional Rights, U.S. House of Representatives, Washington, D.C., September 23, 1981.

Expert witness for and consultant to the U.S. Dept. of Justice, U.S. v. Port Arthur Independent School District, 1980. [includes Court Testimony] [6]

Educational Policy Center, Duke University, conducting a meta-analysis of research studies on community reaction to school desegregation and issues of resegregation, interviewing in several cities, and co-authoring the final report on the effectiveness of desegregation strategies, 1979 -80.

Educational Policy Center, Institute of Policy Sciences, Duke University, interviewing and providing information on court appointed advisory monitoring panels, 1979 -80.

Member of the Advisory Board for the Associate Commissioner of Equal Educational Opportunity Programs (Shirley McCune), 1980.

Training Equal Educational Opportunity Program staff (HEW) on the causes and consequences of white flight and policy options, October 17 -18, 1979.

Plaintiffs' expert witness, Crawford v. Board of Education of Los Angeles, 1979-80. [includes Court Testimony] [5]

Educational Policy Development Center - Desegregation, Institute of Policy Sciences, Duke University, 1979-80.

The U.S. Dept. of Justice, Ross v. Houston Independent School District, June 1979. [4]

Plaintiffs' expert witness, Seattle School District No. 1 v. the State of Washington, April - May 1979. [includes Court Testimony] [3]

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Plaintiffs' expert witness, Carlin v. San Diego Unified School District, January 1977, 1979. [includes Court Testimony] [1]

Abt Associates, writing a research proposal to study magnet schools as a desegregation tool, May -June 1977; analyzing data, Summer 1978.

Rand Corporation, designing questionnaire to collect data on school desegregation actions in a national sample, 1976-77.

Office of Education, panel reviewing public service grants and fellowship applications, Spring 1975; Spring 1976; and Spring 1977.

Rand Corporation, Winter 1973 -74, longitudinal design to study school desegregation.

DESEGREGATION PLAN DESIGN ASSISTANCE : Prince George's County, MD, 2002; Baton Rouge, LA (1983 & 1996); Knox County, TN (1991); Ocean View, CA (1990); Stockton, CA (1989); Natchez, MS (1988); San Jose, CA (1986); Yonkers, NY (1986); Savannah -Chatham County, GA (1986); De Kalb, GA (1986); Marion County, FL (1983).

PARENT SURVEYS CONDUCTED: Hattiesburg, MI (1998); Rockford, IL (1995); Knox County, TN (1991); De Kalb, GA (1990); Stockton, CA (1990); Topeka, KS (1990); Natchez, MS (1988); Yonkers, NY (1986); Savannah - Chatham County, GA (1986).

Equity and Efficiency in California Schools

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A report prepared in the case of *Williams v. State of California*,

April 18, 2003

Equity and Efficiency in California Schools

The conclusions and opinions offered in this report are based on my past experience--30 years of research on the effects of school desegregation, bilingual education, and other educational issues, 26 years of consulting for school districts across the country in connection with educational equity court cases, and 30 years of teaching courses on school desegregation, educational policy, policy analysis, and quantitative research methods. This experience is detailed in my Vita which is attached to this report as Appendix 1. My conclusions and opinions are also based on current and past research and analyses of California schools that I have been conducting for the past decade and a half, including analyses of the CDE data files that I have been conducting since 1998. I also compare California's effort and equity to that of other states.

The California constitution does not require an efficient public education even if there were agreement as to what that was or how to achieve it, which of course there is not. Indeed, the specific reference to education in the California constitution is that it must be free and basic. In *Serrano v. Priest* (1976), the California Supreme Court interpreted the equal protection clause of the California Constitution to include education and to require resource equality between poorer and wealthier school districts. This report will, therefore, focus primarily on the issue of equity since it is that violation that has been found to be illegal by the California Supreme Court and only secondarily on the efficiency claims of the plaintiffs.

Emergency Credentialed Teachers

Linda Darling-Hammond and Jeannie Oakes assert that poor students are disproportionately taught by teachers with emergency credentials. Emergency credentials are requested by an employer (school or district) on behalf of an individual who does not qualify for a

credential or internship, but who meets minimum certification requirements. Kenji Hakuta, relying on data analyzed by Gandara and Rumberger (2002),¹ also asserts on p. 19-20 of his report that English Learners are disproportionately exposed to teachers who are not fully credentialed and, furthermore, that this disproportionality exceeds what would be predicted from the percentage poor of these schools. He does not make it clear, however, that emergency credentialed teachers are in the minority in California schools. Only 24 percent of teachers are emergency credentialed. More than 30 percent of California schools have no teachers with emergency credentials and about 2/3 have 10 percent or less.

Table 1 shows a multiple regression analysis, similar to that done by Gandara and Rumberger, but containing important information missing from their report. The data is downloaded from public files made available by CDE at its website.² Indeed, I do not believe there is another state in the nation that collects as much data on its schools and school districts and makes it publicly available as does California.

The percentage of emergency credentialed teachers is modeled by three equations: 1) the percentage of poor students, 2) the percentage of poor students and English Learners, and 3) the percentage of poor students, English Learners, and minority students, whether a school is elementary, the percentage enrolled in bilingual education, and the school size. Equation 2 is the same type of analysis shown in Figure 2 of Kenji Hakuta's report that he asserts shows that English Learners are "significantly" more likely to be taught by teachers with emergency

¹ P. Gandara and R. Rumberger, "The Inequitable Treatment of English Learners in California Public Schools," (2002).

² Data for the analyses of California schools in this report were downloaded from the various publicly available data files posted on the CDE websites: www.cde.ca.gov/demographics; star.cde.ca.gov and others. All schools were analyzed and no sampling was done. Listwise deletion was used in the multiple regression analyses and so the number of schools analyzed will vary depending on whether there is data for a school on all the variables in the equation.

credentials. In fact, however, the strength of the relationship looks larger than it is in the chart on p. 20 of Dr. Hakuta's report because the scale is 0 to 20 percent instead of 0 to 100 percent. In addition, we are given very little information about the equation, of which the most important would be the significance level of the variables and how much the variables explain of the distribution of teachers with emergency credentials among schools.

The explained variation is the r^2 in Table 1. This shows that the percentage of poor students alone (equation 1) explains only 7, out of a maximum of 100, percent of the variation in emergency credentialed teachers. Adding the percentage of English Learners in a school to the equation (equation 2) explains only one percentage point more of the variation. In short, the percentage of poor students and English Learners explains little of the variation in the percentage of emergency credentialed teachers across schools.

Equation 3 is a fuller model, but it explains only 20 percent of the variation in the percentage of emergency credentialed teachers and there are no other variables in the state data files that add anything to the equation. The percentage of poor students is no longer significant and the percentage enrolled in bilingual education is also not significantly related to the percentage of emergency credentialed teachers. The other variables are statistically significant, but not very important.³ To put it another way, we do not know much about why some schools have more emergency credentialed teachers and others have less from these equations. There appears to be a lot of randomness in the relationship which makes it all the harder to devise a solution.

Figure 1 shows the distribution of emergency credentialed teachers in the median California school of 30 teachers as predicted by the equations shown in Table 1. The bars on the left are the

³ Although the public is much confused about this issue, statistical significance only means that a relationship could not have happened by chance. It does not mean the relationship is strong or important.

result of solving equation 1 for 0 or 100 percent of the students being poor. If no students are poor, a school would have two teachers with emergency credentials. If all students are poor, a school would have only two more teachers with emergency credentials. The bars in the middle are the result of solving equation 2 for 0 or 100 percent of the students being English Learners holding the percentage poor constant at the mean of 48 percent. If a school has the average percentage poor of 48 and no English Learners, it would have two emergency credentialed teachers. If a school has the average percentage poor of 48 and 100 percent of its students are English Learners, it would have only three more emergency credentialed teachers.

The two sets of bars on the right are the result of solving equation 3 for 0 or 100 percent of the students being minority and the mean for the percentage poor, the percentage English Learners, the percentage enrolled in bilingual education, whether a school is elementary, and school size. If a school has no minority students, it would have one emergency credentialed teacher. If the same school has 100 percent of its students English Learners, it would have only three more emergency credentialed teachers.

The Effect of Emergency Credentialed Teachers on Achievement

The plaintiffs experts contend that the reason why we should care about the percentage of teachers on emergency waivers is that it has an effect on student achievement. Kenji Hakuta further asserts it has an effect on the achievement of English Learners.

Table 2 summarizes the relationship between the 2000-01 average school achievement on the SAT9 in reading, math, language, science, and social studies and the percentage of teachers that are emergency credentialed controlling for other school characteristics known to

be related to achievement. The statistical analysis was conducted on the average school achievement of three kinds of students—all students, poor students, and English Learners. The control variables and the complete equations are shown in Appendix 2 for all students, for poor students, and for English Learners. The equations for all students explain over 90 percent of the variation in achievement and the equations for poor students and English Learners explain over 70 percent of the variation in achievement.

Table 2 shows that there is no negative relationship between the percentage of emergency credentialed teachers in any subject area for any group. The few statistical analyses that were significant were positive, but miniscule in effect.

Although it may seem counterintuitive to claim that emergency credentialed teachers have no negative effect on achievement, there are many studies with similar findings. As a result, whether teachers need to be credentialed at all is a subject of controversy as evidenced by the U.S. Secretary of Education's May 2002 annual report on teacher quality, "Meeting the Highly Qualified Teachers Challenge."⁴

This report shows that verbal ability and content knowledge of teachers have been linked to higher student achievement, but what about other attributes, like knowledge of pedagogy, degrees in education or amount of time spent practice teaching? After all, these are the requirements that make up the bulk of current teacher certification regimes.

There is a great deal of contention surrounding the evidence on these components with some studies linking these requirements to improved student achievement. However, the quality of many of these studies has been called into question. A report by the Abell Foundation evaluated approximately 175 studies spanning the past 50 years, all of which purported to demonstrate a connection between certification and improved student outcomes. The analysis found that virtually all of these evaluations were not

⁴ U.S. Department of Education, Office of Postsecondary Education, "Meeting the Highly Qualified Teachers Challenge, The Secretary's Annual Report on Teacher Quality," June 2002. The report is available at <http://www.ed.gov/offices/OPE/News/teacherprep/AnnualReport.pdf>.

scientifically rigorous, did not use generally accepted statistical techniques to gather data and relied too much on anecdotal evidence.⁵

Scientific evidence also raises questions about the value of attendance in schools of education. In a recent study, economists Dan Goldhaber and Dominic Brewer found that while certified math and science teachers outperformed those who lack certification (as measured by their students' achievement), there was no statistical difference in performance between teachers who attended conventional training programs and received traditional teaching licenses versus those who did not complete such programs and were teaching on *emergency or temporary* [emphasis added] certificates.⁶

The Secretary's report concludes with the recommendation that "a rational teacher preparation and recruitment model" would streamline certification requirements and other regulations would be kept to a minimum. Attendance at schools of education would be optional; if teacher-training programs based in schools of education proved valuable to teachers and their employers, then demand for such programs would remain. Unpaid practice teaching would not be required (but would be optional), and any other bureaucratic hurdles would be eliminated.⁷

In short, the Secretary of Education of the United States seems to disagree entirely with the plaintiffs in this case. Linda Darling-Hammond has written an article protesting this report and the Abell Foundation review of the research.⁸ Kate Walsh, the author of the review of 175 studies spanning the last 50 years, has countered with the following characterization of Dr. Darling-Hammond's abilities to determine what is scientific.

Even if one were to overlook the inferior design and methodologies that characterize the 19 studies cited by Darling-Hammond in her response (down from over 200 that

⁵ Kate Walsh, "Teacher Certification Reconsidered: Stumbling for Quality," (Baltimore, Md.: The Abell Foundation, 2001) cited in "Meeting the Highly Qualified Teachers Challenge," p. 8. The Abell Foundation report is available at <http://www.abell.org/publications/index.asp>.

⁶ Dan D. Goldhaber and Dominic J. Brewer, "Teacher Licensing and Student Achievement," in *Better Teachers, Better Schools*, eds. Chester E. Finn Jr. and Marci Kanstoroom (Washington, D.C.: Thomas B. Fordham Foundation, 1999) cited in "Meeting the Highly Qualified Teachers Challenge," p. 8 and available at <http://www.edexcellence.net/better/goldhab.pdf>.

⁷ "Meeting the Highly Qualified Teachers Challenge," p. 19.

⁸ Linda Darling-Hammond and Peter Youngs, "Defining 'Highly Qualified Teachers': What Does 'Scientifically-Based Research' Actually Tell Us?" *Educational Researcher*, December 2002: 13-25.

Darling-Hammond has referred to in previous writings), and which she claims demonstrate the value of teacher certification, these studies have little to offer...But the poor quality of the studies cited by Darling-Hammond cannot and should not be overlooked...Darling-Hammond proves a formidable opponent in this debate, simply because her rules of engagement part from the norm.⁹

One does not have to take a side in this debate to be able to conclude that the issue of whether teachers must be credentialed to be effective is not a settled issue among experts in the field. Walsh describes what might happen when teachers do not have to be credentialed.

Darling-Hammond asks a reasonable question from her perspective. If we accept what Abell asserts about certification [that it is not necessary], how are teachers to learn what is known about how to teach well if there are no expectations, incentives or supports for them to do so? The answer though is clear: the same way new teachers learn now, but school districts will be a lot more deliberate about the need to mentor, train, and provide good staff development and be given more flexibility to decide who they are willing to train.¹⁰

In other words, if emergency credentialed teachers receive more mentoring and training and if they are selected on the basis of other important qualities such as impressive verbal abilities and personality, emergency credentialed teachers might be no worse than fully credentialed teachers and perhaps better than fully credentialed beginning teachers.

Waivered Teachers

Another category of teachers that is not fully certified are teachers on waivers. Waivers are requested by an employer (district or county office) on behalf of an individual when the employer is unable to find credentialed teachers or individuals who qualify for an emergency permit. Therefore, from the plaintiffs' perspective, waived teachers should be

⁹ Kate Walsh, "Teacher Certification Reconsidered: Stumbling for Quality: A Rejoinder," November 2001, p. 1. The report is available at <http://www.abell.org/publications/detail.asp?ID=61>.

¹⁰ Walsh, "Teacher Certification," p. 2.

considered more harmful to poor students and English Learners than emergency credentialed teachers. Teachers with waived credentials are an even smaller minority than emergency credentialed teachers in California. Only two percent of California teachers in 2000-01 had waived credentials and more than 75 percent of California schools had no teachers at all with waived credentials.

As shown in Table 3, the characteristics of the school explain virtually nothing of the variation in the percentage of waived teachers at a school. The r^2 (explained variation) of Equation 1 and 2 is zero, and the r^2 of equation 3 is only three percent.

Figure 2 shows the effect that these variables would have in the median California school of 30 teachers. The bars on the left are the result of solving equation 1 for 0 or 100 percent of the students being poor. If no students are poor, a school would have $2/10^{\text{th}}$ of one teacher with waived credentials. If all students are poor, a school would have only $1/10^{\text{th}}$ of one more teacher with waived credentials. The bars in the middle are the result of solving equation 2 for 0 or 100 percent of the students being English Learners holding the percentage poor constant at the mean of 48 percent for these schools. If a school has the average percentage poor and no English Learners, it would have $2/10^{\text{th}}$ of one teacher with waived credentials. If a school has the average percentage poor and 100 percent of its students are English Learners, it would have only $1/10^{\text{th}}$ of one teacher more with waived credentials.

The two sets of bars on the right are the result of solving equation 3 for 0 or 100 percent of the students being minority students, holding the percentage poor, the percentage enrolled in bilingual education, the percentage English Learners, whether a school is elementary, and school size constant at the mean. If a school has no minority students, it would have $1/10^{\text{th}}$ of one

teacher with waived credentials. If the same school has 100 percent minority students, it would have only 4/10th of one teacher more with waived credentials.

California is not an outlier on the equitable distribution of waived teachers. Figure 3 shows the ratio of the percentage of teachers with waived credentials in high poverty schools to the percentage of teachers with waived credentials in low poverty schools. Data were only available for 41 states.¹¹ The closer the ratio is to 1.0, the closer a state is to perfect equity. California, with a ratio of 1.7, is closer to perfect equity than the average (2.0) for the other 40 states and only slightly above the total (1.5) when the other 40 states are pooled together. More than half of the 40 states are at or above California, that is, less equitable in the distribution of waived teachers. Indeed, of the six states—Rhode Island, Illinois, New York, Florida, Connecticut, and Maryland—cited as models for California to follow in Jeannie Oakes' summary report for this case, three (Rhode Island, Illinois, and New York) are substantially worse than California on the ratio of the percentage of waived credentials teachers in high poverty to low poverty schools, two (Maryland and Florida) are the same as California, and only one (Connecticut) is better.

Figure 3 indicates that the equitable distribution of fully credentialed teachers is a nationwide problem and California is merely average on this issue. Moreover, there are very few teachers with waived credentials in any California school—more than 75 percent of California schools have none and 99 percent have less than 10 percent.

¹¹ U.S. Department of Education, 2002 "Meeting the Highly Qualified Teacher Challenge..." Appendix B2.

Finally, it should be noted that the ratio of high poverty to low poverty schools is virtually the same (2.1) in states with plaintiff victories in state fiscal equity cases as in the other states.¹² Thus, the courts may be able to order states to more equitably distribute money to school districts, but there is a limit to what they can achieve in a free society.

Indeed, the history of court ordered school desegregation plans suggests very real limits to the power of the courts to make administrators, parents, and teachers comply with court orders even within a single school district, let alone an entire state. Because parents can vote with their feet, every school district in the U.S. that I have studied that had a court ordered mandatory reassignment plan suffered significant white flight that in the northern school districts produced less integration within a few years of the plan being implemented than existed prior to the plan and in the southern school districts produced less integration than a simple neighborhood student assignment plan would have.¹³ In addition, because teachers are a scarce resource, school districts are reluctant to reassign them. Very few of the many school districts that I have studied were able to have all of their teaching staff racially balanced among schools according to the court order. The average was about 80 percent and the minimum was about 35 percent in a single

¹² See <http://www.accessednetwork.org/statesmain.html> for a classification of states by their fiscal equity litigation.

¹³ See C. Rossell, "The Evolution of School Desegregation Plans Since 1954" in Stephen Caldas and Carl Bankston (eds), The End of School Desegregation? Nova Science Publishers, forthcoming 2003; C. Rossell, "The Effectiveness of Desegregation Plans," in C. Rossell, D. Armor, and H. Walberg, (eds.), School Desegregation in the 21st Century, pp. 67-118. Westport, Ct.: Praeger Publishers, 2002; D. Armor and C. Rossell, "Desegregation and Resegregation in the Public Schools," in Abigail Thernstrom and Stephen Thernstrom, Beyond the Color Line, pp. 219-258. Palo Alto, CA: Hoover Institution Press, 2002; C. Rossell and D. Armor, "The Effectiveness of School Desegregation Plans, 1968-1991," American Politics Quarterly, July 1996, 24 (3): 267-302; and many other articles and books on this topic in my Vita.

school district under active court supervision.¹⁴ This is not to say that nothing good came of these court orders, but only that what was achieved was far less than what was ordered and hoped for.

The Effect of Waivered Teachers on Achievement

As summarized in Table 4, only one analysis of the effect of the percentage of teachers with waived credentials on school achievement is statistically significant. The complete equations are in Appendix 3. The percentage of teachers with waived credentials is not at all related to the achievement of any group of students in any subject area.

The Gap Between Fluent English Proficient Students and English Learners

Many of the assertions made by the plaintiffs' experts regarding the achievement gap between English Learners and non-English Learners are misleading. Because of the way in which English Learner is defined, there *must* be a gap between the achievement of English Learners as a group and non-English Learners as a group and that gap can *never* be eliminated. An English Learner is not simply an immigrant child or a child from a non-English speaking family. An English Learner is a child from a family where a language other than English is spoken who *scores low in English*. Children from non-English speaking families who score high in English are not English Learners. Children from non-English speaking families who were once English Learners and are now high scoring are no longer in the category called English Learners. Therefore, English Learners must by definition have low achievement in comparison to non-

¹⁴ See for example, C. Rossell, "The Desegregation of the Fulton County Schools," a report prepared in the case of *Hightower v. West*, January 22, 2003.

English Learners. Exactly how much lower is a function of the test used since different tests vary in difficulty and have different cut-points designating a child as an English Learner.

In the past, the state of California has let school districts decide which test to use. In this respect, it was like all the other states. As of Spring 2001, however, California adopted a statewide English proficiency test (CELDT) that all school districts are required to use in identifying English Learners. California is the first state in the U.S. to do so and in this sense is a pioneer. Massachusetts is now following California's lead. However, regardless of whether California lets school districts choose the test or imposes a statewide test, there will always be a gap between English Learners and other students so long as English Learners are defined by their low achievement, which is what every school district in every state in the U.S. does.

The outcome of this definitional dilemma is that the state and the school districts do not get credit for much of the academic achievement growth of English Learners because as soon as an English Learner becomes a high scorer, he or she is no longer in the category called English Learner. Table 5 shows a hypothetical example over three years that demonstrates how English Learners as a whole could appear to be making no progress, although each individual English Learner is making considerable progress. In this hypothetical example (let us call it the state), English Learners enter the school system at various points in time and are classified English Learner. When they reach the 36th percentile (a common cut-off point), they are no longer classified as English Learners and so are not part of the average for English Learners.

The average, shown in the bottom row of Table 5, is simply the sum of the scores above divided by the number of scores. It is this number that is reported in public documents and in the newspapers. The average for English Learner in Table 5 is 16 for each year and so a person

unfamiliar with the process by which English Learners are designated and how averages are computed would conclude that the gap was not being closed and that English Learners were making no progress.

If we look at each individual English Learner, however, we can see that every English Learner with test scores at two points in time made progress. The average progress over 2 to 3 years was 17 points. However, those that progressed above the 36th percentile, a typical cut-off point, are no longer counted in the average for English Learners because they are no longer English Learners. They are replaced by low scoring students just entering the school system. Thus, the overall average score for English Learners stays the same even though every individual student made progress.

In addition, because of the change in the test in California, we cannot compare test scores before 2001 to those after 2001. The new statewide CELDT is a sensible innovation because it means that redesignation rates can be compared from district to district, but it has a cost. Indeed, change of any kind usually has a "cost." In this case, the cost is that we cannot compare English Learner test scores before and after 2001 because the criterion for defining a child as an English Learner has changed.

The CDE has posted English Learner progress on the CELDT from 2001 to 2002, the two years the new test has been used. That data, summarized in Figure 4, which is only of students tested at two points in time, shows that English Learners in California have had a reduction in the percentage designated beginning, early intermediate, and intermediate and an increase in the percentage designated early advanced and advanced since 2001.¹⁵ There may be more improvement than this, but because students who improve too much disappear from the

¹⁵ These data can be obtained at <http://celdt.cde.ca.gov/main2002.html>.

category called English Learner, the only improvement that will show up on public documents will be modest.

Kenji Hakuta claims on p. 2 of his report that the Gandara and Rumberger 2002 report shows "a sizeable and ultimately growing achievement gap between English origin and non-English origin students...in California across grade levels." First, the Gandara and Rumberger report does not in fact show an increasing gap over grades nor do the underlying data that they use. Second, even if it did, it would be hard to know what it means, not only because in the past school districts have used different English proficiency tests and changed them regularly, but because with each successive grade, the category English Learner includes more and more children with special needs. This occurs because the children without special needs will have been reclassified in the earlier grades. We are thus not able to draw meaningful conclusions about the efficacy of programs from the comparisons of English Learners and non-English Learners across grades so long as the category of English Learners is defined by their low achievement.

The one thing we know for certain is that English Learners *must* by definition have lower achievement than non-English Learners no matter how good an educational program they are enrolled in nor how good a job the schools are doing in educating English Learners. Thus, when Kenji Hakuta blames the state and/or its local educational agencies for the fact that the current pass rate for ELs on the English language arts portion of the California High School Exit Exam (CAHSEE) is lower than that for non-EL students, he is being disingenuous since he knows full well that English Learners will have lower pass rates than non-English Learners. The state takes this into account since a) all students get about eight chances to pass the exam, and b) English

Learners are not required to pass the exam until they have been enrolled in a district for two years and instructed in English for at least six months.

Language Certification of Teachers

Kenji Hakuta presents a table from Hayes, Salazar, and Vukovic (2002)¹⁶ that purports to show that teachers with a CTC bilingual (BCLAD) authorization produce the greatest achievement gains in English Learners controlling for initial achievement, teachers with a CLAD/LDS authorization produce the second greatest achievement gains in English Learners controlling for initial achievement, while teachers with no authorization produced negative effects on the achievement of English Learners in “selected” schools in Los Angeles Unified School District. Hayes, Salazar, and Vukovic are staff in the Program Evaluation and Research Branch of the Los Angeles Unified School District and this is an in-house report.

These results are contrary to other research on this subject. Eric Hanushek’s analyses published in many journals and edited books indicate that in general there is no relationship between teacher education and student achievement. Tickunoff’s “Significant Bilingual Instructional Features” study identified 58 outstanding bilingual education teachers through reputation and observation.¹⁷ The most common preparation for these outstanding teachers was attendance at in-service workshops. Only one of the 58 teachers had passed a proficiency test in the non-English language. Only nine had ever taken any courses in college in bilingual education. Only four had ever taken any course work in linguistics.

¹⁶ K. Hayes, J. Salazar, and G. Vukovic, “Teacher Versus Child Characteristics in the Education of Ells,” Los Angeles Unified School District, Program Evaluation Branch, 2002, cited in K. Hakuta, “English Language Learner Access to Basic Educational Necessities in California: An Analysis of Inequities, p. 7.

¹⁷ E.A. Guthrie, W.J. Tickunoff, C.W. Fisher, and E.W. Gee, *Significant Bilingual Instructional Features Study: Part 1, Vol. 1, Instruction and Overview of the SBIF*. San Francisco: Far West Laboratory, 1981.

Dr. Hakuta cites the Thomas and Collier study (2002)¹⁸ as evidence that teacher qualification matters for English Language Learners. His citation of that study suggests that because he himself does not do quantitative research, he is unable to assess the quality of studies that he reviews, or he is willing to overlook the study's problems in order to make a point. The Thomas and Collier study of Houston, one of several case studies in the report, does not follow the same students over time nor does it have any statistical analysis of students' achievement controlling for the other characteristics that affect student achievement besides what goes on in the classroom. Most importantly, the study does not actually have a measure of teacher training. Thomas and Collier assume that the students who were in transitional bilingual education and the students in ESL content had "trained" teachers and the students whose parents refused services did not have trained teachers. Such an assumption is clearly preposterous.

Dr. Hakuta apparently did not notice that the students that had been in bilingual education or ESL content and taught by "trained" teachers had *declines* in their achievement across grades. The decline was greatest in math. Students taught by "trained" teachers in the bilingual program had a 22 point decline in their math achievement and the students taught by "trained" teachers in the ESL content program had a 25 point decline in their math achievement. The students whose parents refused services had a 15 point decline in their math achievement. In fact, however, this is all meaningless because it is not the same students across grades nor is there a measure of teacher training nor is there any statistical analysis

¹⁸ W.P. Thomas and V. Collier, "A National Study of School Effectiveness for Language Minority Students' Long Term Academic Achievement Final Report: Project 1:1," 2001 can be downloaded at http://www.crede.ucsc.edu/research/llaa/1.1_final.html

controlling for the other characteristics that affect achievement besides the "training" of the teacher. The study is quite literally worthless.

Dr. Hakuta also cites the book he and Diane August edited as evidence of several propositions concerning the need for teacher certification and language training.¹⁹ That book, however, is not a systematic review of the research. It is mostly a review of reviews although specific studies are also discussed. There is no standard, scientific or otherwise, for why some studies are discussed and others ignored, and much of the book sets out the many ways in which we need to know more about educating language minority children.

Table 6 shows the effect of bilingual certification on the achievement of English Learners enrolled in bilingual education in 1988 in the Berkeley Unified School District.²⁰ In this analysis, an individual student's achievement from one year to the next was predicted from their personal characteristics and from whether their teacher was bilingual certified (BCLAD). As shown, whether a teacher was bilingual certified had no significant effect on the reading, math, or language achievement of her students in the bilingual education program.

Table 7 shows a summary of multiple regression analyses of the achievement of English Learners in California schools in Spring 2001 as predicted by school characteristics and the language certification of the teachers. The complete equations are in Appendix 4. There are three variables measuring certification. The first variable (column 1) is the percentage of teachers in a school with a CTC bilingual, SDAIE, or ELD authorization teaching either in

¹⁹ Diane August and Kenji Hakuta, eds., *Improving Schooling for Language-Minority Children*, Washington, D.C." National Academy Press, 1997.

²⁰ C. Rossell, "Bilingual Education and Bilingual Certified Teachers: Are They Necessary?" in Keith Baker (ed.), *Bilingual Education: Legal Issues*, Bloomington, IN: Phi Delta Kappa, 1991; C. Rossell, *The Effectiveness of Educational Alternatives for Limited English Proficiency Children*, in Gary Imhoff (ed.), *The Social and Cultural Context of Instruction in Two Languages: From Conflict and Controversy to Cooperative Reorganization of Schools*. (New York: Transaction Books, 1990).

English or primary language instruction. These teachers are fully authorized to teach English Learners. The second variable (column 2) is the percentage of teachers in a school with a CTC bilingual, SDAIE, or ELD authorization or with a SB1969 Certificate of Completion or District Designated Certificate (with CDE approval) teaching either in English or primary language instruction. The third variable (column 3) is the percentage of teachers in a school with a CTC bilingual authorization providing primary language instruction. In none of the equations is the percentage of teachers with a certification to teach English Learners statistically significant. In short, there is no evidence that a certification to teach English Learners is related to the achievement of English Learners whether individual students are analyzed as in Table 6 or the average achievement of English Learners in a school is analyzed as in Table 7.

Educational Spending

The plaintiffs' reports enumerate a host of problems in the schools of the named plaintiffs. The implication is that the state spends very little on education and very little on poor schools. The evidence suggests otherwise.

California is compared to other states in Appendix 5 and Figure 5.²¹ California is above average in per pupil expenditures. Although public documents show California below average in per pupil expenditures, that is because California's "official" educational expenditures do not include the lottery and other sources of revenue for education. The Lottery Act mandates that public education must receive at least 34% of the sales revenues

²¹ Source: U.S. Census Bureau, Public Education Finances, 2001, which can be downloaded at <http://www.census.gov/govs/www/school01.html>.

taken in each year by the Lottery.²² Since 1985, the public schools have received 37.3% of all Lottery revenues. Nevertheless, the state does not report that allocation nor other sources of revenue earmarked for education in its official reports of educational expenditures. Therefore, I have corrected the educational expenditures for California found in the Census Bureau document, "Public Educational Finances, 2001" to reflect the other sources of money and recalculated the per pupil expenditures.²³ As shown, California's per pupil expenditures are \$7,369, just above the U.S. total of \$7,284. This is all the more impressive because California is one of the few states that has had an initiative passed that puts a limit on the property tax, historically the major source of educational revenues. Indeed, many observers argue that Proposition 13, passed by the voters in 1978, was a direct response to the 1977 equalization formula developed by the state legislature. That formula, ordered by the Supreme Court in 1976, included revenue limits and allowed poor districts to increase their funding at a greater rate than wealthy districts.

California's educational expenditures are also a larger share of total governmental expenditures than other states. As shown in Figure 6 and Appendix 6, California ranks well above the other states in the percentage of state spending that goes to education.

It is interesting that the 25 states with plaintiff victories in fiscal equity cases have lower per pupil expenditures and about the same percentage of state funds devoted to education

²² See <http://www.calottery.com/heroesineducation/faq.asp#q1>.

²³ See Lance Izumi, Carl Brodt, and Alan Bonsteel, "A Short Primer on Per Pupil Expenditures," Nov. 2001, San Francisco, CA: Pacific Research Institute, which can be downloaded from http://www.pacificresearch.org/pub/sab/educat/per_pupil_spending/index.html. I use their formula for how much of the total "other" money is spent on K-12 education. I have recalculated the per pupil expenditures in California using the California ADA which is implied in the Census Bureau report. The implied ADA is derived by dividing the per pupil expenditures by the original expenditures in that table.

as the other 25 states. In short, the courts may be able to require a more equitable distribution of resources, but this does not necessarily translate into higher educational expenditures.

The plaintiffs not only allege that resources are inadequate, but that they are not equitably distributed. Per pupil expenditures are not available by school in California (nor in any other state). California does, however, keep educational expenditures by school district.²⁴ As shown in Figure 7, in FY 2000, the per pupil expenditures for high poverty school districts (those above the average percentage—43.7%—of students on free or reduced lunch) were \$6,354 compared to \$6,003 for low poverty school districts (those below the average percentage of students on free or reduced lunch). In FY 2001, the per pupil expenditures for high poverty school districts were \$7,140 compared to \$6,681 for low poverty school districts. In addition, the advantage in per pupil expenditures enjoyed by high poverty school districts increased from FY 2000 to FY 2001. Although these data do not tell us how this money is allocated among schools in a school district, they do show the state's good faith effort in complying with the *Serrano* decision.

Facilities and Student Achievement

There are apparently only two states, Illinois and Maryland, that have a facilities rating program, and Maryland only does it every eight years. The other states leave it to school districts to maintain and evaluate their school facilities and California is no exception in this regard. The plaintiffs have not presented systematic evidence that facilities are worse in poor schools or districts than in wealthier schools or districts, although they could have inspected

²⁴ These data can be found at <http://www.cde.ca.gov/fiscal/financial/financialdata.htm>. These are the "official" educational expenditures which means they do not include the lottery money or other sources.

the facilities of a random sample of schools stratified by student wealth. The Harris survey, cited in the Corley report for this case, is not sufficient since the perception of teachers will not produce the same results as a systematic audit of the physical facilities.

Nor have they presented any scientific evidence that the quality of facilities makes a difference in the achievement of students. I do not have data on the quality of school facilities in any California school district, but I do have data from a school district in Georgia that routinely surveys its facilities and gives them a quality rating. The state of Georgia does not do this. It is up to individual school districts as to whether they wish to do this. This particular school district is the first I have encountered in decades of research and consulting that has a systematic facilities rating program.

Table 8 shows a multiple regression analysis of the relationship between the quality of facilities and average school achievement--composite, reading, and math--for elementary and middle schools in this Georgia school district. There are three variables measuring the quality of the facilities: 1) the overall quality of the facilities as ranked by the school district staff as part of their annual facilities evaluation, 2) the percentage of capacity being utilized (i.e. overcrowding),²⁵ and 3) an estimate of the percentage of students in portables.²⁶ Equation 1 includes only the first variable; equation 2 includes the first variable plus the second variable, and equation 3 includes all three variables. The equations control for the percentage poor (eligible for free or reduced lunch), the percentage black, and whether a school is an elementary school.

²⁵ This includes the capacity of the portables estimated as 25 X 2 classrooms per portable. The same results obtain if capacity without portables is used in the equation.

²⁶ This is estimated as 25 students X 2 for each portable.

Far and away the most important variable is the percentage of students who are poor. None of the school facilities variables are statistically significant, which is what common sense would tell you. It is unlikely that the quality of school facilities would affect achievement in American schools since the scientific research indicates that achievement is a function of the characteristics of the student and effective time on task. I have never seen a public school in America whose facilities were so bad that students could not learn in them. In addition, I have toured many hundreds of schools in California over the last three decades and I have never seen a public school in California whose facilities were so bad that children could not learn in them.

Concept 6 Schools

Jeannie Oakes alleges in her report in this case that Concept 6 schools negatively affect students' achievement. Concept 6 schools have a shorter school year—167 days compared to 180 days for the traditional calendar and other multitrack calendars. There is widespread opposition to Concept 6 schools.

In 2000-01, only two school districts, Lodi Unified and Los Angeles Unified, had Concept 6 schools. The students enrolled in the 197 Concept 6 schools out of a total of almost 9,000 schools in California represent five percent of all students, 11 percent of the English Learners, and 10 percent of the poor students. If we add to this the schools with a modified Concept 6 schedule, the number increases to 238 schools in five districts representing six percent of all students.

The number of Concept 6 schools increased in 2001-02, but only by eight schools to 205. The students in these schools still represent only five percent of all students and 5 school districts. If we add to this the schools with a modified Concept 6 schedule, the number of schools is 242 out of almost 9,000 representing 11% of the total student enrollment. Concept 6 is thus not widespread nor inevitable.

Nor is Concept 6 a function of per pupil expenditures. Of the two school districts that had Concept 6 schools in 2000-01, one was above the state average in per pupil expenditures and one was below and both were at or above the state average for school districts greater than 5,000.²⁷ In that year, there were 413 school districts, almost 40 percent of the total 1,046 school districts in California, that had lower per pupil expenditures than Lodi (\$6,127), but nevertheless did not have Concept 6 schools. There were 817 school districts, 78 percent of the total, that had lower per pupil expenditures than Los Angeles Unified (\$7,144), but nevertheless did not have Concept 6 schools.

If we add to that the schools with Modified Concept 6 calendars in 2000-01, there were 813 school districts that had lower per pupil expenditures than Los Angeles Unified, but nevertheless did not have Concept 6 or Modified Concept 6 schools. There were 412 school districts that had lower per pupil expenditures than Lodi Unified, but nevertheless did not have Concept 6 or Modified Concept 6 schools. There were 459 school districts that had lower per pupil expenditures than Franklin-McKinley (\$6,182), but nevertheless did not have Concept 6 or Modified Concept 6 schools. There were 302 school districts that had lower per pupil expenditures than Palmdale (\$5,973), but nevertheless did not have Concept 6 or Modified

²⁷ Small school districts have higher per pupil expenditures because there are economies of scale for larger school districts and because in the smaller school districts, a few severely handicapped students can cause their per pupil expenditures to skyrocket since there are few students to begin with.

Concept 6 schools. Finally, there were 470 school districts that had lower per pupil expenditures than Vista Unified (\$6,196), but nevertheless did not have Concept 6 or Modified Concept 6 schools.

Clearly, the adoption of Concept 6 or Modified Concept 6 is a choice made by a few school districts with regard to how they spend their money. It is neither forced by state policy nor by low per pupil expenditures.

The Quality of the State's Supervision of Education

For the past seven years, *Education Week*, a national weekly newspaper devoted to education, has been conducting an annual survey of the quality of education in the 50 states. According to this survey, California is one of only 40 states that assesses the basic skills of beginning teachers in order to license them, one of only 34 states that requires a written test in subject knowledge, one of only 23 states that requires a written test in subject-specific pedagogy, one of only two states that requires state performance assessment for the second stage of certification with classroom observation, one of only two states that discourages out-of-field teaching and provides parent notification of out-of-field or uncertified teachers, one of only 16 states that requires and finances induction for all new teachers, one of only 44 states that encourages or supports ongoing professional development for teachers by financing professional development, and one of only 24 states that holds teacher-training programs accountable by publishing pass rates/rankings of teacher education institutions.

Figure 8 compares California's rating²⁸ to the other states on the issues--standards and accountability, improving teacher quality, school climate, and the adequacy and equity of resources—that are aspects of the state's oversight of education criticized by the plaintiffs. The elements of each of these factors are shown in Appendix 7.

It is interesting that *Education Week* gives the states high marks for their standards and accountability procedures because that procedure is described by the plaintiffs' as unfair and illogical. As shown, California has a substantially higher rating than the other states in standards and accountability, improving teacher quality, school climate (which includes students' feelings of safety in their schools), and the equity of resources.

California is also above the average for the other states in terms of teacher salaries adjusted for the cost of living. The average teacher salary in California is \$43,061 compared to \$41,030 for the other states. It falls dramatically below the other states in the area of adequacy of resources, although because this is the "official" expenditure, it does not include the lottery money, and thus underestimates California's adequacy.

Even if the lottery money is counted, California might not get an A on adequacy of resources. The *adequacy* of resources is not something that in a democracy, state government has much control over. And the courts have even less. It is the voters and their elected representatives who decide what taxes they are willing to bear and how the money should be allocated among the various services and programs the state and local governments provide. But California's grade would increase substantially if the lottery money were included because *Education Week's* rating gives points to whether you are above or below the national median or

²⁸ Education Week gave the states a letter grade ranging from A to F. I converted this to an 11 point scale ranging from 11 (A) to 0 (F) in order to average the grades.

average or a specific amount and the lottery money puts California above the nation and above the amounts (\$6,000 and \$7,000) enumerated in the survey.

Figure 9 shows *Education Week's* ratings for the two states, Rhode Island and Connecticut, that Jeannie Oakes states in her summary report have developed "systemic reform" in which schools are governed from their state capitals through a set of coherent policies that align the various parts of the educational system toward student achievement. She concludes that these states "have achieved steady results, particularly in terms of insuring equitable access to the tools of learning" (p. 49). In fact, however, Figure 9 shows that California has a substantially higher rating than Rhode Island on standards and accountability, improving teacher quality, and resource equity. California also has a higher rating than Connecticut on standards and accountability, the same rating on improving teacher quality, and a substantially higher rating on resource equity. Even with its poor score on resource adequacy, a score that would be several points higher if the lottery money were included, across all items, California scores higher than the two states which have had "systemic reform."

How can that be? One possibility is that California already does quite a bit of effective oversight as judged by impartial outside observers and doesn't need "systemic reform." Indeed, Dr. Oakes summary report enumerates the many positive oversight programs that the state currently has in place and the many ways in which it provides assistance to problem schools and districts:

- 1) the Fiscal Crisis and Management Assistance Team, created in 1991, to provide assistance to districts believed to be experiencing or approaching financial difficulties (p. 42);
- 2) the School Accountability Report Cards (SARC) (p. 38);

- 3) the Comite Compliance Unit of the CDE—charged with monitoring whether districts have appropriate programs for English Learners, pursuant to State and federal statutes (p. 38);
- 4) the Coordinated Compliance Review (CCR) on-site monitoring of school compliance with federal and state program requirements (p. 38);
- 5) the collection of data on teacher characteristics by the CDE, the California Commission on Teacher Credentialing, and the California State Teachers' Retirement System (p. 37);
- 6) the CDE and California Technology Assistance Project which assesses access to technology (p. 29);
- 7) the Beginning Teacher Support and Assessment (BTSA) and Peer Assistance and Review (PAR) programs (p. 40);
- 8) Intermediate Intervention/Underperforming Schools Program (II/USP) and the High Priority Schools Program (HPSP) (p. 43);
- 9) the High Priority Schools Grant (AB 961);
- 10) SB813, the first of a series of legislated mandates and inducements for school improvement which established programs for mentor teachers, a longer school day and year, higher beginning teachers' salaries, more rigorous graduation requirements, and statewide curriculum standards (p. 47);
- 11) Proposition 98, guaranteeing a percentage of tax revenue increases for K-12 education (p. 48);
- 12) non-mandatory school facilities guidelines described as "quite good" (p. 59); and
- 13) extensive data collect efforts.

And these are only a small percentage of the state oversight programs that are currently in place. The plaintiffs' major complaint seems to that they want more "coherence" and they want more money devoted to data collection and to education in general. But California is already a leader in the nation in terms of the amount of data collection it does and data collection is enormously expensive. Perhaps California should spend more money on data collection and less money on education—that is, on what goes on in the classroom. Or perhaps it should do the opposite. It seems to me that these are decisions that should result from the political process, not a court order.

Figure 10 compares the *Education Week* ratings of the states with plaintiffs' victories in fiscal equity cases and the other states. The states with plaintiffs' victories have higher ratings

on improving teacher quality and school climate, but lower ratings on standards and accountability and resource adequacy and substantially lower ratings on resource equity, the issue directly addressed by their court decisions, than do the other states. Moreover, California, which is also a plaintiffs' victory state, has higher ratings than the other plaintiffs' victory states and the other states, in particular in the areas of standards and accountability, improving teacher quality, and resource equity, thus further demonstrating their good faith effort in complying with *Serrano*. The only area where California consistently falls short is in the area of resource adequacy, but again that rating would be higher if the state reported the lottery money in its official educational expenditures. Moreover, overall spending on education is the one area where a court has limited effect in a democracy.

What is an Efficient Government?

Jeannie Oakes writes in her report in this case that busing students to distant schools as a way to relieve overcrowding, as she alleges is the case in many Los Angeles neighborhoods, takes a significant toll on the quality of schools (p. 9). Yet it was only a few years ago that Dr. Oakes was espousing busing as the means of increasing the quality of education in Rockford (2000) and in New Castle County (1997). Dr. Oakes and Dr. Hakuta criticize the class size reduction program launched in California in 1997, yet prior to that they were advocates of class size reduction. Dr. Hakuta has been a strong and vocal advocate of bilingual education, although my research shows that bilingual education is the least effective approach to educating English Learners²⁹ and apparently the voters of California agree with

²⁹ C. H. Rossell and K. Baker, *Bilingual Education in Massachusetts: the Emperor Has No Clothes*. Boston, MA: Pioneer Institute, 1996; C. H. Rossell and K. Baker, "The Educational Effectiveness of Bilingual Education,"

me. Dr. Hakuta's opinion has changed since he began doing case studies of how individual children learn a second language, research which seemed to support structured immersion not bilingual education. Despite his research, he joined the ranks of the supporters of bilingual education and stopped doing the case studies of language acquisition which seemed to contradict his new position. He may change his mind once again now that there seems to be significant public support for structured immersion or he may not.

Experts' opinions change as to what makes sense at any given time or situation, in part because research findings change and in part because public opinion changes. The plaintiffs in this case, however, want this court to order changes to the system of educational governance in California in order to improve its efficiency based on their current opinions, which have changed over time and which may change in the future, on issues on which there is no expert consensus. Nor do they actually have any concrete recommendations for how the state can achieve all of the things they currently want within the system of governance that is in place. One can read Dr. Oakes' report and still have no idea how the state can achieve the lofty goals she has for it, including spending more money on education. My own assessment of her discussion of "specific" policy changes and systemic reforms is that it is vague and "piecemeal." To say that the state must "require" certain things is to show a profound naiveté about the powers of the state. The state can require all of the things that Dr. Oakes suggests and they might still not happen given the current level of funding for education that the voters and their elected representatives are willing to support, and the implementation obstacles that political scientists have written extensively about.

Research in the Teaching of English, February 1996, 30 (1): 7-74; C.H. Rossell, "Dismantling Bilingual Education, Implementing English Immersion: the California Initiative," February 20, 2002.

Democracy is messy and inefficient in many respects, but virtually every policy analyst would argue that it is still superior to a benevolent dictatorship because a) people prefer democracy to a benevolent dictatorship, and b) a benevolent dictator has no better information on what is wanted or needed by citizens and no better means of obtaining compliance than that which is obtained through the democratic process and a free market. Federalism and decentralization may also appear to be messy and inefficient, but federalism allows citizens greater choice because they can move to localities where the package of services and taxes more closely matches their needs and they can demand change in return for not moving.³⁰ Decentralization and a standards based approach, such as California is taking, is generally believed by policy analysts to be more efficient than a centralized government because the competition between schools and local governments encourages innovation and because the central government is less likely to have the correct information on what citizens want and need than is the local government.³¹

Furthermore, the problem with all government, whether it is centralized or decentralized, democratic or a dictatorship, is that what is voted on or passed by the legislature or ordered by a court is never exactly the same as what is implemented. Nevertheless, policies and programs are more likely to be properly implemented if they enjoy the support of the citizens rather than being ordered by a court.³²

³⁰ James Q. Wilson, *Bureaucracy*, New York: Basic Books, 1989; David L. Weimer and Adrian R. Vining, *Policy Analysis: Concepts and Practice*, Upper Saddle River, NJ: Prentice-Hall.

³¹ James Q. Wilson, *Bureaucracy*, New York: Basic Books, 1989; David L. Weimer and Adrian R. Vining, *Policy Analysis: Concepts and Practice*, Upper Saddle River, NJ: Prentice-Hall.

³² There is a huge political science literature on this issue beginning with Jeffrey Pressman and Aaron Wildavsky's 1979 book, *Implementation : How Great Expectations In Washington Are Dashed In Oakland : Or, Why It's Amazing That Federal Programs Work At All, This Being A Saga Of The Economic Development Administration As Told By Two Sympathetic Observers Who Seek To Build Morals On A Foundation Of Ruined Hopes*, Berkeley: University of California Press.

Since the early 1990s, California has had a net outmigration of people.³³ Any court decision, even a limited one, requiring changes in state governance and a greater redistribution of resources than the already substantial amount that exists could easily accelerate this trend. As Weimar and Vining point out,

“In general, we should expect the total available wealth to shrink more, the greater the amount of redistribution attempted. Arthur Okun uses the analogy of transferring water with a “leaky bucket.”³⁴ If we try to transfer a little water we will lose a little; if we try to transfer a lot we will lose a lot. The key question, therefore, is how much current and future wealth are we, as a society, collectively willing to give up to achieve greater equality in distribution? In practice, we must rely on the political process for an answer.”³⁵

The plaintiffs are asking us to give up on the political process, but we know from the experience of California and other states with plaintiff victories that they will probably not be satisfied with what results from a court order in a democratic society. After all, they are not satisfied with what resulted from *Serrano*. They are also asking this court to order remedies that they believe will make the state government more efficient.

This court can issue an order that requires specific remedies suggested by the plaintiffs to make state educational governance more efficient, but it cannot actually make state educational governance more efficient. Fully credentialed teachers, for example, can be ordered to go to poor schools, but no court in a democratic society can make them actually show up. The state can be ordered to provide substantial incentives to fully credentialed teachers so they will want to work at the poorest schools and ordered to provide more money to school districts to be spent on facilities, but no court in a democratic society can keep

³³ Hans Johnson, “Movin’ Out: Domestic Migration to and From California in the 1990s,” in *California Counts*, 2(1), August 2000, available at <http://www.ppic.org/main/publication.asp?i=109>.

³⁴ Arthur M. Okun, *Equality and Efficiency: the Big Tradeoff*, Washington, D.C.: The Brookings Institution, 1975, cited in Weimar and Vining, *Policy Analysis*: 145

³⁵ Weimar and Vining, *Policy Analysis*: 145.

taxpayers from moving themselves and/or their money to other states if there is no political support for this. Only the messy political process that the plaintiffs are dissatisfied with can actually achieve greater efficiency--the same political process that has resulted in California being a leader in the nation on most aspects of educational governance.

Resource Equity

The evidence presented in this report indicates that the state has achieved resource equity to the extent practicable in a democratic society. Only a small percentage of teachers are emergency credentialed and the difference between the number of emergency credentialed teachers or teachers with waived credentials in a school with no poor students and with all of its students poor is miniscule. In addition, the importance of emergency credentialed teachers or teachers with waived credentials is disputed both by experts in the field and by my statistical analyses which show no relationship between achievement and the percentage of teachers with emergency or waived credentials in California schools. Finally, although there is a higher percentage of teachers with emergency or waived credentials in poorer schools, this is a nationwide phenomenon and California is merely average. Indeed, California does a better job in solving this problem than almost all of the states cited by Dr. Oakes as a model for the state to follow and substantially better than one of the two states which Dr. Oakes says have been successful at "systemic reform." Either systemic reform is not the panacea that Dr. Oakes thinks it is or California doesn't need it.

There is no evidence that the state is not doing a good job at supervising the education of English Learners. Because English Learners are by definition students who score low in

English, there will always be a gap between them and fluent English Speakers so long as there is one English Learner in the state. The gap tells us nothing about how well the state is supervising their education nor how well the school districts are educating them.

In addition, the fact that some English Learners are taught by teachers who are not fully authorized to teach English Learners is inconsequential since the language authorization of a teacher has no effect on their achievement. The state of California is a pioneer in the U.S. in developing a state English proficiency test that all school districts must use. The new test will allow observers to compare redesignation rates from school to school and district to district. In the two years that the test has been used there has been a reduction in the percentage of English Learners in the beginning categories and an increase in those in the advanced categories.

Per pupil expenditures in California are higher than the national average and a higher percentage of state government expenditures than the national average. The state gets less credit than it deserves because it consistently underreports its educational expenditures by failing to include the lottery and other funds in its official educational expenditures.

Although per pupil expenditures are not kept by school in California (nor in any other state), they are kept by school district. That data indicates that California spends more money on high poverty school districts than on low poverty school districts thus demonstrating a good faith compliance with the Serrano decision.

The plaintiffs have presented no systematic evidence that the facilities in high poverty schools are significantly worse than the facilities in low poverty schools. Moreover, there is disagreement about the importance of facilities to student achievement. My statistical analyses

of the relationship between the quality of facilities, capacity utilization, the number of portables and school achievement show there is no relationship. The quality of facilities is thus one of the many complaints of the plaintiffs about educational governance that should be left to the political process.

Although there is opposition to Concept 6 schools because the children enrolled in them go to school for fewer days than children in other schools, only five school districts have these schools. Across the state, there are only about 200 Concept 6 or Modified Concept 6 schools out of almost 9,000 schools. Their presence in a school district is not a function of a district's per pupil expenditures since there are hundreds of school districts that do not have Concept 6 schools but have lower per pupil expenditures than the five districts that have them. Concept 6 schools are thus neither inevitable nor caused by state failure.

Overall, California usually does better than other states with regard to resource equity. Moreover, the states that the plaintiffs want California to model do not seem to have done as good a job on this issue. This suggests that the plaintiffs do not know how to achieve the lofty goals they propose within the constraints of an open, democratic political process where many competing individuals and groups have access to government³⁶ and where policies passed by the central level of government get distorted when implemented at the local level. In short, the plaintiffs will not be satisfied with that comes from a new court order in a democratic society because they are not satisfied with what resulted from the last court order.

The record of the state of California indicates that there is no reason to dismiss democracy and the policy analysis literature suggests that a court order at this time could easily

³⁶ James Q. Wilson likens it to a bar room brawl in which any one can jump in and join the fight.

subvert the goal desired by the plaintiffs—more money spent on education and a population with the means and the will to fund it.

Table 1
% of Teachers With Emergency Credentials
in California Schools, 2000-01

| | Equation 1 | | | Equation 2 | | | Equation 3 | | | |
|--------------------------------|------------|-------|-------|------------|-------|--------|------------|--------|-------|---------|
| | Avg. b | SE b | Sig. | b | SE b | Sig. | b | SE b | Sig. | |
| % Emergency Credentials | 9.2 | | | | | | | | | |
| % Poor | 48.4 | 0.083 | 0.004 | 0.000 * | 0.04 | 0.0048 | 0.000 * | 0.024 | 0.005 | 0.000 * |
| % English Learner | 25.1 | | | | 0.10 | 0.0065 | 0.000 * | 0.018 | 0.008 | 0.015 |
| Elementary School | 0.7 | | | | | | | -3.697 | 0.257 | 0.000 * |
| % Bilingual Education | 6.2 | | | | | | | -0.007 | 0.007 | 0.296 |
| School Size | 769.3 | | | | | | | 0.001 | 0.000 | 0.000 * |
| % Minority | 62 | | | | | | | 0.123 | 0.006 | 0.000 * |
| Constant | | 5.028 | 0.213 | 0.000 * | 4.93 | 4.93 | 0.000 * | 1.453 | 0.358 | 0.000 * |
| N | | 8,430 | | | 8,430 | | | 7,583 | | |
| R2 | | 0.07 | | | 0.08 | | | 0.2048 | | |

Table 2
Summary of Multiple Regression Statistical Analyses*
of the Relationship Between School Achievement (SAT 9) and
the Percentage of Teachers Who Are Emergency Credentialed
in California Schools, 2000-01

| | EFFECT ON ACHIEVEMENT OF | | |
|-----------------------|---------------------------------|----------------------|-------------------------|
| | ALL STUDENTS | POOR STUDENTS | ENGLISH LEARNERS |
| Reading | 0.011 | Not Significant | 0.034 |
| Math | Not Significant | Not Significant | 0.014 |
| Language | 0.012 | Not Significant | 0.043 |
| Science | Not Significant | Not Significant | Not Significant |
| Social Studies | Not Significant | Not Significant | Not Significant |

Table 3
% of Teachers With Waivered Credentials
in California Schools, 2000-01

| | Equation 1 | | Equation 2 | | Equation 3 | |
|------------------------|------------|-------|------------|---------|------------|-------|
| | Avg. b | SE b | b | SE b | b | SE b |
| % Waivered Credentials | 0.8 | | | | | |
| % Poor | 48.4 | 0.002 | 0.001 | 0.001 | 0.001 | 0.001 |
| % English Learner | 25.1 | | 0.003 | 0.002 | 0.000 | 0.002 |
| Elementary School | 0.7 | | | | -0.859 | 0.064 |
| % Bilingual Education | 6.2 | | | | 0.006 | 0.002 |
| School Size | 768.0 | | | | 0.000 | 0.000 |
| % Minority | 62 | | | | 0.000 | 0.000 |
| Constant | | 0.699 | 0.052 | 0.000 * | 0.697 | 0.052 |
| N | | 8,400 | | 8,400 | | 7,597 |
| R2 | | 0.00 | | 0.00 | | 0.03 |

* Statistically significant.

Table 4
Summary of Multiple Regression Statistical Analyses*
of the Relationship Between School Achievement (SAT 9) and
the Percentage of Teachers with Waivered Credentials
in California Schools, 2000-01

| | EFFECT ON ACHIEVEMENT OF | | |
|-----------------------|---------------------------------|----------------------|-------------------------|
| | ALL STUDENTS | POOR STUDENTS | ENGLISH LEARNERS |
| Reading | Not Significant | Not Significant | Not Significant |
| Math | Not Significant | Not Significant | Not Significant |
| Language | Not Significant | Not Significant | Not Significant |
| Science | Not Significant | Not Significant | Not Significant |
| Social Studies | Not Significant | Not Significant | Not Significant |

Table 5

**Hypothetical Example of How Individual English Learners Can Make Progress
But English Learners as a Whole Make No Progress
Using 36th Percentile as Cut-Off**

| Year 1 | Year 2 | Year 3 | CHANGE FOR EACH EL STUDENT |
|--------------------------------------|----------------------|-----------|-----------------------------|
| | | 5 | |
| 35 | | | |
| | 7 | 40 | 33 |
| | 35 | | |
| 35 | | | 11 |
| 9 | | | |
| 9 | | | |
| 9 | | | |
| | | 10 | |
| | | 3 | |
| | | 5 | |
| 11 | | | |
| 12 | | | |
| 10 | | | |
| | 9 | | |
| | 8 | | |
| | 12 | | |
| 21 | | | |
| 19 | | | |
| 15 | | | |
| | 10 | 15 | 5 |
| | 5 | 10 | 5 |
| | 9 | 35 | 26 |
| | | 2 | |
| | | 3 | |
| | | 5 | |
| | 11 | 16 | 5 |
| | 5 | 20 | 15 |
| | 9 | 20 | 11 |
| 15 | 30 | | 21 |
| 8 | 21 | | 28 |
| 9 | 26 | | 27 |
| | | | = NO APPARENT CHANGE |
| AVG. ENGLISH LEARNER SCORE | TOTAL | 16 | 16 |
| AVG. GAIN FOR EACH EL STUDENT | ACTUAL CHANGE | | 17 |

Note: Shading denotes score is no longer included in the average for English Learners.

Table 6
Change in English Learner Achievement (CTBS)
Predicted from Certified Bilingual Teachers
Berkley Unified School District,
Spring 1987-Spring 1988

READING ACHIEVEMENT

| Variable | Mean | b | SE b | Beta |
|-----------------------------|-------------|----------|-------------|----------------------|
| NCE CTBS Reading Change | 2.43 | | | |
| NCE CTBS Reading 1987 | 28.33 | -0.417 * | 0.119 | -0.44 |
| Father's Occupation | 22.29 | 0.099 | 0.153 | 0.08 |
| Grade | 2.44 | 2.465 | 1.666 | 0.33 |
| Years in Program | 3.07 | -1.454 | 1.538 | -0.19 |
| Certified Bilingual Teacher | 0.71 | 2.072 | 5.428 | 0.06 Not Significant |
| Constant | | 9.015 | | |
| r ² | | 0.224 | | |
| N | | 77 | | |

MATH ACHIEVEMENT

| Variable | Mean | b | SE b | Beta |
|-----------------------------|-------------|----------|-------------|-----------------------|
| NCE CTBS Math Change | 2.67 | | | |
| NCE CTBS Math 1987 | 40.21 | -0.745 * | 0.082 | -0.8 |
| Father's Occupation | 22.29 | 0.139 | 0.169 | 0.07 |
| Grade | 2.44 | -2.12 | 1.85 | -0.18 |
| Years in Program | 3.07 | 2.301 | 1.73 | 0.19 |
| Certified Bilingual teacher | 0.71 | -1.614 | 5.985 | -0.03 Not Significant |
| Constant | | 28.79 | | |
| r ² | | 0.612 | | |
| N | | 78 | | |

LANGUAGE ACHIEVEMENT

| Variable | Mean | b | SE b | Beta |
|-----------------------------|-------------|----------|-------------|----------------------|
| NCE CTBS Language Change | -1.32 | | | |
| NCE CTBS Language 1987 | 37.34 | -0.355 * | 0.093 | -0.53 |
| Father's Occupation | 22.29 | 0.051 | 0.146 | 0.05 |
| Grade | 2.44 | -0.804 | 1.642 | -0.12 |
| Years in Program | 3.07 | 2.081 | 1.528 | 0.31 |
| Certified Bilingual teacher | 0.71 | 1.187 | 5.234 | 0.04 Not Significant |
| Constant | | 5.534 | | |
| r ² | | 0.256 | | |
| N | | 62 | | |

*Statistically significant at .05 or better

Table 7
Summary of Multiple Regression Analyses*
of the Relationship Between School Achievement (SAT 9) and
the Percentage of Teachers Who Are Language Teaching Credentialed
in California Schools, 2000-01

| | Teacher Authorization | | |
|-----------------------------|-----------------------------------|---|---|
| | % Fully Credentialed ¹ | % Credentialed Including SB 1969 or District Authorization ² | % CTC Bilingual Authorized ³ |
| Reading Achievement | Not Significant | Not Significant | Not Significant |
| Math Achievement | Not Significant | Not Significant | Not Significant |
| Language Achievement | Not Significant | Not Significant | Not Significant |

¹ Teachers with a CTC Bilingual, SDAIE, or ELD teaching authorization teaching in primary lang. or English.

² Teachers with a CTC Bilingual, SDAIE, or ELD teaching authorization or with an SB 1969 Certificate of Completion or District Designated (CDE approved) authorization teaching in primary lang. or English.

³ Teachers with a CTC Bilingual Authorization providing primary language instruction.

Table 8
Relationship Between the Quality of School Facilities and Average School Achievement
in a Georgia School District, 2000-01

| | Avg. | Equation 1 | | | Equation 2 | | | Equation 3 | | |
|-------------------------------------|------|------------|--------|---------|------------|--------|---------|------------|--------|---------|
| | | b | SE b | Sig. | b | SE b | Sig. | b | SE b | Sig. |
| | 50 | | | | | | | | | |
| % Black | 42 | 0.002 | 0.032 | 0.947 | -0.001 | 0.032 | 0.965 | -0.003 | 0.033 | 0.927 |
| % Poor | 42 | -0.295 | 0.034 | 0.000 * | -0.289 | 0.034 | 0.000 * | -0.289 | 0.035 | 0.000 * |
| Facilities Rating | 91 | 0.103 | 0.160 | 0.521 | 0.107 | 0.160 | 0.505 | 0.120 | 0.162 | 0.463 |
| Elementary School (1=yes) | 0.8 | 5.393 | 1.364 | 0.000 * | 4.916 | 1.468 | 0.002 * | 4.977 | 1.480 | 0.001 * |
| % of Capacity Utilized ^a | 91 | | | | -0.027 | 0.030 | 0.380 | -0.018 | 0.033 | 0.590 |
| Est. % Enroll. in Portables | 28 | | | | | | | 0.014 | 0.022 | 0.534 |
| Constant | | 48.257 | 14.209 | 0.001 * | 50.535 | 14.468 | 0.001 * | 48.229 | 15.012 | 0.002 * |
| N | | 58 | | | 58 | | | 58 | | |
| R ² | | 0.90 | | | 0.90 | | | 0.90 | | |

* Statistically significant.

| | Avg. | Equation 1 | | | Equation 2 | | | Equation 3 | | |
|-------------------------------------|------|------------|--------|---------|------------|--------|---------|------------|--------|---------|
| | | b | SE b | Sig. | b | SE b | Sig. | b | SE b | Sig. |
| | 51 | | | | | | | | | |
| % Black | 42 | 0.010 | 0.031 | 0.756 | 0.007 | 0.031 | 0.833 | 0.003 | 0.031 | 0.915 |
| % Poor | 42 | -0.305 | 0.033 | 0.000 * | -0.300 | 0.033 | 0.000 * | -0.298 | 0.033 | 0.000 * |
| Facilities Rating | 91 | 0.054 | 0.155 | 0.730 | 0.058 | 0.156 | 0.714 | 0.084 | 0.156 | 0.592 |
| Elementary School (1=yes) | 0.8 | 2.884 | 1.325 | 0.034 * | 2.476 | 1.429 | 0.089 | 2.606 | 1.420 | 0.072 |
| % of Capacity Utilized ^a | 91 | | | | -0.023 | 0.029 | 0.439 | -0.004 | 0.032 | 0.889 |
| Est. % Enroll. in Portables | 28 | | | | | | | 0.029 | 0.021 | 0.172 |
| Constant | | 56.452 | 13.810 | 0.000 * | 58.401 | 14.085 | 0.000 * | 53.511 | 14.403 | 0.001 * |
| N | | 58 | | | 58 | | | 58 | | |
| R ² | | 0.90 | | | 0.90 | | | 0.90 | | |

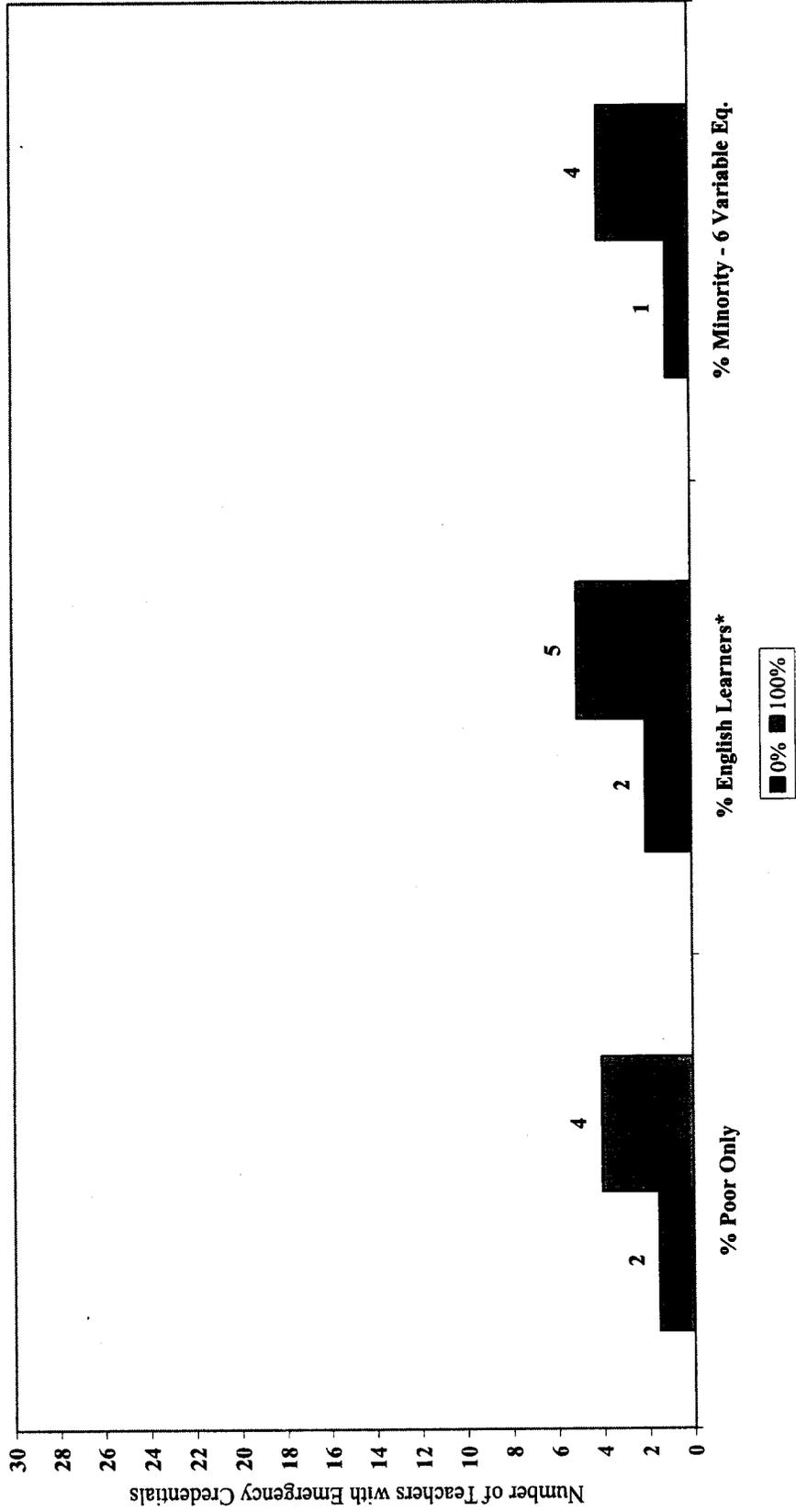
* Statistically significant.

| | Avg. | Equation 1 | | | Equation 2 | | | Equation 3 | | |
|-------------------------------------|------|------------|--------|---------|------------|--------|---------|------------|--------|---------|
| | | b | SE b | Sig. | b | SE b | Sig. | b | SE b | Sig. |
| | 53 | | | | | | | | | |
| % Black | 42 | -0.003 | 0.035 | 0.944 | -0.006 | 0.036 | 0.873 | -0.009 | 0.036 | 0.795 |
| % Poor | 42 | -0.314 | 0.037 | 0.000 * | -0.309 | 0.038 | 0.000 * | -0.307 | 0.038 | 0.000 * |
| Facilities Rating | 91 | -0.009 | 0.177 | 0.958 | -0.005 | 0.177 | 0.976 | 0.023 | 0.178 | 0.897 |
| Elementary School (1=yes) | 0.8 | 5.270 | 1.508 | 0.001 * | 4.834 | 1.627 | 0.004 * | 4.974 | 1.620 | 0.003 * |
| % of Capacity Utilized ^a | 91 | | | | -0.024 | 0.033 | 0.468 | -0.005 | 0.036 | 0.900 |
| Est. % Enroll. in Portables | 28 | | | | | | | 0.031 | 0.024 | 0.195 |
| Constant | | 65.467 | 16.038 | 0.000 * | 65.467 | 16.038 | 0.000 * | 60.179 | 16.430 | 0.001 * |
| N | | 58 | | | 58 | | | 58 | | |
| R ² | | 0.89 | | | 0.89 | | | 0.89 | | |

* Statistically significant.

^a Includes portables.

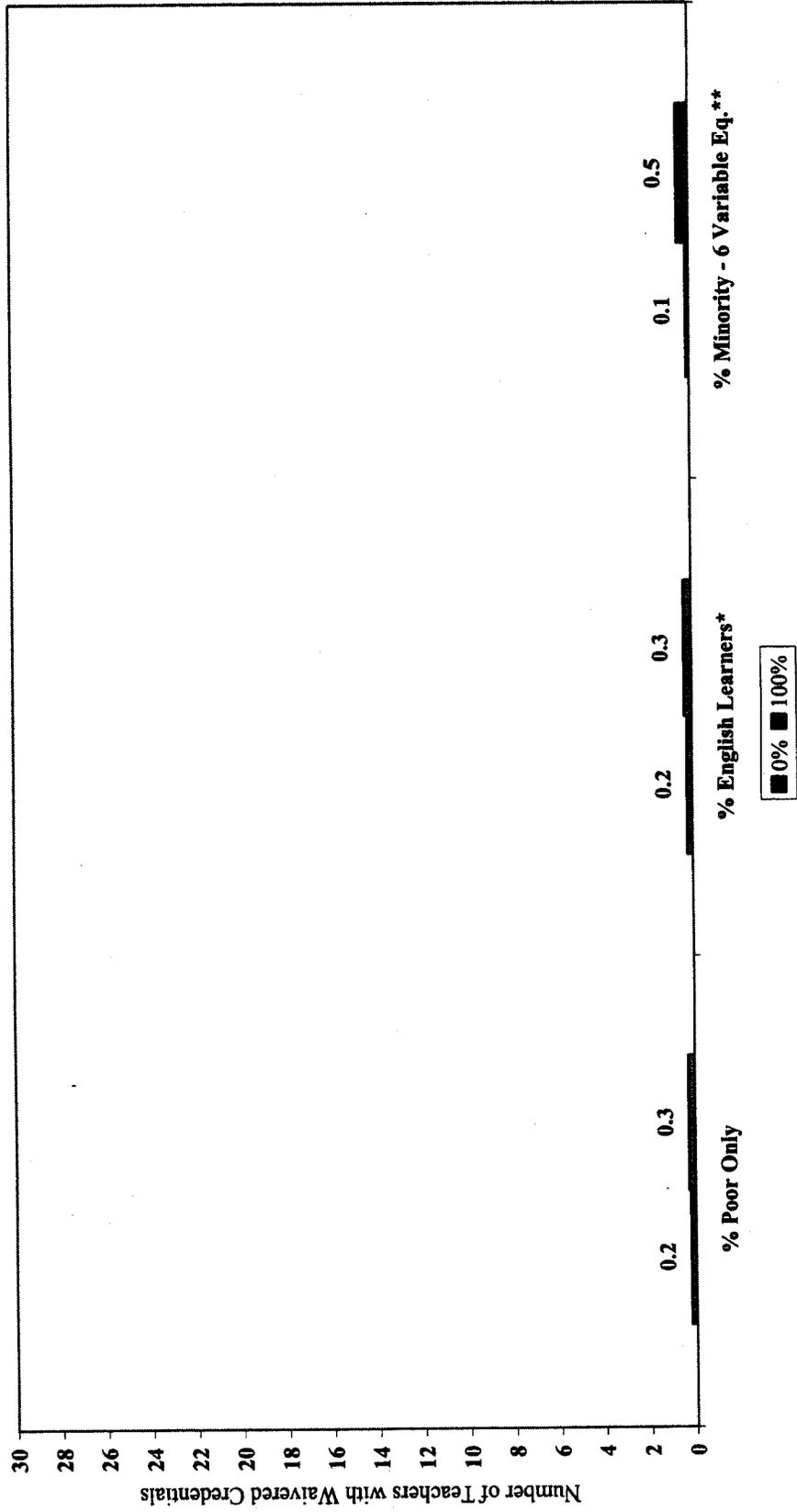
Figure 1
The Number of Teachers with Emergency Credentials in the Typical School of 30 Teachers With 0% and 100% Poor Students, English Learners or Minority Students Predicted from Equations Analyzing California Schools, 2000-01



* Solved for % English Learners holding % poor constant at the mean.

** Solved for % minority students holding elementary school, % poor, % English Learners, school size, and % bilingual constant at the mean.

Figure 2
The Number of Teachers with Waivered Credentials in the Typical School of 30 Teachers With 0% and 100% Poor Students, English Learners or Minority Students Predicted from Equations Analyzing California Schools, 2000-01



* Solved for % English Learners holding % poor constant at the mean.

** Solved for % minority students holding elementary school, % poor, % English Learners, school size, and % bilingual constant at the mean.

Figure 4
Change from 2001 to 2002 in % of California English Learners at Each English Learner Level

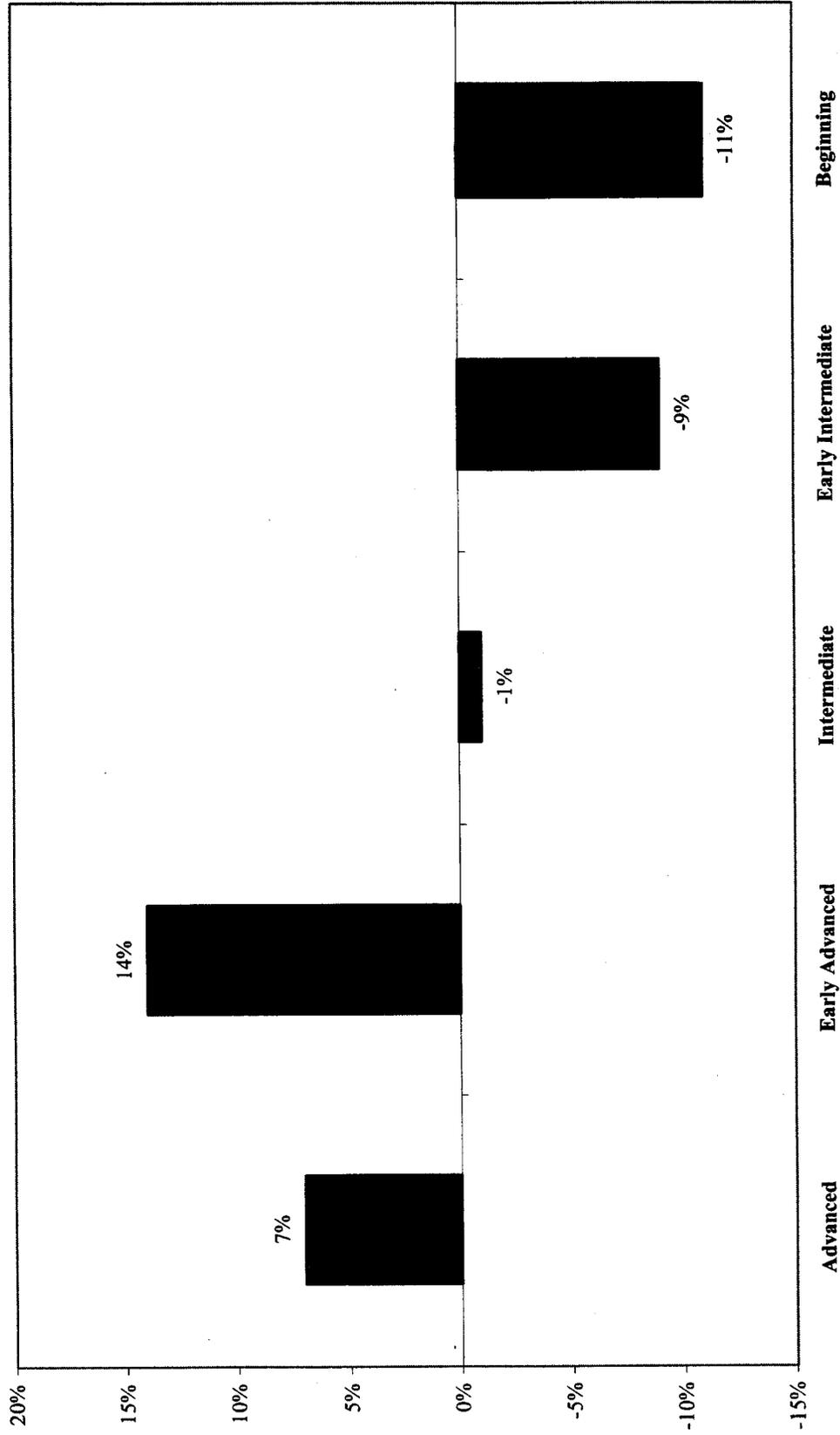


Figure 5
Per Pupil Expenditures in the U.S. States, 2001-01

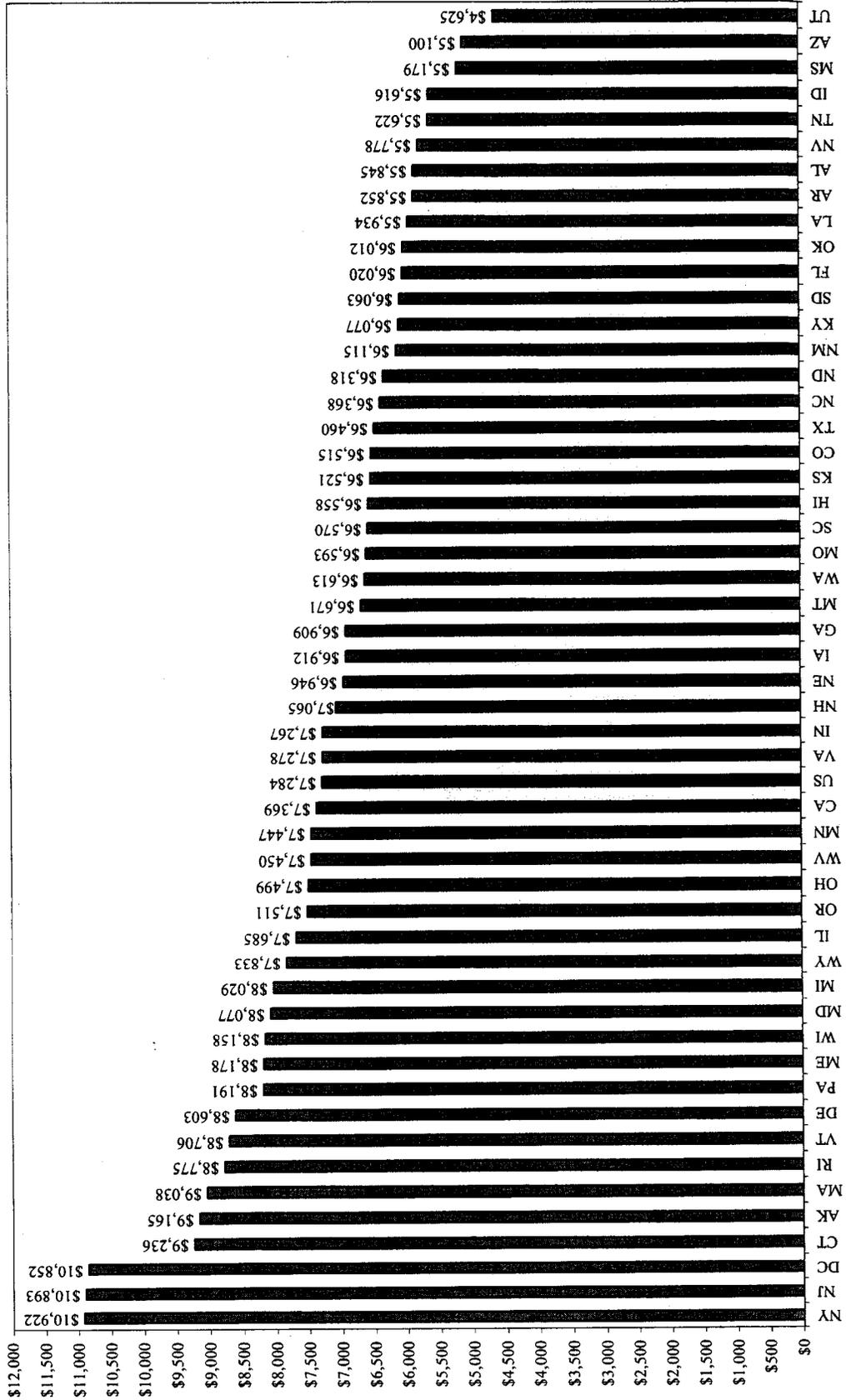


Figure 6
Expenditures on Education as a Percentage of Total State Government Expenditures, 2000-01

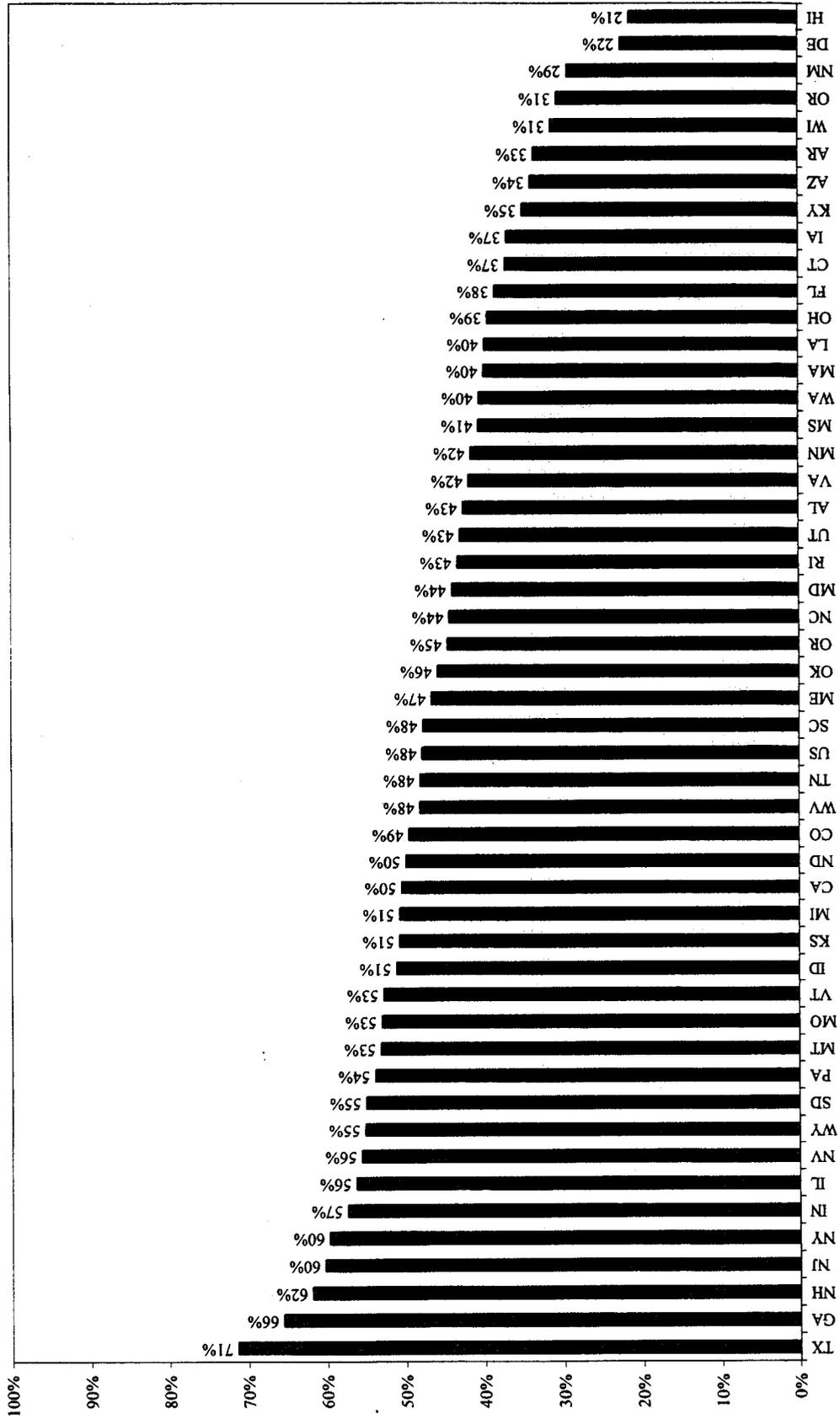


Figure 7
Per Pupil Expenditures in School Districts Above and Below the State Average % on Free or Reduced Lunch in California School Districts, 1999-00 and 2000-01

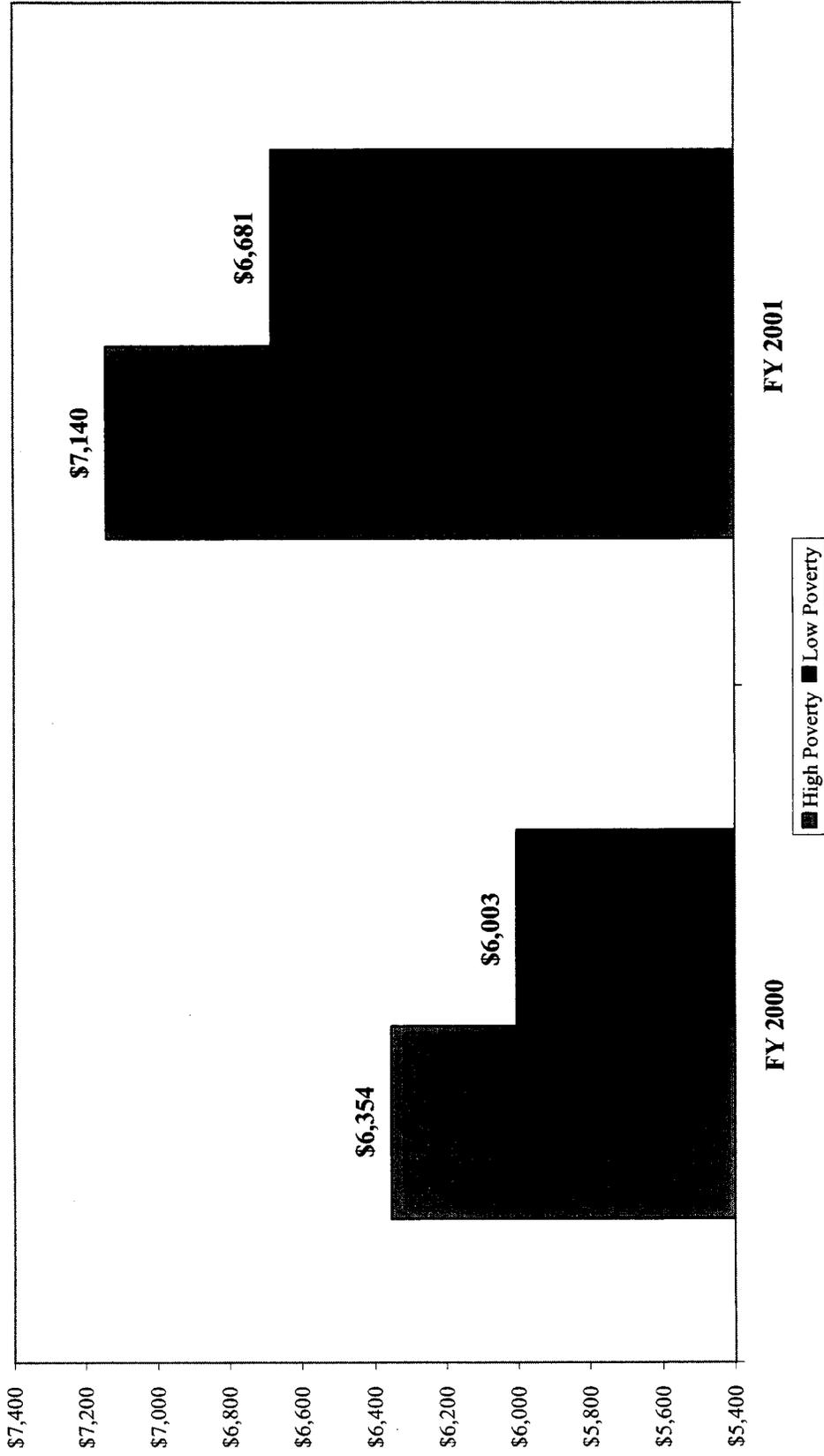
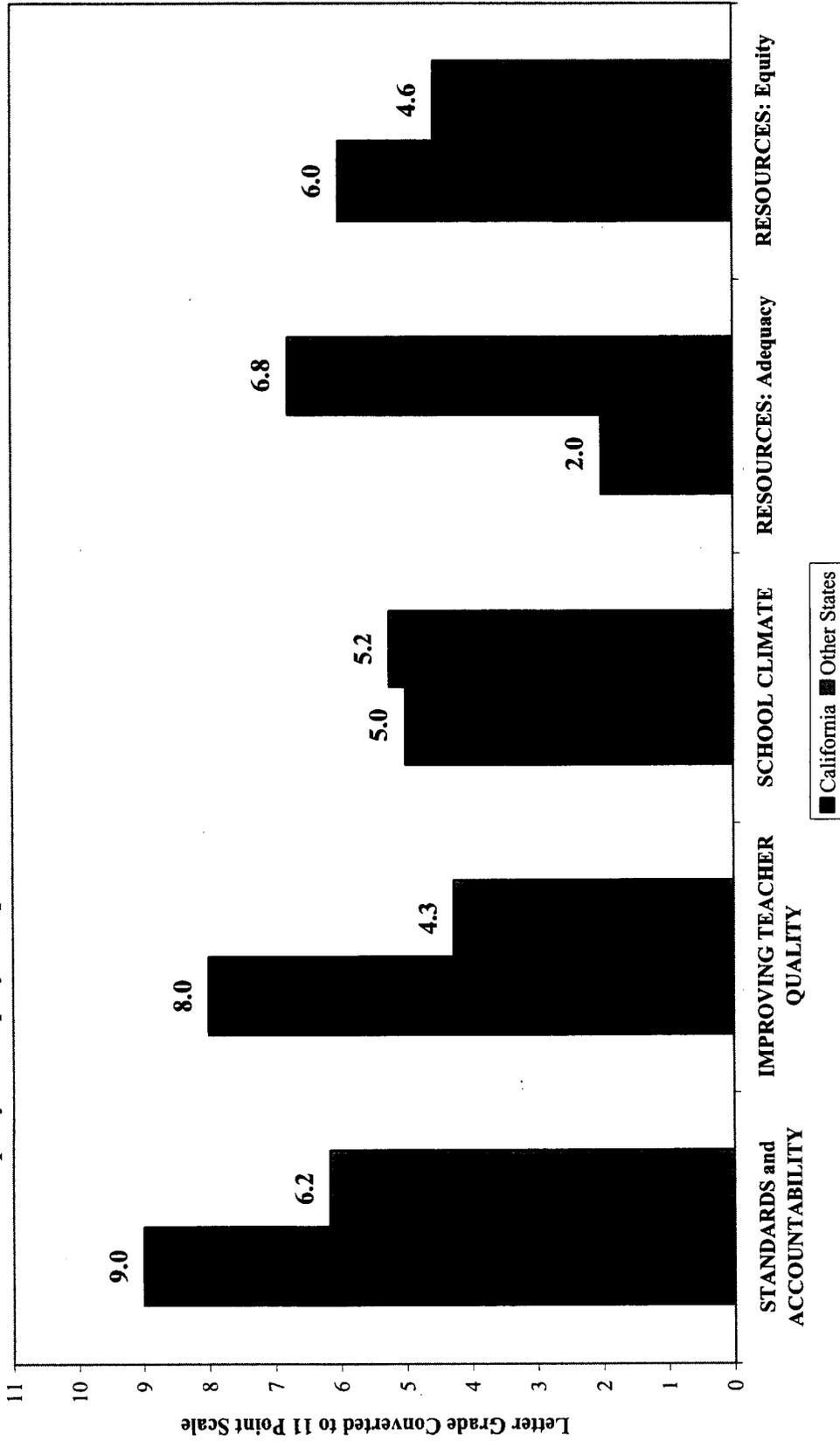
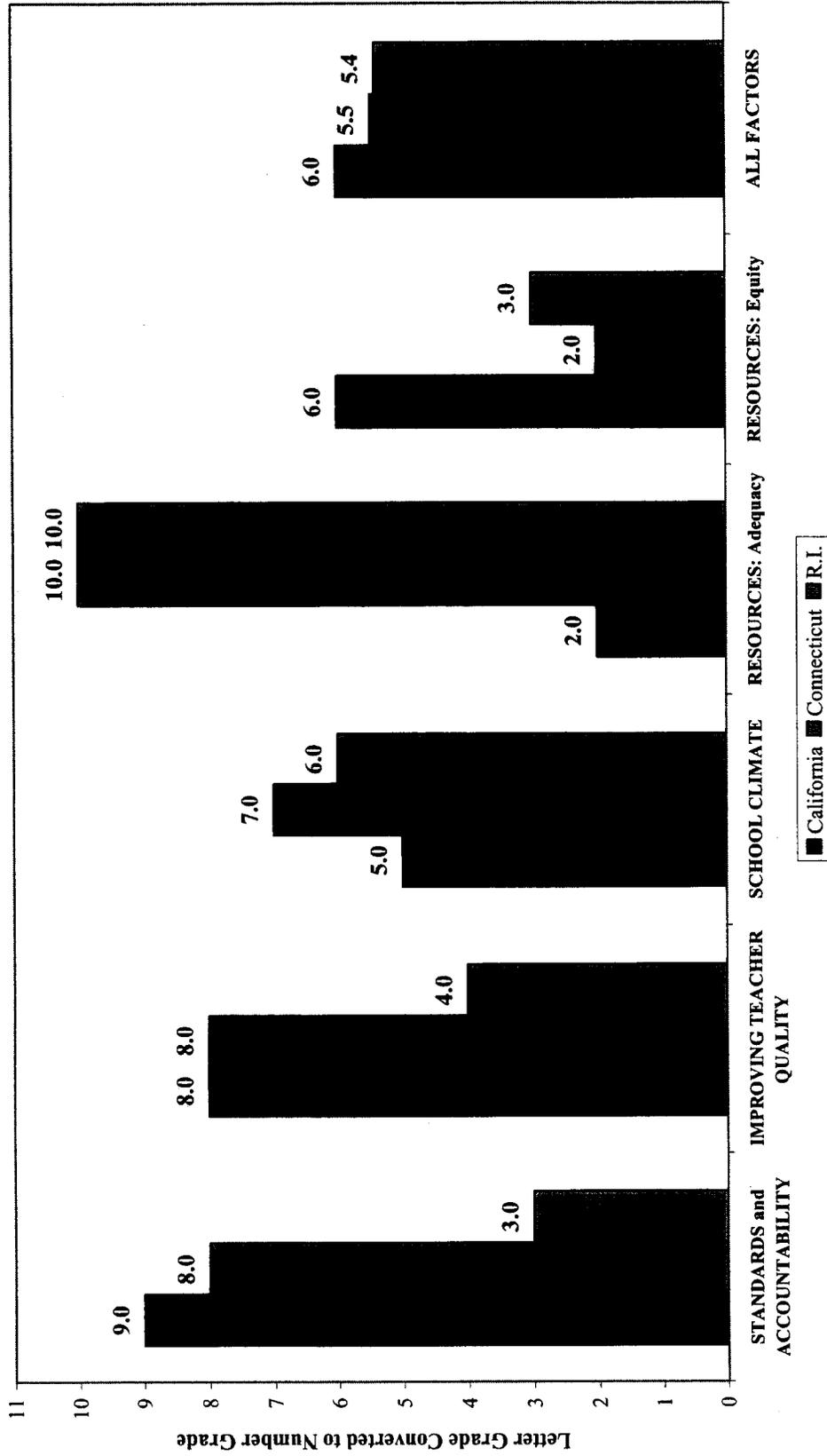


Figure 8
An Assessment of California's Standards, Accountability, Teacher Quality, School Climate, Resource Adequacy and Equity Compared to the Other States by *Education Week*, January 2003



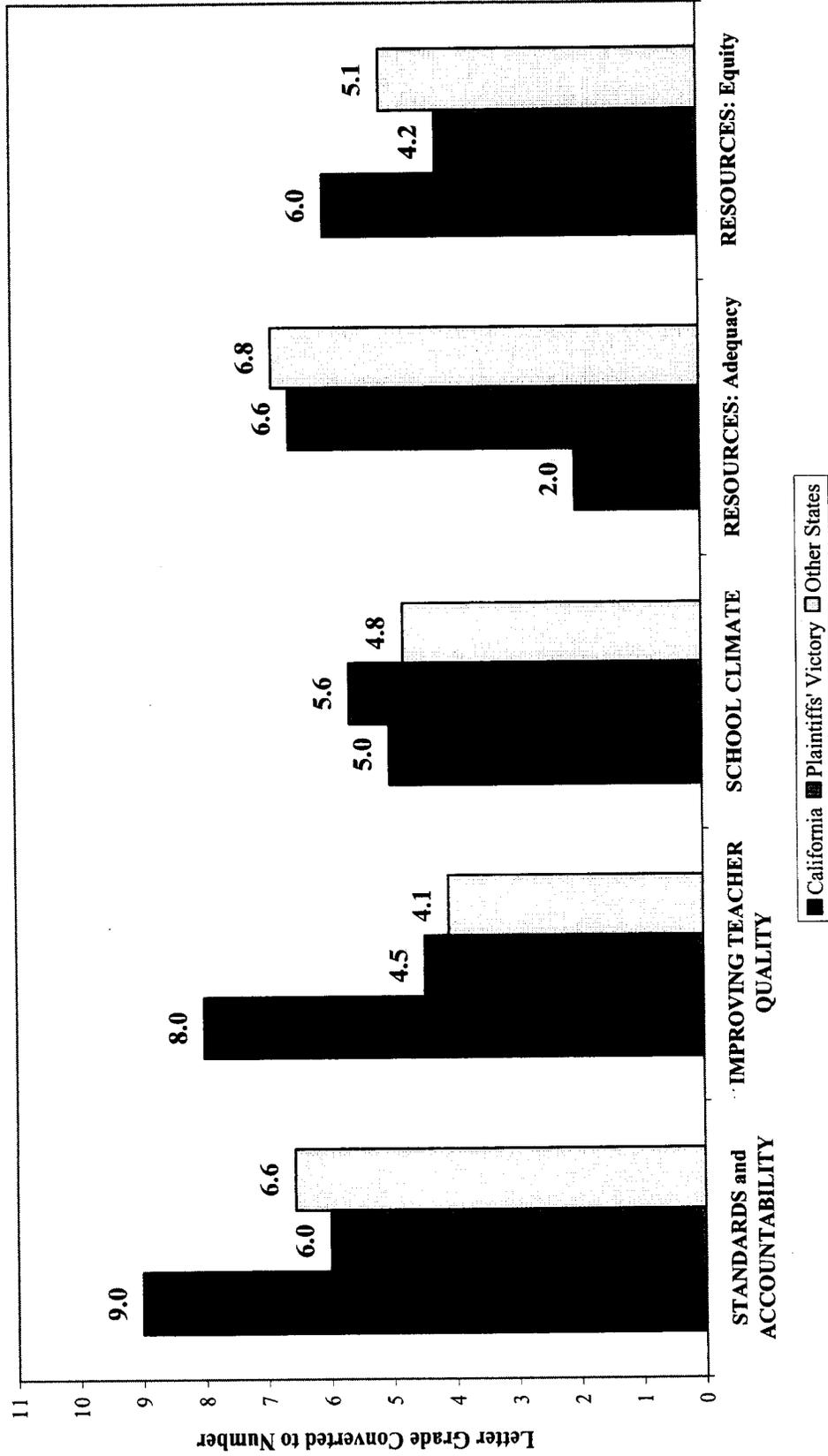
Source: <http://www.edweek.org/sreports/>.

Figure 9
A Comparison of Education Week's Rating of California and Two States Cited by Oakes* as Having Systemic Reform



* J. Oakes, "Education Inadequacy..." [synthesis report for this case], p. 49.

Figure 10
A Comparison of *Education Week*'s Ratings of Standards, Accountability, Teacher Quality, School Climate, Resource Adequacy, Teacher Quality, School Climate, Resource Adequacy, Resources: Equity, School Climate, Resource Adequacy, Resources: Equity
Climate, Resource Adequacy and Equity in States with and without Plaintiffs' Victory in a Fiscal Equity Court Case, January 2003



APPENDIX 1

4/15/03

Vita of Christine H. Rossell

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EDUCATION: Ph.D., Political Science, University of Southern California, January 1974;
M.A., Political Science, California State University, Northridge, June 1969;
B.A., International Relations (Latin America), UCLA, June 1967.

FIELDS OF CONCENTRATION: Public policy; public policy analysis; school desegregation and educational policy; bilingual education; urban politics and policy; methodology. Dissertation: "The Electoral Impact of School Desegregation in 67 Northern Cities," University of Southern California, 1973.

ACADEMIC POSITIONS

Boston University, Political Science Department, 1975-present

Professor, 1989-present; Associate Professor (tenured), 1982-1989; Assistant Professor, 1975-1982.

Administrative Responsibilities: Chairperson, 1992-1995; Assistant Chairperson, 1982-1985; Director of Undergraduate Studies, 1985-1992.

Public Policy Institute of California, Visiting Fellow, Jan. 1-June 1, 1999.

University of Canberra (Canberra, Australia)
(formerly CCAE), Visiting Lecturer, Fall 1985.

University of California, Berkeley, Graduate School of Public Policy
Visiting Assistant Professor, Jan. - June 1981.

Duke University, Institute of Policy Sciences
Visiting Assistant Professor, 1977-78.

University of Maryland, College Park
Research Associate, Bureau of Governmental Research; Lecturer, Institute for Urban Studies; 1974-75.

Pitzer College (the Claremont Colleges, Claremont, Calif.)
Assistant Professor, Political Studies, 1973-74.

Johns Hopkins University
Research Assistant, Center for Metropolitan Planning and Research, , 1972-73.

ACADEMIC AWARDS AND RESEARCH GRANTS

Who's Who in America, 1995, 1996, 1997, 1998, 1999, 2000; 2001; 2002; Who's Who in the World, 1995-96, 1999-2000; 2001; Who's Who in American Education, 1994-95, 1995-96, 1996-97.

Dean's Award for Outstanding Teaching, College of Arts and Sciences, Boston University, 2000.

Fellowship, Public Policy Institute of California, San Francisco, CA, Jan. 1-June 1, 1999.

with Keith Baker, "Bilingual Education Reform in Massachusetts," Pioneer Institute, 1992-95.

with Keith Baker, "Bilingual Education as a Civil Rights Policy," Smith Richardson Foundation, 1991-92.

"Magnet Schools and Issues of Public School Desegregation, Quality, and Choice," (contract LC 90043001) awarded to American Institutes for Research by the Department of Education, subcontracted to me as co-principal investigator, 1990-93.

"The Effectiveness of Desegregation Plan Characteristics in Producing Interracial Exposure," funded by the Department of Education, 1987-88.

"The Long-Term Impact of Magnet Schools as Desegregation Tools," funded by the National Institute of Education, 1983-1985

Co-Investigator, "Assessment of Current Knowledge About the Effectiveness of School Desegregation Strategies," funded by the National Institute of Education, 1979-81.

Abt Associates award for the best essay on social policy, 1979.

Co-principal Investigator with J. Michael Ross, "The Long-Term Effect of Court-Ordered School Desegregation on White Withdrawal from Central City Public School Systems: the Case of Boston, 1974-79," funded by the Ford Foundation and the Carnegie Corporation, 1978-79.

"The Social Impact of School Desegregation," funded by the National Institute of Education, 1973-76.

Graduate School Awards: Haynes Foundation Graduate Research Fellowship, 1972-73; Teaching Fellowship, Political Science Dept., 1970-72; University Grant, 1971; Graduate Tuition Award, 1970; University of Southern California.

PUBLICATIONS

Books

Christine H. Rossell, David J. Armor, and Herbert Walberg, (eds.) School Desegregation in the 21st Century, Westport, Ct.: Praeger Publishers, 2002.

Christine H. Rossell and Keith Baker, Bilingual Education in Massachusetts: the Emperor Has No Clothes. Boston, MA: Pioneer Institute, 1996.

- **Chapter 3** reprinted in Nicholas Capaldi, Immigration: Debating the Issues. (Amherst, N.Y.: Prometheus Books, 1997)

Christine H. Rossell, The Carrot or the Stick for School Desegregation Policy: Magnet Schools vs. Forced Busing. (Philadelphia: Temple University Press, 1990).

Christine H. Rossell and Willis D. Hawley (eds.). The Consequences of School Desegregation. (Philadelphia: Temple University Press, 1983).

Willis D. Hawley, Robert L. Crain, Christine H. Rossell, Janet Schofield, Janet Eylor, and others. Strategies for Effective Desegregation. (Lexington, Ma.: Lexington Books, 1983).

Journal Articles and Book Chapters

"The Evolution of School Desegregation Plans Since 1954" in Stephen Caldas and Carl Bankston (eds), The End of School Desegregation? Nova Science Publishers, forthcoming 2003. [65]

"Dismantling Bilingual Education: the Impact of Proposition 227 in California," Education Next, forthcoming Summer 2003. [64]

"The Desegregation Efficiency of Magnet Schools," Urban Affairs Review (formerly Urban Affairs Quarterly), forthcoming May 2003. [63]

*with David J. Armor and Herbert J. Walberg, "Introduction: Assessing the Promise of *Brown*," in Rossell, Armor, and Walberg, (eds.), School Desegregation in the 21st Century, pp. 1-16. Westport, Ct.: Praeger Publishers, 2002. [62]

"The Effectiveness of Desegregation Plans," in Rossell, Armor, and Walberg, (eds.), School Desegregation in the 21st Century, pp. 67-118. Westport, Ct.: Praeger Publishers, 2002. [61]

"Ability Grouping and Classroom Desegregation," in Rossell, Armor, and Walberg, (eds.), School Desegregation in the 21st Century, pp. 189-234. Westport, Ct.: Praeger Publishers, 2002. [60]

*with David J. Armor, "Attitudes on Race and Desegregation," in Rossell, Armor, and Walberg, (eds.), School Desegregation in the 21st Century, pp. 291-322. Westport, Ct.: Praeger Publishers, 2002. [59]

with David J. Armor and Herbert J. Walberg, "The Outlook for School Desegregation," in Rossell, Armor, and Walberg, (eds.), School Desegregation in the 21st Century, pp. 323-334. Westport, Ct.: Praeger Publishers, 2002. [58]

with David J. Armor, "Desegregation and Resegregation in the Public Schools," in Abigail Thernstrom and Stephen Thernstrom, Beyond the Color Line, pp. 219-258. Palo Alto, CA: Hoover Institution Press, 2002. [57]

"All That Glitters is Not Gold: the Limits of the California Department of Education's English Learner Achievement Data," Read Perspectives, vol. 8, Fall 2001: 151-168. [56]

"Is One Year Enough?," in The ABCs of English Immersion: a Teacher's Guide. Washington, D.C.: Center for Equal Opportunity, 2000. [55]

"Educating Limited English Proficient Students," American Language Review, September/October 2000 (4): 15-19. [54]

"Different Questions, Different Answers: A Critique of the Hakuta, Butler and Witt Report, 'How long does it take English learners to attain proficiency?'," READ Perspectives, Volume VII, October 2000: 134-154. [53]

"The Federal Bilingual Education Program: Title VII of the Elementary and Secondary Education Act," in Brookings Papers on Education Policy, 2000, edited by Diane Ravitch, Washington, D.C.: Brookings Institution, 2000: 215-244. [52]

"Teaching Language Minorities: Theory and Reality," in City Schools: Lessons From New York, edited by Diane Ravitch and Joseph Viteritti, Baltimore: Johns Hopkins University Press, 2000: 187-218. [51]

"Mystery on the Bilingual Express: a Critique of the Thomas and Collier Study," Read Perspectives, V (2), Fall 1998: 5-32.

• **Reprinted** in Rosalie Porter (ed.), Educating Language Minority Children, Vol. 6 of Read Perspectives, 2000 [50]

"The Convergence of Black and White Attitudes on School Desegregation Issues," in Redefining Equality, Neal Devins and Dave Douglas (eds.). New York: Oxford University Press, 1998. [49]

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*with Keith Baker, "Response," Research in the Teaching of English, October 1996, 30 (3): 70-86 (symposium). [47]

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- *with Keith Baker, "The Educational Effectiveness of Bilingual Education," Research in the Teaching of English, February 1996, 30 (1): 7-74. [45]
- *with David Armor, "The Effectiveness of School Desegregation Plans, 1968-1991," American Politics Quarterly, July 1996, 24 (3): 267-302. [44]
- "The Convergence of Black and White Attitudes on School Desegregation Issues During the Four Decade Evolution of the Plans," The William and Mary Law Review, January 1995, 36(2): 613-663. [43]
- "Controlled Choice Desegregation Plans: Not Enough Choice, Too Much Control?" Urban Affairs Review (formerly Urban Affairs Quarterly), September 1995, 31(1) 43-76. [42]
- "The Progeny of Brown: From the Old Freedom of Choice to the New Freedom of Choice in Four Decades," Urban Geography, 15 (5), July-August 1994: 435-453. [41]
- Reprinted in Readings on Equal Education, Charles Teddlie and Richard Fossey (eds.), vol. 15, 1996.
- *with Christine Bachen, "Advertising on Channel One: Are Students a Captive Audience?" The High School Journal, February 1993, 76 (2): 100-109. [40]
- "Using Multiple Criteria to Evaluate Public Policies: the Case of School Desegregation," American Politics Quarterly, April 1993 (21): 155-184. [39]
- "Nothing Matters? A Critique of the Ramirez, et. al. Longitudinal Study of Instructional Programs for Language Minority Children," Bilingual Research Journal, 16 (1 & 2), Winter & Spring 1992: 159-186. [38]
- "Bilingual Education and Bilingual Certified Teachers: Are They Necessary?" in Keith Baker (ed.), Bilingual Education: Legal Issues, Bloomington, IN: Phi Delta Kappa, 1991. [37]
- "The Effectiveness of Educational Alternatives for Limited English Proficiency Children," in Gary Imhoff (ed.), The Social and Cultural Context of Instruction in Two Languages: From Conflict and Controversy to Cooperative Reorganization of Schools. (New York: Transaction Books, 1990). [36]
- "The Research on Bilingual Education," Equity and Choice, 6 (2), 1990, 29-36. [35]
- "The Carrot or the Stick for School Desegregation Policy?" Urban Affairs Quarterly, 25 (3), 1990, 474-499.
- with Robert Crain, "Catholic Schools and Racial Segregation" in Public Values, Private Schools, Neal Devins (ed.). (Stanford: Falmer Press, 1989). [33]
- "How Effective are Voluntary Plans with Magnet Schools?" Educational Evaluation and Policy Analysis, 10 (4), 1989, 325-342. [32]
- *with Charles Glenn, "The Cambridge Controlled Choice Plan," The Urban Review, 20 (2), 1988, 75-94. [31]
- *with Keith Baker, "Selecting and Exiting Students in Bilingual Education Programs," Journal of Law and Education, 17 (4), Fall, 1988, 589-624. [30]
- "The Problem with Bilingual Education Research: A Critique of the Walsh and Carballo Study of Massachusetts Bilingual Education Programs," Equity and Excellence, 23 (4) Summer 1988, 25-29. [29]
- "Race and Ethnic Relations Among High School Youth: Perspectives From Political Science," International Journal of Group Tensions, 18, Spring 1988, 44-55. [28]
- "Is it the Busing or the Blacks?," Urban Affairs Quarterly, 24, September 1988, 138-148. [27]

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"Estimating the Net Benefit of School Desegregation Reassignments," Educational Evaluation and Policy Analysis, 7, Fall 1985, 217-227. [22]

"What is Attractive About Magnet Schools?" Urban Education, 20, April 1985, 7-22. [21]

"Applied Social Science Research: What Does It Say About the Effectiveness of School Desegregation Plans?" Journal of Legal Studies, 12, January 1983, 69-107. [20]

*with W.D. Hawley, "Introduction: Desegregation and Change," in Christine H. Rossell and Willis D. Hawley (eds.), The Consequences of School Desegregation. (Philadelphia: Temple University Press, 1983). [19]

"Desegregation Plans, Racial Isolation, White Flight, and Community Response," in Christine H. Rossell and Willis D. Hawley (eds.), The Consequences of School Desegregation. (Philadelphia: Temple University Press, 1983). [18]

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*with Robert L. Crain, "The Importance of Political Factors in Explaining Northern School Desegregation," The American Journal of Political Science, 26, November 1982, 772-796. [16]

*with W.D. Hawley, "Policy Alternatives for Minimizing White Flight," Educational Evaluation and Policy Analysis, 4, Summer 1982, 205-222. [15]

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"The Atheoretical Nature of Desegregation," Educational Evaluation and Policy Analysis, 3, May-June 1981, 95-97. [13]

"Social Science Research in Educational Equity Cases: a Critical Review," Review of Research in Education, 8, 1980, 237-295. [12]

"Magnet Schools as a Desegregation Tool: the Importance of Contextual Factors in Explaining Their Success," Urban Education, 20, October 1979, 303-320. [11]

"School Desegregation and Community Social Change," Law and Contemporary Problems, 42, Summer 1978, 133-183. (10)

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- "The Effect of School Integration on Community Integration," Journal of Education, 160, May 1978, 46-62.
- "The Effect of Community Leadership and the Mass Media on Public Behavior," Theory Into Practice, 17, April 1978, 131-139. (6)
- "Boston's Desegregation and White Flight," Integrated Education, January-February 1977, 36-39. (5)
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- "School Desegregation and White Flight," Political Science Quarterly, 92, Winter 1975-76, 675-696;
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- "School Desegregation and Electoral Conflict," in F. Wirt, ed., The Polity of the School (Lexington, Ma.: Lexington Books, 1975) pp. 49-64. (2)
- "Measuring School Desegregation," Chapt. 12 in Political Strategies in Northern School Desegregation, D.J. Kirby, T.R. Harris, R.L. Crain, and C.H. Rossell (Lexington, Ma.: Lexington Books, 1973) pp. 171-203. (1)

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- Lorraine M. McDonnell, P. Michael Timpane, and Roger Benjamin (Eds.) Rediscovering the Democratic Purposes of Education. Lawrence, Kansas. The University Press of Kansas, 2000 in American Political Science Review, 96 (02) June 2002, 429-430. [9]
- Steven Taylor, Desegregation in Boston and Buffalo: the Influence of Local Leaders, (Albany, N.Y.: The State University of New York Press, 1998, in American Political Science Review, June 2000. [8]
- Ronald P. Formisano, Boston Against Busing: Race, Class, and Ethnicity in the 1960s and 1970s (Chapel Hill and London, The University of North Carolina, 1991 in Political Science Quarterly, 107, Fall 1992, 558.[7]
- Mark A. Chesler, Joseph Sanders, and Debra Kalmuss, Social Science in Court (Madison: The University of Wisconsin Press, 1988) in Contemporary Sociology, 19 (2), March 1990, 263-264. [6]
- Charles V. Willie, School Desegregation Plans That Work (Westport, CT.: Greenwood Press, 1984) in Contemporary Sociology 14, May 1985, 392-394. [5]
- Emmett H. Buell, Jr., School Desegregation and Defended Neighborhoods (Lexington, Ma.: Lexington Books, 1982) in Political Science Quarterly, 98, Winter 83-84. [4]
- Robert H. Salisbury, Citizen Participation in the Public Schools (Lexington, Ma.: Lexington Books, 1980) in Political Science Quarterly, 96, Spring 1981, 169-171. [3]
- Florence H. Levinsohn and Benjamin D. Wright, eds., School Desegregation, Shadow and Substance, (Chicago: University of Chicago Press, 1976) in Political Science Quarterly, 92, Spring 1977, 136-137. [2]
- Howard D. Hamilton and Sylvan H. Cohen, Policymaking by Plebiscite: School Referenda (Lexington, Ma.: Lexington Books, 1974) in The American Political Science Review, 71, Sept. 1977, 1181-1182. [1]

TECHNICAL REPORTS

- "A Rebuttal Report on the Desegregation of the Fulton County Schools," a report prepared in the case of *Hightower v. West*, March 2, 2003.

"The Desegregation of the Fulton County Schools," a report prepared in the case of *Hightower v. West*, January 22, 2003.

Rebuttal Report on the Student Assignment Plan of the Lynn Public Schools," a report prepared in the case of Comfort v. Lynn and Commonwealth of Massachusetts and Bollen v. Lynn, May 10, 2002. [67]

"Opinions on the Secondary Student Assignment Policy in San Jose Unified School District," a report to the San Jose Unified School District, April 25, 2002. [66]

"Dismantling Bilingual Education, Implementing English Immersion: the California Initiative," February 20, 2002. [65]

"Desegregation Issues in the Dayton Public Schools," a report prepared in the case of *Brinkman v. Gilligan*, February 8, 2002. [64]

"The Desegregation of the Benton Harbor Area School District," a report prepared in the case of *Berry, et al. v. School District of the City of Benton Harbor, et al.*, July 6, 2001. [63]

"The Desegregation of the Kansas City, Missouri School District, From Brown to 2000-01," a report prepared for the case of Jenkins, et al. v. State of Missouri, et al., February 7, 2001. [62]

"Supplemental Report on Tracking and Ability Grouping in the Woodland Hills School District," a report prepared for the case of Hoots, et al. v. Commonwealth of Pennsylvania, et al., May 9, 2000. [61]

"Bilingual Education in California Before and After Proposition 227," a report to the Public Policy Institute of California, March 17, 2000. [60]

"Compliance with the Green Factors in Woodland Hills, Pennsylvania," a report prepared for the case of Hoots, et al. v. Commonwealth of Pennsylvania, et al., March 1, 2000. [59]

"Rebuttal Report on Within-School Integration in the Rockford School District," a report prepared for the case of People Who Care, et al. v. Rockford Board of Education, School District No. 205 (Rockford, IL), February 20, 2000. [58]

"Is it Possible to Detrack?" a report to the San Jose Unified School System, January 10, 2000. [57]

"Within-School Integration in the Rockford School District, Fall 1999," a report prepared for the case of People Who Care, et al. v. Rockford Board of Education, School District No. 205 (Rockford, IL), December 10, 1999. [56]

"Improving the Voluntary Desegregation Plan in the Baton Rouge School System," a Report to the Court in the case of Davis, et al. v. East Baton Rouge Parish School Board, et al., October 28, 1999. [55]

"Testimony Of Christine Rossell at January 20, 1999 Administrative Law Hearing in the Matter of the Proposed Adoption Of Rules Relating To Desegregation (Minn. Rule, Parts 3535.0100 to 3535.0180) on Behalf of Dept. of Children, Families, and Learning, State Board of Education". [54]

"A Report on Educational Equity Issues in the St. Paul School District" prepared for the state of Minnesota in the case of Independent School District No. 625, St. Paul, MN, et al. v. State of Minnesota, et al., December 27, 1998. [53]

"Declaration of Christine H. Rossell," prepared for the U.S. District Court in the case of Valeria G. et al. v. Pete Wilson [Governor of State of California] et al., July 15, 1998. [52]

"The Compliance of the St. Louis Special School District with Desegregation and Vocational Educational Goals," a report to the Federal District Court in the case of Liddell et al. vs. the Board of Education of the City of St. Louis, Missouri and the State of Missouri, et al., Dec. 12, 1997. [51]

"A Rebuttal Report Analyzing the Cleveland City School District's Compliance with Remedial Components," a report to the Federal District Court in the case of Reed v. Rhodes, Oct. 6, 1997. [50]

"The Effectiveness of Magnet Schools and Programs in the Cleveland City School District," a report to the Federal District Court in the case of Reed v. Rhodes, Sept. 15, 1997. [49]

with R. Peterkin, R. Shoenberg, and W. Trent, "Report of the Court-Appointed Panel in Vaughns et al. v. Prince George's County Board of Education, et al. Submitted to Judge Peter J. Messitte, June 30, 1997. [48]

"Declaration of Christine H. Rossell," prepared for the U.S. District Court in the case of Quiroz et al. v. Orange Unified School District and the State of California, September 9, 1997. [47]

"Declaration of Christine H. Rossell," prepared for the Orange Unified School District for presentation to the California State Board of Education, June 8, 1997. [46]

"School Desegregation in the Kansas City, Missouri School District, 1954-1996" a report to the U.S. District Court in the case of Jenkins, et al v. State of Missouri, et al., January 2, 1997. [45]

"Declaration of Christine H. Rossell," prepared for the Magnolia School District for presentation to the California State Board of Education, 1996. [44]

"An Analysis of the San Jose Unified School District's Compliance with its Remedial Orders on Student Assignment and Transportation," a report to the U.S. District Court, Northern District of California in the case of Vasquez, et al. v. San Jose Unified School District, et al., June 14, 1996. [43]

"Supplemental Report on School Desegregation in the St. Louis Public Schools, 1995," a report to the U.S. District Court in the case of Liddell, et al. v. St. Louis Board of Education, et al., December 29, 1995. [42]

"School Desegregation in the Rockford Public Schools," a report to the U.S. District Court in the case of People Who Care, et al. v. Rockford Board of Education, School District #205, November 29, 1995. [41]

"School Desegregation in the St. Louis Public Schools, 1967-1995," a report to the U.S. District Court in the case of Liddell, et al. v. St. Louis Board of Education, et al., November 30, 1995. [40]

"Enrollment Projections for the Yonkers School District from Fall 1995 through Fall 2005," a report to the Superintendent of Schools, Reginald F. Marra, Yonkers Public Schools, April 4, 1995. [39]

*with Peggy Davis-Mullen, Boston City Council, "A Proposal for Transitioning the Boston Public Schools from the Current Controlled Choice Desegregation Plan to Community/Neighborhood Schools," June 2, 1994. [38]

"School and Classroom Desegregation in the New Castle County, Delaware Desegregation Area (Brandywine, Red Clay, Christina, and Colonial School Districts), a report to the federal district court in the case of Coalition to Save Our Children v. State Board of Education, November 30, 1994. [37]

"Results of the San Jose Unified School District's 1994 Phase II Parent Registration Survey," a report to the San Jose Unified School District, San Jose, California, November 15, 1994. [36]

"Enrollment Projections for the Yonkers School District from Fall 1994 through Fall 2004," a report to the Superintendent of Schools, Reginald F. Marra, Yonkers Public Schools, June 1, 1994. [35]

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"Enrollment Projections for the Yonkers School District from Fall 1994 through Fall 2004," a report to the Superintendent of Schools, Donald M. Batista, Yonkers Public Schools, April 19, 1993. [33]

"Supplemental Report Analyzing the San Jose Unified School District's Compliance With the Court Order in the Area of Student Assignment (School and Classroom Segregation), a report to the U.S. District Court, Northern District of California in the case of Vasquez, et al., v. San Jose Unified School District, et al., November 1, 1993. [32]

"An Analysis of the San Jose Unified School District's Compliance With the Court Order in the Areas of Student Assignment (School and Classroom Segregation), Transportation and Bilingual Education," a report to the U.S. District Court, Northern District of California in the case of Vasquez, et al., v. San Jose Unified School District, et al., June 29, 1993. [31]

with David J. Armor, William Clark, and the Dallas Independent School District, "Data and Analysis in Support of the Dallas Independent School District's Unitary Status Motion to the Court," a report to the U.S. District Court in the case of Tasby, et al. v. Woolery, et al., 1993.

with Lauri Steel, Roger Levine, and David Armor, "Magnet Schools and Issues of Desegregation, Quality and Choice, Phase I: the National Survey and In-Depth Study of Selected Districts," a report to the Department of Education, 1993. [30]

"An Analysis of the Segregation of Alternative Proposals for the Reorganization of the Grant Union High School District and Its Feeder Elementary Schools," a report to the Robla School District, Sacramento County, CA, Aug. 3, 1992. [29]

"Advertising on Channel One: Are Students a Captive Audience?" Report to the Superior Court of the State of California in and for the County of Santa Clara, July 29, 1992. [28]

"Enrollment Projections for the Yonkers School District from Fall 1992 through Fall 2001," a report to the Superintendent of Schools, Donald M. Batista, March 23, 1992. [27]

"Estimating the Effectiveness of a Voluntary Magnet School Desegregation Plan for the Stockton Unified School District. A report to the Superior Court of the State of California in the case of Hernandez v. Stockton Unified School District, September 19, 1991. [26]

"White Flight and Elementary Classroom Segregation" in Report on the Desegregation of the San Jose Unified District, a report to the U.S. District Court, April 30, 1991. [25]

"An Analysis Of White Flight, Enrollment Trends, and Classroom and District Segregation in the San Jose Unified School District," October 1, 1990. [24]

"Enrollment Projections for the Yonkers School District," A report to the Superintendent of Schools, Donald M. Batista, May 4, 1989. [23]

"Enrollment Projections for the Yonkers School District for the 1992-93 School Year," A report to the Superintendent of Schools, Donald M. Batista, January 25, 1990. [22]

"Declaration of Christine H. Rossell," prepared for the U.S. District Court in the case of Zambrano et al. v. Oakland Unified School District, et al., May 30, 1989. [21]

"An Analysis of Enrollment Trends in the Yonkers School District," A report to the Superintendent of Schools, Donald M. Batista, Yonkers Public Schools, December 29, 1988. [20]

"The Effectiveness of Educational Alternatives for Limited English Proficient Children in the Berkeley Unified School District," a report to the U.S. District Court in the case of Teresa P., et al. v. Berkeley Unified School District, July 29, 1988. [19]

*with Ruth Clarke, "The Carrot or the Stick in School Desegregation Policy?" a report to the National Institute of Education, Washington, D.C., Grant NIE-G-83-0019, March 1987. [18]

"Estimating the Effectiveness of a Magnet School Desegregation Plan for the Savannah-Chatham County School District," a report to the U.S. District Court in the case of Stell and U.S. v. Board of Public Education for the City of Savannah and the County of Chatham, Sept. 23, 1986. [17]

"Estimating the Effectiveness of a Magnet School Desegregation Plan for the Yonkers School District," a report to the U.S. District Court, in the case of U.S. and NAACP v. Yonkers Board of Education, et al., March 17, 1986. [16]

"Desegregating Estacado High School in the Lubbock Independent School District," a report to the U.S. Department of Justice, Jan. 18, 1986. [15]

"Estimating the Desegregation Effectiveness of the San Jose Unified School District's Plan and "The Cambridge Plan," a report to the U.S. District Court, filed December 11, 1985. [14]

"The Effectiveness of Alternative Desegregation Plans for Prince George's County, Maryland," a report prepared for the Laurel Amici, June 4, 1985. [13]

"The Effectiveness of Alternative Desegregation Plans for Hattiesburg, Mississippi," a report to the U.S. Department of Justice, March 21, 1985. [12]

"The Effectiveness of School Desegregation Plans as Determined by Community Response," a report to the U.S. Commission on Civil Rights, Feb. 1985. [11]

"What Is Attractive About Magnet Schools?" a report to the U.S. Department of Justice, March 15, 1984. [10]

"Options for Desegregating Howard and Madison Street Elementary Schools, Marion County, Florida," a report to the U.S. District Court, Middle District of Florida, Jacksonville, Florida, Nov. 5, 1983. [9]

"A School Desegregation Plan for East Baton Rouge Parish," a report prepared for the U.S. Department of Justice, Washington, D.C., February, 1983. [8]

*with J. Michael Ross, "The Long-Term Effect of Court-Ordered Desegregation on Student Enrollment in Central City Public School Systems: the Case of Boston, 1974-79," a report prepared for the Boston School Department, 1979. [7]

"Statistical Measures of Effective Net Reduction in Segregation," a memo to Shirley McCune, Associate Commissioner of Equal Educational Opportunity, Office of Education, February 1980. [6]

Memo to Patricia Harris, Secretary of Health, Education and Welfare, on the causes of white flight, its characteristics, and policy options, August 1979. [5]

"Assessing the Unintended Impacts of Public Policy: School Desegregation and Resegregation," a report to the National Institute of Education, Washington, D.C., 1978. [4]

"Monitoring Report of the Boston Public School System," prepared for the U.S. District Court by the Citywide Coordinating Council, August 1977. [3]

Reports to the Court in Carlin v. San Diego Unified School District, 1977, 1979; Seattle School District No. 1 v. State of Washington, U.S. v. Port Arthur Independent School District, 1979. [2]

*With Robert L. Crain, "Evaluating School Desegregation Plans Statistically," (Baltimore, Md.: The Johns Hopkins University Center for Metropolitan Planning and Research, 1973). [1]

PROFESSIONAL ACTIVITY

Advisory Board, READ, Washington, D.C., 1999-2000.

Advisory Board, Center for Equal Opportunity, Washington, D.C. 1996-1999

Advisory Board, U.S. Commission on Civil Rights study on school desegregation, 1986-1987 (Welch and Light, "New Evidence on School Desegregation").

Member, The National Review Panel on School Desegregation Research, an 11 member panel of experts funded by the Ford Foundation, 1977-1980; Participant, "Ethics and Public Policy: Social Inquiry" project sponsored by the Hastings Center Institute of Society, Ethics and the Life Sciences, 1979-80; Article reviewer for The American Political Science Review, American Journal of Political Science, Urban Affairs Quarterly, Social Science Quarterly, Sociology of Education, American Politics Quarterly; Review of Education Research; Member, American Political Science Association; American Educational Research Association.

PUBLIC SERVICE

Member of the Massachusetts Bilingual Advisory Council, 2000-03.

Member of the Citywide Coordinating Council of Boston, 1976-77, a 15 member body appointed by Judge W. Arthur Garrity to monitor school desegregation and minority sub-committee representation. I was on the working sub-committee which helped develop and train the nine parent-citizen community district councils in Boston.

CONSULTING

State of California in the case of Williams v. State of California, 2002-03.

Magnet Program Expert Panel, Prince George's County, Maryland in the case of Vaughns v. Prince George's County (Maryland), 2002. [50]

Fulton County (Georgia) School District in the case of Hightower et al. v. West et al., 2001-2003. [49]

Citizens for the Preservation of Constitutional Rights in the case of Comfort v. Lynn and Commonwealth of Massachusetts and Bollen v. Lynn, 2002. [48]

State of Ohio, in the case of Brinkman v. Gilligan, 2001-02 [47]

Kansas City, Missouri School District in the case of Jenkins v. Missouri, 2000-01. [includes Court Testimony] [46]

State of Michigan in the case of Berry, et al. v. Benton Harbor, et al., 2000-01. [45]

Natchez-Adams (Mississippi) School District in the case of U.S. and Nichols v. Natchez Special Municipal Separate School District, 2000-03. [44]

Rockford School District, in the case of People Who Care, et al. v. Rockford Board of Education, School District No. 205 (Rockford, IL), 1999-2000. [includes Court Testimony] [43]

State of Pennsylvania, Attorney General, in the case of Hoots et al. v. Commonwealth of Pennsylvania, et al., [Woodland Hills] 1998-2000. [includes Court Testimony] [42]

State of New York, Attorney General, in the case of CFE, et al. v. State of New York, 1998-99. [includes Court Testimony] [41]

Plaintiffs (Mexican-American Parents) Carbajal v. Albuquerque Public School District, 1998-1999. [bilingual] [40]

State of California, Attorney General, in the case of Valeria G. et al. v. Pete Wilson [in his official capacity as Governor of the State of California] et al, 1998-2000. [bilingual][39]

State of Minnesota on state desegregation rule, 1998-1999.

State of Connecticut, Office of the Attorney General, in the case of Sheff v. O'Neill, 1990-91, 1998, 2002 [includes Court Testimony] [38]

Orange Unified School District, in the case of Quiroz, et al. v. State Board of Education, et al., 1997. [includes Court Testimony] [bilingual] [37]

State of Ohio and the Cleveland School District, in the case of Reed v. Rhodes, 1997-1998. [includes Court Testimony] [36]

Court-Appointed Expert to Federal District Court Judge Peter Messite, in the case of Vaughns v. Prince George's County (Maryland), 1996-1997. [includes Court Testimony] [35]

State of Minnesota, in the case of NAACP v. Minnesota and Saint Paul School District v. Minnesota, 1996-1999. [34]

East Baton Rouge Parish School Board, in the case of Davis v. East Baton Rouge Parish School Board, 1996-2000. [33]

State of Missouri, in the case of Jenkins v. Missouri, (Kansas City) 1996-1997. [includes Court Testimony][32]

Rockford Education Association, in the case of People Who Care, et al. v. Rockford Board of Education, School District No. 205 (Rockford, IL), 1995. [includes Court Testimony] [31]

State of Delaware and the Boards of Education of the Brandywine, Christina, Colonial, and Red Clay School Districts in the case of Save Our Children v. State Board of Education of the State of Delaware, et al., 1995. [includes Court Testimony] [30]

State of Missouri, in the case of Liddell v. St. Louis Board of Education, et al., 1994-1995. [includes Court Testimony] [29]

Dallas Independent School District, in the case of Tasby, et al. v. Woolery, et al. September 1993. [includes Court Testimony] [28]

San Jose Unified School District, (Diaz) Vasquez v. San Jose Unified School District, July 1985-present. [includes Court Testimony in 1986] [27]

Robla School District, Sacramento County, CA, in the case of Robla School District v. California State Board of Education, 1992. [26]

Department of Education, on reauthorization of Elementary and Secondary Act, May 1992.

East Side High School District, San Jose, CA, in the case of Honig et al. v. East Side Union High School District, 1992. [25]

Duval County, Florida Public Schools, Fall 1991.

Knox County Public Schools, Knoxville, TN, in the case of Middlebrook v. School District of the County of Knox, Tennessee, Jan. 1991-92. [includes Court Testimony] [24]

Oakland Unified School District, in the case of Zambrano et al. v. Oakland Unified School, 1989. [bilingual][23]

Savannah-Chatham County School District, Stell v. Board of Public Education for the City of Savannah and the County of Chatham, Jan. 1986-93. *[includes Court Testimony]* [22]

Yonkers School District, U.S. and NAACP v. Yonkers Board of Education; City of Yonkers; and Yonkers Community Development Agency Jan. 1986-present. *[includes Court Testimony]* [21]

Stockton Unified School District, Hernandez v. Stockton Unified School District, 1989-91. [20]

De Kalb County School District, Pitts v. Freeman, Nov. 1986-88. *[includes Court Testimony]* [19]

Ocean View School District, Huntington Beach, CA, Dec. 1990-1991.

Topeka School District, Brown v. Board of Education, 1990. [18]

Natchez-Adams School District, U.S. and Nichols v. Natchez Special Municipal Separate School District, 1988-1989. *[includes Court Testimony]* [17]

Berkeley Unified School District, Teresa P. v. Berkeley Unified School District, 1987-1988. *[includes Court Testimony]* *[bilingual]* [16]

City of St. Louis, Liddell v. Board of Education of the City of St. Louis, Mo., et al., 1987-1989. *[includes Court Testimony]* [15]

U.S. Department of Justice, U.S. v. Texas Education Agency (Lubbock Independent School District) Aug. 1985-1986. [14]

The U.S. Commission on Civil Rights, "The Effectiveness of Various School Desegregation Plans in Reducing Student Racial and Ethnic Isolation Between and Within Public Schools" awarded to Unicon Corporation, Los Angeles, CA., June 1985-1987; System Development Corporation, Santa Monica, CA., Sept. 1984-May 1985; testimony at hearings, June 11, 1987.

The Laurel Amici, Vaughns v. Board of Education of Prince George's County, May-June 1985. [13]

Fort Wayne Community Schools, consultant to the school district on a magnet school plan, 1986.

The U.S. Department of Justice, U.S. and Pittman v. Mississippi and Hattiesburg Municipal School District, 1985-1986, and 1998. *[includes Court Testimony, 1986]* [12]

The U.S. Dept. of Justice, U.S. v. Charleston County School District and the State of South Carolina, 1982. [11]

Court-appointed expert, U.S. v. Marion County ,(Florida), 1983-1984. [10]

Mediator for Community Relations Service, U.S. Department of Justice, in Little Rock School District v. Pulaski County, Special School District, et al., 1983. [9]

The U.S. Dept. of Justice, Davis and U.S. v. East Baton Rouge Parish School District, 1982-83. [8]

Contributor to the legal brief presented by the Legal Defense Fund, Inc. to the Supreme Court on behalf of Crawford v. Board of Education of Los Angeles, and Seattle School District v. the State of Washington, Feb. 1982. [7]

Expert witness, Committee on the Judiciary, Subcommittee on Civil and Constitutional Rights, U.S. House of Representatives, Washington, D.C., September 23, 1981.

Expert witness for and consultant to the U.S. Dept. of Justice, U.S. v. Port Arthur Independent School District, 1980. [includes Court Testimony] [6]

Educational Policy Center, Duke University, conducting a meta-analysis of research studies on community reaction to school desegregation and issues of resegregation, interviewing in several cities, and co-authoring the final report on the effectiveness of desegregation strategies, 1979-80.

Educational Policy Center, Institute of Policy Sciences, Duke University, interviewing and providing information on court appointed advisory monitoring panels, 1979-80.

Member of the Advisory Board for the Associate Commissioner of Equal Educational Opportunity Programs (Shirley McCune), 1980.

Training Equal Educational Opportunity Program staff (HEW) on the causes and consequences of white flight and policy options, October 17-18, 1979.

Plaintiffs' expert witness, Crawford v. Board of Education of Los Angeles, 1979-80. [includes Court Testimony] [5]

Educational Policy Development Center - Desegregation, Institute of Policy Sciences, Duke University, 1979-80.

The U.S. Dept. of Justice, Ross v. Houston Independent School District, June 1979. [4]

Plaintiffs' expert witness, Seattle School District No. 1 v. the State of Washington, April - May 1979. [includes Court Testimony] [3]

The U.S. Dept. of Justice, Liddell v. Board of Education of St. Louis, Mo., March 1978. [2]

Plaintiffs' expert witness, Carlin v. San Diego Unified School District, January 1977, 1979. [includes Court Testimony] [1]

Abt Associates, writing a research proposal to study magnet schools as a desegregation tool, May-June 1977; analyzing data, Summer 1978.

Rand Corporation, designing questionnaire to collect data on school desegregation actions in a national sample, 1976-77.

Office of Education, panel reviewing public service grants and fellowship applications, Spring 1975; Spring 1976; and Spring 1977.

Rand Corporation, Winter 1973-74, longitudinal design to study school desegregation.

DESEGREGATION PLAN DESIGN ASSISTANCE: Prince George's County, MD, 2002; Baton Rouge, LA (1983 & 1996); Knox County, TN (1991); Ocean View, CA (1990); Stockton, CA (1989); Natchez, MS (1988); San Jose, CA (1986); Yonkers, NY (1986); Savannah-Chatham County, GA (1986); De Kalb, GA (1986); Marion County, FL (1983).

PARENT SURVEYS CONDUCTED: Hattiesburg, MI (1998); Rockford, IL (1995); Knox County, TN (1991); De Kalb, GA (1990); Stockton, CA (1990); Topeka, KS (1990); Natchez, MS (1988); Yonkers, NY (1986); Savannah-Chatham County, GA (1986).

Appendix 2:

Multiple Regression Statistical Analyses of the Relationship Between School Achievement (SAT 9) and the Percentage of Teachers who are Emergency Credentialed in California Schools, 2001-01

ALL STUDENTS' READING ACHIEVEMENT

Descriptive Statistics

| | Mean | Std. Deviation | N |
|--|--------|----------------|------|
| RD01NP_A all studs reading nce 01 | 46.12 | 18.606 | 7275 |
| PCEL01 % English Learners | 24.958 | 22.0105 | 7275 |
| PCBIL01 % bilingual ed 00-01 | 6.28 | 17.354 | 7275 |
| PCFREE01 % free or reduced lunch | 48.493 | 30.248 | 7275 |
| PCMIN01 % Minority 00-01 | 62.02 | 28.1757 | 7275 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | 73.42 | 29.701 | 7275 |
| TOT_EN01 Total enroll 2000-01 | 793.35 | 597.683 | 7275 |
| ELEM01 Elem. school 00-01 | 0.68 | 0.468 | 7275 |
| RD00NP_A all students reading nce 99-00 | 44.82 | 18.584 | 7275 |
| EMERPC01 00-01, percentage of teachers holding emergency credentials | 9.2 | 10.191 | 7275 |

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|---------|----------|-------------------|----------------------------|
| 1 | .982(a) | 0.964 | 0.964 | 3.552 |

a Predictors: (Constant), EMERPC01 00-01, percentage of teachers holding emergency credentials, PCBIL01 % bilingual ed 00-01, TOT_EN01 Total enroll 2000-01, PCSPAN01 % of EL who are Span. speakers 00-01, ELEM01 Elem. school 00-01, PCMIN01, PCEL01, PCFREE01 % free or reduced lunch , RD00NP_A

Coefficients(a)

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|--|-----------------------------|------------|---------------------------|---------|-------|
| | B | Std. Error | Beta | | |
| (Constant) | 4.035 | 0.352 | | 11.473 | 0.000 |
| PCEL01 % English Learners 00-01 | 0.007 | 0.003 | 0.01 | 2.145 | 0.032 |
| PCBIL01 % bilingual ed 00-01 | -0.022 | 0.003 | -0.02 | -8.352 | 0.000 |
| PCFREE01 % free or reduced lunch | -0.010 | 0.003 | -0.02 | -4.057 | 0.000 |
| PCMIN01 % Minority 00-01 | -0.010 | 0.003 | -0.02 | -3.583 | 0.000 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | -0.008 | 0.002 | -0.01 | -4.742 | 0.000 |
| TOT_EN01 Total enroll 2000-01 | 0.000 | 0.000 | 0.00 | -0.996 | 0.319 |
| ELEM01 Elem. school 00-01 | 1.898 | 0.120 | 0.05 | 15.757 | 0.000 |
| RD00NP_A Reading Achievement 2000 | 0.946 | 0.004 | 0.95 | 218.818 | 0.000 |
| EMERPC01 00-01, percentage of teachers holding emergency credentials | 0.011 | 0.005 | 0.01 | 2.422 | 0.015 |

a Dependent Variable: RD01NP_A all studs reading nce 01

Descriptive Statistics

| | Mean | Std. Deviation | N |
|--|--------|----------------|------|
| MA01NP_A all studs math nce 01 | 55.05 | 18.077 | 7275 |
| PCEL01 % English Learners | 24.947 | 22.0055 | 7275 |
| PCBIL01 % bilingual ed 00-01 | 6.28 | 17.354 | 7275 |
| PCFREE01 % free or reduced lunch | 48.498 | 30.244 | 7275 |
| PCMIN01 % Minority 00-01 | 62.005 | 28.1814 | 7275 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | 73.43 | 29.7 | 7275 |
| TOT_EN01 Total enroll 2000-01 | 793.34 | 597.701 | 7275 |
| ELEM01 Elem. school 00-01 | 0.68 | 0.468 | 7275 |
| MA00NP_A all students math nce 99-00 | 52.85 | 18.113 | 7275 |
| EMERPC01 00-01, percentage of teachers holding emergency credentials | 9.21 | 10.203 | 7275 |

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|---------|----------|-------------------|----------------------------|
| 1 | .969(a) | 0.938 | 0.938 | 4.496 |

a Predictors: (Constant), EMERPC01 00-01, percentage of teachers holding emergency credentials, PCBIL01 % bilingual ed 00-01, TOT_EN01 Total enroll 2000-01, PCSPAN01 % of EL who are Span. speakers 00-01, ELEM01 Elem. school 00-01, PCMIN01, MA00NP_A, PCEL01, PCFREE01 % free or reduced lunch

Coefficients(a)

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|--|-----------------------------|------------|---------------------------|---------|-------|
| | B | Std. Error | Beta | | |
| (Constant) | 7.875 | 0.430 | | 18.330 | 0.000 |
| PCEL01 % English Learners 00-01 | 0.014 | 0.004 | 0.02 | 3.537 | 0.000 |
| PCBIL01 % bilingual ed 00-01 | -0.012 | 0.003 | -0.01 | -3.520 | 0.000 |
| PCFREE01 % free or reduced lunch | -0.017 | 0.003 | -0.03 | -5.318 | 0.000 |
| PCMIN01 % Minority 00-01 | -0.019 | 0.003 | -0.03 | -5.811 | 0.000 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | -0.014 | 0.002 | -0.02 | -6.640 | 0.000 |
| TOT_EN01 Total enroll 2000-01 | 0.000 | 0.000 | 0.01 | 2.918 | 0.004 |
| ELEM01 Elem. school 00-01 | 2.950 | 0.151 | 0.08 | 19.496 | 0.000 |
| MA00NP_A all students math nce 99-00 | 0.905 | 0.005 | 0.91 | 181.870 | 0.000 |
| EMERPC01 00-01, percentage of teachers holding emergency credentials | -0.008 | 0.006 | -0.01 | -1.387 | 0.165 |

a Dependent Variable: MA01NP_A all studs math nce 01

ALL STUDENTS' LANGUAGE ACHIEVEMENT

Descriptive Statistics

| | Mean | Std. Deviation | N |
|--|--------|----------------|------|
| LA01NP_A all studs language nce 01 | 51.19 | 17.935 | 7271 |
| PCEL01 % English Learners | 24.952 | 22.0072 | 7271 |
| PCBIL01 % bilingual ed 00-01 | 6.28 | 17.358 | 7271 |
| PCFREE01 % free or reduced lunch | 48.511 | 30.232 | 7271 |
| PCMIN01 % Minority 00-01 | 61.998 | 28.1758 | 7271 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | 73.44 | 29.691 | 7271 |
| TOT_EN01 Total enroll 2000-01 | 793.76 | 597.597 | 7271 |
| ELEM01 Elem. school 00-01 | 0.68 | 0.468 | 7271 |
| LA00NP_A all studs language nce 01 | 49.55 | 18.044 | 7271 |
| EMERPC01 00-01, percentage of teachers holding emergency credentials | 9.21 | 10.198 | 7271 |

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|---------|----------|-------------------|----------------------------|
| 1 | .974(a) | 0.948 | 0.948 | 4.078 |

a Predictors: (Constant), EMERPC01 00-01, percentage of teachers holding emergency credentials, PCBIL01 % bilingual ed 00-01, TOT_EN01 Total enroll 2000-01, PCSPAN01 % of EL who are Span. speakers 00-01, ELEM01 Elem. school 00-01, PCMIN01, LA00NP_A, PCEL01, PCFREE01 % free or reduced lunch

Coefficients(a)

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|--|-----------------------------|------------|---------------------------|---------|-------|
| | B | Std. Error | Beta | | |
| (Constant) | 4.815 | 0.399 | | 12.075 | 0.000 |
| PCEL01 % English Learners 00-01 | 0.017 | 0.004 | 0.02 | 4.554 | 0.000 |
| PCBIL01 % bilingual ed 00-01 | -0.022 | 0.003 | -0.02 | -7.201 | 0.000 |
| PCFREE01 % free or reduced lunch | -0.013 | 0.003 | -0.02 | -4.301 | 0.000 |
| PCMIN01 % Minority 00-01 | -0.010 | 0.003 | -0.02 | -3.256 | 0.001 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | -0.009 | 0.002 | -0.02 | -4.788 | 0.000 |
| TOT_EN01 Total enroll 2000-01 | 0.000 | 0.000 | 0.01 | 3.549 | 0.000 |
| ELEM01 Elem. school 00-01 | 1.697 | 0.134 | 0.04 | 12.691 | 0.000 |
| LA00NP_A all studs language nce 01 | 0.938 | 0.005 | 0.94 | 199.250 | 0.000 |
| EMERPC01 00-01, percentage of teachers holding emergency credentials | 0.012 | 0.005 | 0.01 | 2.286 | 0.022 |

a Dependent Variable: LA01NP_A

ALL STUDENTS' SCIENCE ACHIEVEMENT

Descriptive Statistics

| | Mean | Std. Deviation | N |
|--|---------|----------------|------|
| SC01NP_A all studs science nce 01 | 40.7 | 15.755 | 1240 |
| PCEL01 % English Learners | 16.357 | 17.3127 | 1240 |
| PCBIL01 % bilingual ed 00-01 | 1.72 | 8.061 | 1240 |
| PCFREE01 % free or reduced lunch | 32.725 | 25.4741 | 1240 |
| PCMIN01 % Minority 00-01 | 59.186 | 26.9097 | 1240 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | 75.01 | 28.63 | 1240 |
| TOT_EN01 Total enroll 2000-01 | 1332.46 | 1088.051 | 1240 |
| ELEM01 Elem. school 00-01 | 0 | 0.028 | 1240 |
| SC00NP_A all studs science nce 99-00 | 40.78 | 15.404 | 1240 |
| EMERPC01 00-01, percentage of teachers holding emergency credentials | 11.1 | 11.122 | 1240 |

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|---------|----------|-------------------|----------------------------|
| 1 | .955(a) | 0.913 | 0.912 | 4.672 |

a Predictors: (Constant), EMERPC01 00-01, percentage of teachers holding emergency credentials, PCBIL01 % bilingual ed 00-01, ELEM01 Elem. school 00-01, TOT_EN01 Total enroll 2000-01, PCEL01, PCSPAN01 % of EL who are Span. speakers 00-01, PCFREE01 % free or reduced lunch , PCMIN01, SC00NP_A

Coefficients(a)

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|--|-----------------------------|------------|---------------------------|--------|-------|
| | B | Std. Error | Beta | | |
| (Constant) | 4.998 | 1.020 | | 4.898 | 0.000 |
| PCEL01 % English Learners | -0.006 | 0.010 | -0.01 | -0.684 | 0.494 |
| PCBIL01 % bilingual ed 00-01 | -0.002 | 0.017 | 0.00 | -0.147 | 0.883 |
| PCFREE01 % free or reduced lunch | -0.015 | 0.007 | -0.02 | -2.322 | 0.020 |
| PCMIN01 % Minority 00-01 | -0.020 | 0.008 | -0.03 | -2.448 | 0.014 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | -0.009 | 0.005 | -0.02 | -1.651 | 0.099 |
| TOT_EN01 Total enroll 2000-01 | 0.001 | 0.000 | 0.04 | 3.604 | 0.000 |
| ELEM01 Elem. school 00-01 | 0.423 | 4.682 | 0.00 | 0.090 | 0.928 |
| SC00NP_A all studs science nce 99-00 | 0.918 | 0.014 | 0.90 | 64.139 | 0.000 |
| EMERPC01 00-01, percentage of teachers holding emergency credentials | -0.003 | 0.013 | 0.00 | -0.201 | 0.841 |

a Dependent Variable: SC01NP_A

ALL STUDENTS' SOCIAL STUDIES ACHIEVEMENT

Descriptive Statistics

| | Mean | Std. Deviation | N |
|--|--------|----------------|------|
| SS01NP_A all studs social science nce 01 | 42.28 | 15.537 | 1239 |
| PCEL01 % English Learners | 16.341 | 17.2802 | 1239 |
| PCBIL01 % bilingual ed 00-01 | 1.72 | 8.064 | 1239 |
| PCFREE01 % free or reduced lunch | 32.785 | 25.4951 | 1239 |
| PCMIN01 % Minority 00-01 | 59.268 | 26.854 | 1239 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | 75.01 | 28.555 | 1239 |
| TOT_EN01 Total enroll 2000-01 | 1333.5 | 1087.866 | 1239 |
| ELEM01 Elem. school 00-01 | 0 | 0.028 | 1239 |
| SS00NP_A all studs social science nce 99-00 | 41.88 | 15.085 | 1239 |
| EMERPC01 00-01, percentage of teachers holding emergency credentials | 11.15 | 11.172 | 1239 |

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|---------|----------|-------------------|----------------------------|
| 1 | .956(a) | 0.914 | 0.914 | 4.561 |

a Predictors: (Constant), EMERPC01 00-01, percentage of teachers holding emergency credentials, PCBIL01 % bilingual ed 00-01, ELEM01 Elem. school 00-01, TOT_EN01 Total enroll 2000-01, PCEL01, PCSPAN01 % of EL who are Span. speakers 00-01, PCFREE01 % free or reduced lunch , PCMIN01, SS00NP_A

Coefficients(a)

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|--|-----------------------------|------------|---------------------------|--------|-------|
| | B | Std. Error | Beta | | |
| (Constant) | 8.582 | 0.970 | | 8.846 | 0.000 |
| PCEL01 % English Learners | 0.000 | 0.009 | 0.00 | -0.033 | 0.974 |
| PCBIL01 % bilingual ed 00-01 | 0.014 | 0.016 | 0.01 | 0.833 | 0.405 |
| PCFREE01 % free or reduced lunch | -0.009 | 0.006 | -0.02 | -1.469 | 0.142 |
| PCMIN01 % Minority 00-01 | -0.048 | 0.008 | -0.08 | -6.376 | 0.000 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | -0.019 | 0.005 | -0.04 | -3.777 | 0.000 |
| TOT_EN01 Total enroll 2000-01 | 0.001 | 0.000 | 0.05 | 4.878 | 0.000 |
| ELEM01 Elem. school 00-01 | -0.691 | 4.571 | 0.00 | -0.151 | 0.880 |
| SS00NP_A all studs social science nce 99-00 | 0.890 | 0.014 | 0.86 | 65.116 | 0.000 |
| EMERPC01 00-01, percentage of teachers holding emergency credentials | 0.009 | 0.012 | 0.01 | 0.704 | 0.481 |

a Dependent Variable: SS01NP_A

POOR STUDENTS' READING ACHIEVEMENT

Descriptive Statistics

| | Mean | Std. Deviation | N |
|--|--------|----------------|------|
| RD01NP_P poor studs reading nce 01 | 34.7 | 12.038 | 6221 |
| PCEL01 % English Learners | 27.79 | 21.8367 | 6221 |
| PCBIL01 % bilingual ed 00-01 | 7.28 | 18.456 | 6221 |
| PCFREE01 % free or reduced lunch | 54.703 | 27.4978 | 6221 |
| PCMIN01 % Minority 00-01 | 66.467 | 26.5657 | 6221 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | 77.2 | 26.634 | 6221 |
| TOT_EN01 Total enroll 2000-01 | 845.99 | 610.386 | 6221 |
| ELEM01 Elem. school 00-01 | 0.67 | 0.469 | 6221 |
| RD00NP_P poor studs reading nce 99-00 | 33.26 | 11.891 | 6221 |
| EMERPC01 00-01, percentage of teachers holding emergency credentials | 9.85 | 10.211 | 6221 |

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|---------|----------|-------------------|----------------------------|
| 1 | .922(a) | 0.849 | 0.849 | 4.678 |

a Predictors: (Constant), EMERPC01 00-01, percentage of teachers holding emergency credentials, PCBIL01 % bilingual ed 00-01, TOT_EN01 Total enroll 2000-01, PCSPAN01 % of EL who are Span. speakers 00-01, PCMIN01, ELEM01 Elem. school 00-01, RD00NP_P, PCFREE01 % free or reduced lunch , PCEL01

Coefficients(a)

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|--|-----------------------------|------------|---------------------------|---------|-------|
| | B | Std. Error | Beta | | |
| (Constant) | 8.054 | 0.463 | | 17.405 | 0.000 |
| PCEL01 % English Learners | -0.009 | 0.005 | -0.02 | -1.837 | 0.066 |
| PCBIL01 % bilingual ed 00-01 | -0.032 | 0.003 | -0.05 | -9.233 | 0.000 |
| PCFREE01 % free or reduced lunch | -0.009 | 0.004 | -0.02 | -2.615 | 0.009 |
| PCMIN01 % Minority 00-01 | -0.009 | 0.004 | -0.02 | -2.281 | 0.023 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | -0.016 | 0.003 | -0.04 | -6.360 | 0.000 |
| TOT_EN01 Total enroll 2000-01 | 0.000 | 0.000 | -0.02 | -4.132 | 0.000 |
| ELEM01 Elem. school 00-01 | 2.831 | 0.170 | 0.11 | 16.681 | 0.000 |
| RD00NP_P poor studs reading nce 99-00 | 0.839 | 0.007 | 0.83 | 114.436 | 0.000 |
| EMERPC01 00-01, percentage of teachers holding | 0.005 | 0.007 | 0.00 | 0.777 | 0.437 |

a Dependent Variable: RD01NP_P poor studs reading nce 01

POOR STUDENTS' MATH ACHIEVEMENT

Descriptive Statistics

| | Mean | Std. Deviation | N |
|--|--------|----------------|------|
| MA01NP_P poor studs math nce 01 | 45.24 | 12.663 | 6230 |
| PCEL01 % English Learners | 27.771 | 21.8289 | 6230 |
| PCBIL01 % bilingual ed 00-01 | 7.28 | 18.472 | 6230 |
| PCFREE01 % free or reduced lunch | 54.635 | 27.5052 | 6230 |
| PCMIN01 % Minority 00-01 | 66.429 | 26.57 | 6230 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | 77.18 | 26.637 | 6230 |
| TOT_EN01 Total enroll 2000-01 | 845.51 | 610.094 | 6230 |
| ELEM01 Elem. school 00-01 | 0.67 | 0.469 | 6230 |
| MA00NP_P poor studs math nce 99-00 | 42.73 | 12.387 | 6230 |
| EMERPC01 00-01, percentage of teachers holding emergency credentials | 9.84 | 10.217 | 6230 |

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|---------|----------|-------------------|----------------------------|
| 1 | .890(a) | 0.793 | 0.792 | 5.77 |

a Predictors: (Constant), EMERPC01 00-01, percentage of teachers holding emergency credentials, PCBIL01 % bilingual ed 00-01, TOT_EN01 Total enroll 2000-01, PCSPAN01 % of EL who are Span. speakers 00-01, PCMIN01, ELEM01 Elem. school 00-01, MA00NP_P, PCFREE01 % free or reduced lunch , PCEL01

Coefficients(a)

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|--|-----------------------------|------------|---------------------------|---------|-------|
| | B | Std. Error | Beta | | |
| (Constant) | 12.417 | 0.557 | | 22.302 | 0.000 |
| PCEL01 % English Learners | 0.010 | 0.006 | 0.02 | 1.825 | 0.068 |
| PCBIL01 % bilingual ed 00-01 | -0.021 | 0.004 | -0.03 | -4.779 | 0.000 |
| PCFREE01 % free or reduced lunch | -0.022 | 0.004 | -0.05 | -4.982 | 0.000 |
| PCMIN01 % Minority 00-01 | -0.013 | 0.005 | -0.03 | -2.793 | 0.005 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | -0.028 | 0.003 | -0.06 | -8.895 | 0.000 |
| TOT_EN01 Total enroll 2000-01 | 0.000 | 0.000 | 0.00 | 0.158 | 0.875 |
| ELEM01 Elem. school 00-01 | 3.882 | 0.205 | 0.14 | 18.912 | 0.000 |
| MA00NP_P poor studs math nce 99-00 | 0.806 | 0.008 | 0.79 | 105.141 | 0.000 |
| EMERPC01 00-01, percentage of teachers holding | -0.014 | 0.008 | -0.01 | -1.768 | 0.077 |

a Dependent Variable: MA01NP_P poor studs math nce 01

PC01 IV EL LANGUAGE ACHIEVEMENT

Descriptive Statistics

| | Mean | Std. Deviation | N |
|--|--------|-------------------|------|
| LA01NP_P poor studs language nce 01 | 40.59 | 11.961 | 6224 |
| PCEL01 % English Learners | 27.766 | 21.8367 | 6224 |
| PCBIL01 % bilingual ed 00-01 | 7.29 | 18.479 | 6224 |
| PCFREE01 % free or reduced lunch | 54.659 | 27.4986 | 6224 |
| PCMIN01 % Minority 00-01 | 66.417 | 26.5774 | 6224 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | 77.18 | 26.631 | 6224 |
| TOT_EN01 Total enroll 2000-01 | 846.04 | 610.069 | 6224 |
| ELEM01 Elem. school 00-01 | 0.67 | 0.469 | 6224 |
| LA00NP_P poor studs language nce 99-00 | 38.72 | 11.905 | 6224 |
| EMERPC01 00-01, percentage of teachers holding emergency credentials | 9.83 | 10.209 | 6224 |

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|---------|----------|-------------------|----------------------------|
| 1 | .896(a) | 0.802 | 0.802 | 5.323 |

a Predictors: (Constant), EMERPC01 00-01, percentage of teachers holding emergency credentials, PCBIL01 % bilingual ed 00-01, TOT_EN01 Total enroll 2000-01, PCSPAN01 % of EL who are Span. speakers 00-01, PCMIN01, ELEM01 Elem. school 00-01, LA00NP_P, PCFREE01 % free or reduced lunch, PCEL01

Coefficients(a)

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|--|-----------------------------|------------|---------------------------|---------|-------|
| | B | Std. Error | Beta | | |
| (Constant) | 9.316 | 0.526 | | 17.714 | 0.000 |
| PCEL01 % English Learners | 0.006 | 0.005 | 0.01 | 1.199 | 0.230 |
| PCBIL01 % bilingual ed 00-01 | -0.033 | 0.004 | -0.05 | -8.192 | 0.000 |
| PCFREE01 % free or reduced lunch | -0.020 | 0.004 | -0.05 | -4.759 | 0.000 |
| PCMIN01 % Minority 00-01 | -0.001 | 0.004 | 0.00 | -0.213 | 0.832 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | -0.019 | 0.003 | -0.04 | -6.417 | 0.000 |
| TOT_EN01 Total enroll 2000-01 | 0.000 | 0.000 | -0.01 | -0.836 | 0.403 |
| ELEM01 Elem. school 00-01 | 2.501 | 0.187 | 0.10 | 13.382 | 0.000 |
| LA00NP_P poor studs language nce 99-00 | 0.832 | 0.008 | 0.83 | 109.025 | 0.000 |
| EMERPC01 00-01, percentage of teachers holding | 0.010 | 0.008 | 0.01 | 1.392 | 0.164 |

a Dependent Variable: LA01NP_P

POOR STUDENTS' SCIENCE ACHIEVEMENT

Descriptive Statistics

| | Mean | Std. Deviation | N |
|--|---------|----------------|-----|
| SC01NP_P poor studs science nce 01 | 32.64 | 9.456 | 975 |
| PCEL01 % English Learners | 17.125 | 14.7102 | 975 |
| PCBIL01 % bilingual ed 00-01 | 2.17 | 9.028 | 975 |
| PCFREE01 % free or reduced lunch | 37.151 | 24.5495 | 975 |
| PCMIN01 % Minority 00-01 | 61.505 | 26.4261 | 975 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | 76.18 | 26.683 | 975 |
| TOT_EN01 Total enroll 2000-01 | 1572.53 | 1056.637 | 975 |
| ELEM01 Elem. school 00-01 | 0 | 0 | 975 |
| SC00NP_P poor studs science nce 99-00 | 33 | 9.35 | 975 |
| EMERPC01 00-01, percentage of teachers holding emergency credentials | 11.59 | 10.176 | 975 |

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|---------|----------|-------------------|----------------------------|
| 1 | .873(a) | 0.762 | 0.76 | 4.637 |

a Predictors: (Constant), EMERPC01 00-01, percentage of teachers holding emergency credentials, PCBIL01 % bilingual ed 00-01, TOT_EN01 Total enroll 2000-01, PCEL01, PCSPAN01 % of EL who are Span. speakers 00-01, SC00NP_P, PCFREE01 % free or reduced lunch , PCMIN01

Coefficients(a)

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|--|-----------------------------|------------|---------------------------|--------|-------|
| | B | Std. Error | Beta | | |
| (Constant) | 9.378 | 1.161 | | 8.079 | 0.000 |
| PCEL01 % English Learners | -0.019 | 0.014 | -0.03 | -1.328 | 0.184 |
| PCBIL01 % bilingual ed 00-01 | 0.017 | 0.017 | 0.02 | 1.013 | 0.311 |
| PCFREE01 % free or reduced lunch | -0.004 | 0.008 | -0.01 | -0.551 | 0.582 |
| PCMIN01 % Minority 00-01 | -0.021 | 0.009 | -0.06 | -2.403 | 0.016 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | -0.023 | 0.006 | -0.06 | -3.512 | 0.000 |
| TOT_EN01 Total enroll 2000-01 | 0.001 | 0.000 | 0.08 | 4.547 | 0.000 |
| SC00NP_P poor studs science nce 99-00 | 0.779 | 0.021 | 0.77 | 37.003 | 0.000 |
| EMERPC01 00-01, percentage of teachers holding | -0.006 | 0.016 | -0.01 | -0.414 | 0.679 |

a Dependent Variable: SC01NP_P

POOR STUDENTS' SOCIAL STUDIES ACHIEVEMENT

Descriptive Statistics

| | Mean | Std. Deviation | N |
|--|---------|----------------|-----|
| SS01NP_P poor studs social science nce 01 | 34.22 | 9.193 | 973 |
| PCEL01 % English Learners | 17.137 | 14.7197 | 973 |
| PCBIL01 % bilingual ed 00-01 | 2.17 | 9.036 | 973 |
| PCFREE01 % free or reduced lunch | 37.236 | 24.5249 | 973 |
| PCMIN01 % Minority 00-01 | 61.528 | 26.4614 | 973 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | 76.2 | 26.682 | 973 |
| TOT_EN01 Total enroll 2000-01 | 1575.91 | 1055.807 | 973 |
| ELEM01 Elem. school 00-01 | 0 | 0 | 973 |
| SS00NP_P poor studs social science nce 99-00 | 34.03 | 9.161 | 973 |
| EMERPC01 00-01, percentage of teachers holding emergency credentials | 11.67 | 10.237 | 973 |

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|---------|----------|-------------------|----------------------------|
| 1 | .852(a) | 0.726 | 0.724 | 4.831 |

a Predictors: (Constant), EMERPC01 00-01, percentage of teachers holding emergency credentials, PCBIL01 % bilingual ed 00-01, TOT_EN01 Total enroll 2000-01, PCEL01, PCSPAN01 % of EL who are Span. speakers 00-01, SS00NP_P, PCFREE01 % free or reduced lunch , PCMIN01

Coefficients(a)

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|--|-----------------------------|------------|---------------------------|--------|-------|
| | B | Std. Error | Beta | | |
| (Constant) | 11.553 | 1.185 | | 9.752 | 0.000 |
| PCEL01 % English Learners | -0.023 | 0.015 | -0.04 | -1.553 | 0.121 |
| PCBIL01 % bilingual ed 00-01 | 0.010 | 0.017 | 0.01 | 0.597 | 0.551 |
| PCFREE01 % free or reduced lunch | 0.002 | 0.008 | 0.01 | 0.277 | 0.782 |
| PCMIN01 % Minority 00-01 | -0.031 | 0.009 | -0.09 | -3.483 | 0.001 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | -0.019 | 0.007 | -0.05 | -2.832 | 0.005 |
| TOT_EN01 Total enroll 2000-01 | 0.001 | 0.000 | 0.10 | 5.085 | 0.000 |
| SS00NP_P poor studs social science nce 99-00 | 0.738 | 0.022 | 0.74 | 33.771 | 0.000 |
| EMERPC01 00-01, percentage of teachers holding | -0.010 | 0.016 | -0.01 | -0.640 | 0.523 |

a Dependent Variable: SS01NP_P

ENGLISH LEARNERS' READING ACHIEVEMENT

Descriptive Statistics

| | Mean | Std. Deviation | N |
|--|--------|----------------|------|
| READ01NP EL studs reading nce 01 | 23.36 | 11.021 | 4761 |
| PCEL01 % English Learners | 33.926 | 21.3602 | 4761 |
| PCBIL01 % bilingual ed 00-01 | 9 | 19.939 | 4761 |
| PCFREE01 % free or reduced lunch | 58.957 | 27.4932 | 4761 |
| PCMIN01 % Minority 00-01 | 74.202 | 22.0469 | 4761 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | 77.97 | 26.799 | 4761 |
| TOT_EN01 Total enroll 2000-01 | 947.44 | 645.528 | 4761 |
| ELEM01 Elem. school 00-01 | 0.65 | 0.476 | 4761 |
| READ00NP Reading NCE EL 99-00 | 21.99 | 10.347 | 4761 |
| EMERPC01 00-01, percentage of teachers holding emergency credentials | 11.04 | 10.308 | 4761 |

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|---------|----------|-------------------|----------------------------|
| 1 | .882(a) | 0.778 | 0.778 | 5.196 |

a Predictors: (Constant), EMERPC01 00-01, percentage of teachers holding emergency credentials, PCBIL01 % bilingual ed 00-01, TOT_EN01 Total enroll 2000-01, PCSPAN01 % of EL who are Span. speakers 00-01, PCMIN01, READ00NP Reading NCE EL 99-00, ELEM01 Elem. school 00-01, PCEL01, PCFREE01 % free or reduced lunch

Coefficients(a)

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|--|-----------------------------|------------|---------------------------|---------|-------|
| | B | Std. Error | Beta | | |
| (Constant) | 10.441 | 0.524 | | 19.929 | 0.000 |
| PCEL01 % English Learners | 0.023 | 0.005 | 0.05 | 4.242 | 0.000 |
| PCBIL01 % bilingual ed 00-01 | -0.040 | 0.004 | -0.07 | -9.850 | 0.000 |
| PCFREE01 % free or reduced lunch | -0.047 | 0.005 | -0.12 | -10.019 | 0.000 |
| PCMIN01 % Minority 00-01 | 0.000 | 0.005 | 0.00 | -0.086 | 0.932 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | -0.037 | 0.003 | -0.09 | -10.662 | 0.000 |
| TOT_EN01 Total enroll 2000-01 | -0.001 | 0.000 | -0.08 | -9.092 | 0.000 |
| ELEM01 Elem. school 00-01 | 3.835 | 0.235 | 0.17 | 16.322 | 0.000 |
| READ00NP Reading NCE EL 99-00 | 0.754 | 0.010 | 0.71 | 72.801 | 0.000 |
| EMERPC01 00-01, percentage of teachers holding | 0.034 | 0.008 | 0.03 | 4.117 | 0.000 |

a Dependent Variable: READ01NP EL studs reading nce 01

ENGLISH LEARNERS MATH ACHIEVEMENT

Descriptive Statistics

| | Mean | Std. Deviation | N |
|--|--------|----------------|------|
| MATH01NP EL studs math nce 01 | 38.45 | 14.338 | 4805 |
| PCEL01 % English Learners | 33.801 | 21.3687 | 4805 |
| PCBIL01 % bilingual ed 00-01 | 8.97 | 19.913 | 4805 |
| PCFREE01 % free or reduced lunch | 58.835 | 27.5378 | 4805 |
| PCMIN01 % Minority 00-01 | 74.024 | 22.1157 | 4805 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | 77.93 | 26.825 | 4805 |
| TOT_EN01 Total enroll 2000-01 | 943.82 | 644.302 | 4805 |
| ELEM01 Elem. school 00-01 | 0.65 | 0.476 | 4805 |
| MATH00NP EL studs math nce 99-00 | 36.32 | 13.919 | 4805 |
| EMERPC01 00-01, percentage of teachers holding emergency credentials | 10.98 | 10.287 | 4805 |

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|---------|----------|-------------------|----------------------------|
| 1 | .880(a) | 0.775 | 0.774 | 6.815 |

a Predictors: (Constant), EMERPC01 00-01, percentage of teachers holding emergency credentials, PCBIL01 % bilingual ed 00-01, TOT_EN01 Total enroll 2000-01, MATH00NP, PCMIN01, ELEM01 Elem. school 00-01, PCSPAN01 % of EL who are Span. speakers 00-01, PCEL01, PCFREE01 % free or reduced lunch

Coefficients(a)

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|--|-----------------------------|------------|---------------------------|---------|-------|
| | B | Std. Error | Beta | | |
| (Constant) | 19.754 | 0.761 | | 25.959 | 0.000 |
| PCEL01 % English Learners | 0.032 | 0.007 | 0.05 | 4.534 | 0.000 |
| PCBIL01 % bilingual ed 00-01 | -0.021 | 0.005 | -0.03 | -3.887 | 0.000 |
| PCFREE01 % free or reduced lunch | -0.070 | 0.006 | -0.13 | -11.260 | 0.000 |
| PCMIN01 % Minority 00-01 | 0.004 | 0.007 | 0.01 | 0.559 | 0.576 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | -0.084 | 0.005 | -0.16 | -16.986 | 0.000 |
| TOT_EN01 Total enroll 2000-01 | -0.001 | 0.000 | -0.04 | -4.757 | 0.000 |
| ELEM01 Elem. school 00-01 | 5.062 | 0.294 | 0.17 | 17.224 | 0.000 |
| MATH00NP EL studs math nce 99-00 | 0.702 | 0.010 | 0.68 | 69.489 | 0.000 |
| EMERPC01 00-01, percentage of teachers holding | 0.014 | 0.011 | 0.01 | 1.271 | 0.204 |

a Dependent Variable: MATH01NP EL studs math nce 01

EL LEARNERS: LANGUAGE ACQUISITION

Descriptive Statistics

| | Mean | Std. Deviation | N |
|--|--------|----------------|------|
| LANG01NP EL studs language nce 01 | 30.61 | 12.168 | 4780 |
| PCEL01 % English Learners | 33.869 | 21.3621 | 4780 |
| PCBIL01 % bilingual ed 00-01 | 9 | 19.938 | 4780 |
| PCFREE01 % free or reduced lunch | 58.896 | 27.5229 | 4780 |
| PCMIN01 % Minority 00-01 | 74.052 | 22.136 | 4780 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | 77.92 | 26.851 | 4780 |
| TOT_EN01 Total enroll 2000-01 | 945.87 | 644.669 | 4780 |
| ELEM01 Elem. school 00-01 | 0.65 | 0.476 | 4780 |
| LANG00NP EL studs language nce 99-00 | 28.91 | 11.656 | 4780 |
| EMERPC01 00-01, percentage of teachers holding emergency credentials | 10.98 | 10.286 | 4780 |

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|---------|----------|-------------------|----------------------------|
| 1 | .863(a) | 0.745 | 0.745 | 6.149 |

a Predictors: (Constant), EMERPC01 00-01, percentage of teachers holding emergency credentials, PCBIL01 % bilingual ed 00-01, TOT_EN01 Total enroll 2000-01, PCSPAN01 % of EL who are Span. speakers 00-01, PCMIN01, ELEM01 Elem. school 00-01, LANG00NP, PCEL01, PCFREE01 % free or reduced lunch

Coefficients(a)

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|--|-----------------------------|------------|---------------------------|---------|-------|
| | B | Std. Error | Beta | | |
| (Constant) | 15.046 | 0.667 | | 22.563 | 0.000 |
| PCEL01 % English Learners | 0.035 | 0.006 | 0.06 | 5.434 | 0.000 |
| PCBIL01 % bilingual ed 00-01 | -0.043 | 0.005 | -0.07 | -8.990 | 0.000 |
| PCFREE01 % free or reduced lunch | -0.060 | 0.006 | -0.14 | -10.757 | 0.000 |
| PCMIN01 % Minority 00-01 | 0.002 | 0.006 | 0.00 | 0.275 | 0.783 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | -0.055 | 0.004 | -0.12 | -12.974 | 0.000 |
| TOT_EN01 Total enroll 2000-01 | -0.001 | 0.000 | -0.07 | -7.535 | 0.000 |
| ELEM01 Elem. school 00-01 | 4.142 | 0.270 | 0.16 | 15.353 | 0.000 |
| LANG00NP EL studs language nce 99-00 | 0.709 | 0.011 | 0.68 | 65.887 | 0.000 |
| EMERPC01 00-01, percentage of teachers holding | 0.043 | 0.010 | 0.04 | 4.447 | 0.000 |

a Dependent Variable: LANG01NP

ISH LEARNERS' SCIENCE ACHIEVEMENT

Descriptive Statistics

| | Mean | Std. Deviation | N |
|--|---------|----------------|-----|
| SCI01NP EL studs science nce 01 | 24.32 | 7.407 | 743 |
| PCEL01 % English Learners | 20.218 | 18.5332 | 743 |
| PCBIL01 % bilingual ed 00-01 | 2.09 | 6.798 | 743 |
| PCFREE01 % free or reduced lunch | 35.945 | 24.0093 | 743 |
| PCMIN01 % Minority 00-01 | 65.755 | 24.1101 | 743 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | 73.53 | 27.514 | 743 |
| TOT_EN01 Total enroll 2000-01 | 1895.34 | 965.775 | 743 |
| ELEM01 Elem. school 00-01 | 0 | 0 | 743 |
| SCI00NP EL studs science nce 99-00 | 24.3 | 7.376 | 743 |
| EMERPC01 00-01, percentage of teachers holding emergency credentials | 12.11 | 8.958 | 743 |

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|---------|----------|-------------------|----------------------------|
| 1 | .847(a) | 0.717 | 0.714 | 3.96 |

a Predictors: (Constant), EMERPC01 00-01, percentage of teachers holding emergency credentials, PCBIL01 % bilingual ed 00-01, TOT_EN01 Total enroll 2000-01, SCI00NP, PCEL01, PCFREE01 % free or reduced lunch , PCSPAN01 % of EL who are Span. speakers 00-01, PCMIN01

Coefficients(a)

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|--|-----------------------------|------------|---------------------------|--------|-------|
| | B | Std. Error | Beta | | |
| (Constant) | 12.475 | 1.168 | | 10.682 | 0.000 |
| PCEL01 % English Learners | 0.005 | 0.010 | 0.01 | 0.497 | 0.619 |
| PCBIL01 % bilingual ed 00-01 | -0.033 | 0.022 | -0.03 | -1.499 | 0.134 |
| PCFREE01 % free or reduced lunch | -0.019 | 0.008 | -0.06 | -2.272 | 0.023 |
| PCMIN01 % Minority 00-01 | -0.017 | 0.009 | -0.06 | -1.964 | 0.050 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | -0.047 | 0.007 | -0.17 | -6.645 | 0.000 |
| TOT_EN01 Total enroll 2000-01 | 0.000 | 0.000 | 0.04 | 2.057 | 0.040 |
| SCI00NP EL studs science nce 99-00 | 0.677 | 0.026 | 0.67 | 26.123 | 0.000 |
| EMERPC01 00-01, percentage of teachers holding | 0.003 | 0.018 | 0.00 | 0.158 | 0.874 |

a Dependent Variable: SCI01NP

ENGLISH LEARNERS- SOCIAL STUDIES ACHIEVEMENT

Descriptive Statistics

| | Mean | Std. Deviation | N |
|--|---------|----------------|-----|
| SS01NP EL studs social science nce 01 | 25.29 | 6.871 | 742 |
| PCEL01 % English Learners | 20.162 | 18.5621 | 742 |
| PCBIL01 % bilingual ed 00-01 | 2.09 | 6.803 | 742 |
| PCFREE01 % free or reduced lunch | 35.885 | 24.0177 | 742 |
| PCMIN01 % Minority 00-01 | 65.664 | 24.2687 | 742 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | 73.42 | 27.537 | 742 |
| TOT_EN01 Total enroll 2000-01 | 1900.47 | 961.421 | 742 |
| ELEM01 Elem. school 00-01 | 0 | 0 | 742 |
| SS00NP EL studs social science nce 99-00 | 24.68 | 6.332 | 742 |
| EMERPC01 00-01, percentage of teachers holding emergency credentials | 12.13 | 8.926 | 742 |

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|---------|----------|-------------------|----------------------------|
| 1 | .747(a) | 0.558 | 0.553 | 4.594 |

a Predictors: (Constant), EMERPC01 00-01, percentage of teachers holding emergency credentials, PCBIL01 % bilingual ed 00-01, TOT_EN01 Total enroll 2000-01, SS00NP, PCEL01, PCSPAN01 % of EL who are Span. speakers 00-01, PCFREE01 % free or reduced lunch , PCMIN01

Coefficients(a)

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|--|-----------------------------|------------|---------------------------|--------|-------|
| | B | Std. Error | Beta | | |
| (Constant) | 17.125 | 1.316 | | 13.009 | 0.000 |
| PCEL01 % English Learners | 0.006 | 0.011 | 0.02 | 0.574 | 0.566 |
| PCBIL01 % bilingual ed 00-01 | -0.023 | 0.026 | -0.02 | -0.893 | 0.372 |
| PCFREE01 % free or reduced lunch | -0.034 | 0.010 | -0.12 | -3.477 | 0.001 |
| PCMIN01 % Minority 00-01 | -0.029 | 0.010 | -0.10 | -2.827 | 0.005 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | -0.045 | 0.008 | -0.18 | -6.008 | 0.000 |
| TOT_EN01 Total enroll 2000-01 | 0.000 | 0.000 | 0.04 | 1.558 | 0.120 |
| EL studs social science nce 99-00 | 0.574 | 0.032 | 0.53 | 18.100 | 0.000 |
| EMERPC01 00-01, percentage of teachers holding | -0.012 | 0.021 | -0.02 | -0.601 | 0.548 |

a Dependent Variable: SS01NP

Appendix 3

Multiple Regression Statistical Analyses of the Relationship Between School Achievement (SAT 9) and the Percentage of Teachers with Waivered Credentials in California Schools, 2001-02

ALL STUDENTS' READING ACHIEVEMENT

Descriptive Statistics

| | Mean | Std. Deviation | N |
|---|--------|----------------|------|
| RD01NP_A all studs reading nce 01 | 46.1 | 18.614 | 7280 |
| PCEL01 % English Learners | 24.962 | 22.0143 | 7280 |
| PCBIL01 % bilingual ed 00-01 | 6.27 | 17.349 | 7280 |
| PCFREE01 % free or reduced lunch | 48.492 | 30.2527 | 7280 |
| PCMIN01 % Minority 00-01 | 62.026 | 28.1766 | 7280 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | 73.43 | 29.696 | 7280 |
| TOT_EN01 Total enroll 2000-01 | 792.96 | 597.728 | 7280 |
| ELEM01 Elem. school 00-01 | 0.67 | 0.468 | 7280 |
| RD00NP_A all students reading nce 99-00 | 44.81 | 18.591 | 7280 |
| WVRPC01 00-01, percentage of teachers working under waivers | 0.7953 | 2.15557 | 7280 |

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|---------|----------|-------------------|----------------------------|
| 1 | .982(a) | 0.964 | 0.964 | 3.554 |

a Predictors: (Constant), WVRPC01 00-01, percentage of teachers working under waivers, PCBIL01 % bilingual ed 00-01, TOT_EN01 Total enroll 2000-01, PCSPAN01 % of EL who are Span. speakers 00-01, PCMIN01, ELEM01 Elem. school 00-01, PCEL01, PCFREE01 % free or reduced lunch , RD00NP_A

Coefficients(a)

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|-----------------------------|------------|---------------------------|---------|-------|
| | B | Std. Error | Beta | | |
| (Constant) | 4.013 | 0.352 | | 11.408 | 0.000 |
| PCEL01 % English Learners | 0.007 | 0.003 | 0.01 | 2.245 | 0.025 |
| PCBIL01 % bilingual ed 00-01 | -0.022 | 0.003 | -0.02 | -8.377 | 0.000 |
| PCFREE01 % free or reduced lunch | -0.010 | 0.003 | -0.02 | -3.985 | 0.000 |
| PCMIN01 % Minority 00-01 | -0.008 | 0.003 | -0.01 | -3.108 | 0.002 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | -0.008 | 0.002 | -0.01 | -4.524 | 0.000 |
| TOT_EN01 Total enroll 2000-01 | 0.000 | 0.000 | 0.00 | -0.768 | 0.442 |
| ELEM01 Elem. school 00-01 | 1.855 | 0.121 | 0.05 | 15.354 | 0.000 |
| RD00NP_A all students reading nce 99-00 | 0.946 | 0.004 | 0.95 | 218.907 | 0.000 |
| WVRPC01 00-01, percentage of teachers working under waivers | -0.007 | 0.020 | 0.00 | -0.366 | 0.714 |

a Dependent Variable: RD01NP_A all studs reading nce 01

ALL STUDENTS' MATH PERFORMANCE

Descriptive Statistics

| | Mean | Std. Deviation | N |
|---|--------|----------------|------|
| MA01NP_A all studs math nce 01 | 55.04 | 18.084 | 7280 |
| PCEL01 % English Learners | 24.952 | 22.0094 | 7280 |
| PCBIL01 % bilingual ed 00-01 | 6.27 | 17.349 | 7280 |
| PCFREE01 % free or reduced lunch | 48.496 | 30.2487 | 7280 |
| PCMIN01 % Minority 00-01 | 62.011 | 28.1824 | 7280 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | 73.44 | 29.695 | 7280 |
| TOT_EN01 Total enroll 2000-01 | 792.95 | 597.745 | 7280 |
| ELEM01 Elem. school 00-01 | 0.68 | 0.468 | 7280 |
| MA00NP_A all students math nce 99-00 | 52.83 | 18.125 | 7280 |
| WVRPC01 00-01, percentage of teachers working under waivers | 0.7953 | 2.15557 | 7280 |

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|---------|----------|-------------------|----------------------------|
| 1 | .969(a) | 0.938 | 0.938 | 4.5 |

a Predictors: (Constant), WVRPC01 00-01, percentage of teachers working under waivers, PCBIL01 % bilingual ed 00-01, TOT_EN01 Total enroll 2000-01, PCSPAN01 % of EL who are Span. speakers 00-01, PCMIN01, ELEM01 Elem. school 00-01, MA00NP_A, PCEL01, PCFREE01 % free or reduced lunch

Coefficients(a)

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|-----------------------------|------------|---------------------------|---------|-------|
| | B | Std. Error | Beta | | |
| (Constant) | 7.926 | 0.430 | | 18.449 | 0.000 |
| PCEL01 % English Learners | 0.014 | 0.004 | 0.02 | 3.526 | 0.000 |
| PCBIL01 % bilingual ed 00-01 | -0.012 | 0.003 | -0.01 | -3.488 | 0.000 |
| PCFREE01 % free or reduced lunch | -0.017 | 0.003 | -0.03 | -5.426 | 0.000 |
| PCMIN01 % Minority 00-01 | -0.020 | 0.003 | -0.03 | -6.222 | 0.000 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | -0.015 | 0.002 | -0.02 | -6.749 | 0.000 |
| TOT_EN01 Total enroll 2000-01 | 0.000 | 0.000 | 0.01 | 2.708 | 0.007 |
| ELEM01 Elem. school 00-01 | 2.962 | 0.152 | 0.08 | 19.479 | 0.000 |
| MA00NP_A all students math nce 99-00 | 0.904 | 0.005 | 0.91 | 182.081 | 0.000 |
| WVRPC01 00-01, percentage of teachers working under waivers | -0.008 | 0.025 | 0.00 | -0.312 | 0.755 |

a Dependent Variable: MA01NP_A all studs math nce 01

ALL STUDENTS' LANGUAGE ACHIEVEMENT

Descriptive Statistics

| | Mean | Std. Deviation | N |
|---|--------|----------------|------|
| LA01NP_A all studs language nce 01 | 51.18 | 17.943 | 7276 |
| PCEL01 % English Learners | 24.957 | 22.0111 | 7276 |
| PCBIL01 % bilingual ed 00-01 | 6.28 | 17.353 | 7276 |
| PCFREE01 % free or reduced lunch | 48.509 | 30.2367 | 7276 |
| PCMIN01 % Minority 00-01 | 62.004 | 28.1767 | 7276 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | 73.45 | 29.687 | 7276 |
| TOT_EN01 Total enroll 2000-01 | 793.36 | 597.642 | 7276 |
| ELEM01 Elem. school 00-01 | 0.68 | 0.468 | 7276 |
| LA00NP_A all studs language nce 01 | 49.53 | 18.054 | 7276 |
| WVRPC01 00-01, percentage of teachers working under waivers | 0.793 | 2.14431 | 7276 |

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|---------|----------|-------------------|----------------------------|
| 1 | .974(a) | 0.948 | 0.948 | 4.082 |

a Predictors: (Constant), WVRPC01 00-01, percentage of teachers working under waivers, PCBIL01 % bilingual ed 00-01, TOT_EN01 Total enroll 2000-01, PCSPAN01 % of EL who are Span. speakers 00-01, PCMIN01, ELEM01 Elem. school 00-01, LA00NP_A, PCEL01, PCFREE01 % free or reduced lunch

Coefficients(a)

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|-----------------------------|------------|---------------------------|---------|-------|
| | B | Std. Error | Beta | | |
| (Constant) | 4.867 | 0.399 | | 12.202 | 0.000 |
| PCEL01 % English Learners | 0.017 | 0.004 | 0.02 | 4.739 | 0.000 |
| PCBIL01 % bilingual ed 00-01 | -0.022 | 0.003 | -0.02 | -7.244 | 0.000 |
| PCFREE01 % free or reduced lunch | -0.013 | 0.003 | -0.02 | -4.380 | 0.000 |
| PCMIN01 % Minority 00-01 | -0.008 | 0.003 | -0.01 | -2.842 | 0.004 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | -0.009 | 0.002 | -0.02 | -4.544 | 0.000 |
| TOT_EN01 Total enroll 2000-01 | 0.000 | 0.000 | 0.01 | 3.639 | 0.000 |
| ELEM01 Elem. school 00-01 | 1.637 | 0.134 | 0.04 | 12.202 | 0.000 |
| LA00NP_A all studs language nce 01 | 0.938 | 0.005 | 0.94 | 199.195 | 0.000 |
| WVRPC01 00-01, percentage of teachers working under waivers | -0.015 | 0.023 | 0.00 | -0.669 | 0.504 |

a Dependent Variable: LA01NP_A

ALL STUDENTS' SCIENCE ACHIEVEMENT

Descriptive Statistics

| | Mean | Std. Deviation | N |
|---|---------|----------------|------|
| SC01NP_A all studs science nce 01 | 40.67 | 15.749 | 1243 |
| PCEL01 % English Learners | 16.403 | 17.3772 | 1243 |
| PCBIL01 % bilingual ed 00-01 | 1.71 | 8.052 | 1243 |
| PCFREE01 % free or reduced lunch | 32.754 | 25.5318 | 1243 |
| PCMIN01 % Minority 00-01 | 59.217 | 26.9172 | 1243 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | 75.07 | 28.622 | 1243 |
| TOT_EN01 Total enroll 2000-01 | 1329.31 | 1088.615 | 1243 |
| ELEM01 Elem. school 00-01 | 0 | 0.028 | 1243 |
| SC00NP_A all studs science nce 99-00 | 40.74 | 15.412 | 1243 |
| WVRPC01 00-01, percentage of teachers working under waivers | 1.1326 | 2.45483 | 1243 |

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|---------|----------|-------------------|----------------------------|
| 1 | .955(a) | 0.912 | 0.911 | 4.691 |

a Predictors: (Constant), WVRPC01 00-01, percentage of teachers working under waivers, ELEM01 Elem. school 00-01, PCSPAN01 % of EL who are Span. speakers 00-01, PCBIL01 % bilingual ed 00-01, TOT_EN01 Total enroll 2000-01, PCEL01, PCFREE01 % free or reduced lunch , PCMIN01, SC00NP_A

Coefficients(a)

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|-----------------------------|------------|---------------------------|--------|-------|
| | B | Std. Error | Beta | | |
| (Constant) | 4.881 | 1.025 | | 4.760 | 0.000 |
| PCEL01 % English Learners | -0.004 | 0.009 | -0.01 | -0.431 | 0.666 |
| PCBIL01 % bilingual ed 00-01 | -0.003 | 0.017 | 0.00 | -0.192 | 0.847 |
| PCFREE01 % free or reduced lunch | -0.014 | 0.007 | -0.02 | -2.081 | 0.038 |
| PCMIN01 % Minority 00-01 | -0.020 | 0.008 | -0.03 | -2.457 | 0.014 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | -0.009 | 0.005 | -0.02 | -1.676 | 0.094 |
| TOT_EN01 Total enroll 2000-01 | 0.001 | 0.000 | 0.04 | 3.477 | 0.001 |
| ELEM01 Elem. school 00-01 | 0.446 | 4.700 | 0.00 | 0.095 | 0.924 |
| SC00NP_A all studs science nce 99-00 | 0.920 | 0.014 | 0.90 | 63.750 | 0.000 |
| WVRPC01 00-01, percentage of teachers working under waivers | -0.043 | 0.055 | -0.01 | -0.786 | 0.432 |

a Dependent Variable: SC01NP_A

ALL STUDENTS' SOCIAL STUDIES ACHIEVEMENT

Descriptive Statistics

| | Mean | Std. Deviation | N |
|---|---------|----------------|------|
| SS01NP_A all studs social science nce 01 | 42.24 | 15.546 | 1242 |
| PCEL01 % English Learners | 16.387 | 17.3449 | 1242 |
| PCBIL01 % bilingual ed 00-01 | 1.71 | 8.055 | 1242 |
| PCFREE01 % free or reduced lunch | 32.814 | 25.5526 | 1242 |
| PCMIN01 % Minority 00-01 | 59.299 | 26.8616 | 1242 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | 75.07 | 28.547 | 1242 |
| TOT_EN01 Total enroll 2000-01 | 1330.35 | 1088.434 | 1242 |
| ELEM01 Elem. school 00-01 | 0 | 0.028 | 1242 |
| SS00NP_A all studs social science nce 99-00 | 41.82 | 15.106 | 1242 |
| WVRPC01 00-01, percentage of teachers working under waivers | 1.1336 | 2.4556 | 1242 |

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|---------|----------|-------------------|----------------------------|
| 1 | .956(a) | 0.914 | 0.913 | 4.574 |

a Predictors: (Constant), WVRPC01 00-01, percentage of teachers working under waivers, ELEM01 Elem. school 00-01, PCSPAN01 % of EL who are Span. speakers 00-01, PCBIL01 % bilingual ed 00-01, TOT_EN01 Total enroll 2000-01, PCEL01, PCFREE01 % free or reduced lunch , PCMIN01, SS00NP_A

Coefficients(a)

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|-----------------------------|------------|---------------------------|--------|-------|
| | B | Std. Error | Beta | | |
| (Constant) | 8.696 | 0.972 | | 8.945 | 0.000 |
| PCEL01 % English Learners | 0.001 | 0.009 | 0.00 | 0.096 | 0.923 |
| PCBIL01 % bilingual ed 00-01 | 0.013 | 0.016 | 0.01 | 0.789 | 0.430 |
| PCFREE01 % free or reduced lunch | -0.010 | 0.006 | -0.02 | -1.486 | 0.138 |
| PCMIN01 % Minority 00-01 | -0.048 | 0.007 | -0.08 | -6.460 | 0.000 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | -0.019 | 0.005 | -0.04 | -3.696 | 0.000 |
| TOT_EN01 Total enroll 2000-01 | 0.001 | 0.000 | 0.05 | 4.886 | 0.000 |
| ELEM01 Elem. school 00-01 | -0.795 | 4.582 | 0.00 | -0.173 | 0.862 |
| SS00NP_A all studs social science nce 99-00 | 0.888 | 0.014 | 0.86 | 64.624 | 0.000 |
| WVRPC01 00-01, percentage of teachers working under waivers | 0.019 | 0.053 | 0.00 | 0.360 | 0.719 |

a Dependent Variable: SS01NP_A

POOR STUDENTS' READING ACHIEVEMENT

Descriptive Statistics

| | Mean | Std. Deviation | N |
|---|--------|----------------|------|
| RD01NP_P poor studs reading nce 01 | 34.69 | 12.041 | 6224 |
| PCEL01 % English Learners | 27.797 | 21.8429 | 6224 |
| PCBIL01 % bilingual ed 00-01 | 7.27 | 18.452 | 6224 |
| PCFREE01 % free or reduced lunch | 54.708 | 27.5017 | 6224 |
| PCMIN01 % Minority 00-01 | 66.474 | 26.5681 | 6224 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | 77.21 | 26.63 | 6224 |
| TOT_EN01 Total enroll 2000-01 | 845.74 | 610.395 | 6224 |
| ELEM01 Elem. school 00-01 | 0.67 | 0.47 | 6224 |
| RD00NP_P poor studs reading nce 99-00 | 33.25 | 11.893 | 6224 |
| WVRPC01 00-01, percentage of teachers working under waivers | 0.851 | 2.18952 | 6224 |

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|---------|----------|-------------------|----------------------------|
| 1 | .922(a) | 0.849 | 0.849 | 4.677 |

a Predictors: (Constant), WVRPC01 00-01, percentage of teachers working under waivers, PCFREE01 % free or reduced lunch , TOT_EN01 Total enroll 2000-01, PCBIL01 % bilingual ed 00-01, PCSPAN01 % of EL who are Span. speakers 00-01, ELEM01 Elem. school 00-01, RD00NP_P, PCMIN01, PCEL01

Coefficients(a)

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|-----------------------------|------------|---------------------------|---------|-------|
| | B | Std. Error | Beta | | |
| (Constant) | 8.071 | 0.463 | | 17.417 | 0.000 |
| PCEL01 % English Learners | -0.008 | 0.005 | -0.02 | -1.793 | 0.073 |
| PCBIL01 % bilingual ed 00-01 | -0.032 | 0.003 | -0.05 | -9.219 | 0.000 |
| PCFREE01 % free or reduced lunch | -0.009 | 0.004 | -0.02 | -2.637 | 0.008 |
| PCMIN01 % Minority 00-01 | -0.008 | 0.004 | -0.02 | -2.102 | 0.036 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | -0.016 | 0.003 | -0.04 | -6.293 | 0.000 |
| TOT_EN01 Total enroll 2000-01 | 0.000 | 0.000 | -0.02 | -4.124 | 0.000 |
| ELEM01 Elem. school 00-01 | 2.788 | 0.169 | 0.11 | 16.447 | 0.000 |
| RD00NP_P poor studs reading nce 99-00 | 0.839 | 0.007 | 0.83 | 114.467 | 0.000 |
| WVRPC01 00-01, percentage of teachers working under | -0.029 | 0.028 | -0.01 | -1.040 | 0.298 |

a Dependent Variable: RD01NP_P poor studs reading nce 01

POOR STUDENTS' MATH ACHIEVEMENT

Descriptive Statistics

| | Mean | Std. Deviation | N |
|---|--------|----------------|------|
| MA01NP_P poor studs math nce 01 | 45.23 | 12.667 | 6233 |
| PCEL01 % English Learners | 27.778 | 21.8352 | 6233 |
| PCBIL01 % bilingual ed 00-01 | 7.28 | 18.468 | 6233 |
| PCFREE01 % free or reduced lunch | 54.64 | 27.5091 | 6233 |
| PCMIN01 % Minority 00-01 | 66.435 | 26.5724 | 6233 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | 77.19 | 26.633 | 6233 |
| TOT_EN01 Total enroll 2000-01 | 845.27 | 610.104 | 6233 |
| ELEM01 Elem. school 00-01 | 0.67 | 0.469 | 6233 |
| MA00NP_P poor studs math nce 99-00 | 42.73 | 12.391 | 6233 |
| WVRPC01 00-01, percentage of teachers working under waivers | 0.8505 | 2.18758 | 6233 |

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|---------|----------|-------------------|----------------------------|
| 1 | .890(a) | 0.793 | 0.793 | 5.769 |

a Predictors: (Constant), WVRPC01 00-01, percentage of teachers working under waivers, PCFREE01 % free or reduced lunch , TOT_EN01 Total enroll 2000-01, PCBIL01 % bilingual ed 00-01, PCSPAN01 % of EL who are Span. speakers 00-01, MA00NP_P, ELEM01 Elem. school 00-01, PCMIN01, PCEL01

Coefficients(a)

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|-----------------------------|------------|---------------------------|---------|-------|
| | B | Std. Error | Beta | | |
| (Constant) | 12.497 | 0.558 | | 22.388 | 0.000 |
| PCEL01 % English Learners | 0.010 | 0.006 | 0.02 | 1.773 | 0.076 |
| PCBIL01 % bilingual ed 00-01 | -0.020 | 0.004 | -0.03 | -4.653 | 0.000 |
| PCFREE01 % free or reduced lunch | -0.022 | 0.004 | -0.05 | -5.027 | 0.000 |
| PCMIN01 % Minority 00-01 | -0.014 | 0.004 | -0.03 | -3.167 | 0.002 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | -0.029 | 0.003 | -0.06 | -9.140 | 0.000 |
| TOT_EN01 Total enroll 2000-01 | 0.000 | 0.000 | 0.00 | -0.075 | 0.940 |
| ELEM01 Elem. school 00-01 | 3.872 | 0.206 | 0.14 | 18.829 | 0.000 |
| MA00NP_P poor studs math nce 99-00 | 0.806 | 0.008 | 0.79 | 105.325 | 0.000 |
| WVRPC01 00-01, percentage of teachers working under | -0.065 | 0.034 | -0.01 | -1.900 | 0.057 |

a Dependent Variable: MA01NP_P poor studs math nce 01

POOR STUDENTS' LANGUAGE ACHIEVEMENT

Descriptive Statistics

| | Mean | Std. Deviation | N |
|---|--------|----------------|------|
| LA01NP_P poor studs language nce 01 | 40.59 | 11.966 | 6227 |
| PCEL01 % English Learners | 27.774 | 21.843 | 6227 |
| PCBIL01 % bilingual ed 00-01 | 7.28 | 18.476 | 6227 |
| PCFREE01 % free or reduced lunch | 54.664 | 27.5025 | 6227 |
| PCMIN01 % Minority 00-01 | 66.423 | 26.5798 | 6227 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | 77.19 | 26.626 | 6227 |
| TOT_EN01 Total enroll 2000-01 | 845.8 | 610.079 | 6227 |
| ELEM01 Elem. school 00-01 | 0.67 | 0.469 | 6227 |
| LA00NP_P poor studs language nce 99-00 | 38.72 | 11.908 | 6227 |
| WVRPC01 00-01, percentage of teachers working under waivers | 0.846 | 2.17176 | 6227 |

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|---------|----------|-------------------|----------------------------|
| 1 | .896(a) | 0.802 | 0.802 | 5.324 |

a Predictors: (Constant), WVRPC01 00-01, percentage of teachers working under waivers, PCFREE01 % free or reduced lunch , TOT_EN01 Total enroll 2000-01, PCBIL01 % bilingual ed 00-01, PCSPAN01 % of EL who are Span. speakers 00-01, ELEM01 Elem. school 00-01, LA00NP_P, PCMIN01, PCEL01

Coefficients(a)

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|-----------------------------|------------|---------------------------|---------|-------|
| | B | Std. Error | Beta | | |
| (Constant) | 9.351 | 0.527 | | 17.743 | 0.000 |
| PCEL01 % English Learners | 0.007 | 0.005 | 0.01 | 1.313 | 0.189 |
| PCBIL01 % bilingual ed 00-01 | -0.033 | 0.004 | -0.05 | -8.185 | 0.000 |
| PCFREE01 % free or reduced lunch | -0.020 | 0.004 | -0.05 | -4.780 | 0.000 |
| PCMIN01 % Minority 00-01 | 0.001 | 0.004 | 0.00 | 0.184 | 0.854 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | -0.018 | 0.003 | -0.04 | -6.253 | 0.000 |
| TOT_EN01 Total enroll 2000-01 | 0.000 | 0.000 | -0.01 | -0.825 | 0.409 |
| ELEM01 Elem. school 00-01 | 2.414 | 0.187 | 0.10 | 12.923 | 0.000 |
| LA00NP_P poor studs language nce 99-00 | 0.832 | 0.008 | 0.83 | 108.996 | 0.000 |
| WVRPC01 00-01, percentage of teachers working under | -0.049 | 0.032 | -0.01 | -1.552 | 0.121 |

a Dependent Variable: LA01NP_P

POOR STUDENTS' SCIENCE ACHIEVEMENT

Descriptive Statistics

| | Mean | Std. Deviation | N |
|---|---------|-------------------|-----|
| SC01NP_P poor studs science nce 01 | 32.64 | 9.456 | 975 |
| PCEL01 % English Learners | 17.125 | 14.7102 | 975 |
| PCBIL01 % bilingual ed 00-01 | 2.17 | 9.028 | 975 |
| PCFREE01 % free or reduced lunch | 37.151 | 24.5495 | 975 |
| PCMIN01 % Minority 00-01 | 61.505 | 26.4261 | 975 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | 76.18 | 26.683 | 975 |
| TOT_EN01 Total enroll 2000-01 | 1572.53 | 1056.637 | 975 |
| ELEM01 Elem. school 00-01 | 0 | 0 | 975 |
| SC00NP_P poor studs science nce 99-00 | 33 | 9.35 | 975 |
| WVRPC01 00-01, percentage of teachers working under waivers | 1.2771 | 2.44861 | 975 |

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|---------|----------|-------------------|----------------------------|
| 1 | .873(a) | 0.762 | 0.76 | 4.636 |

a Predictors: (Constant), WVRPC01 00-01, percentage of teachers working under waivers, SC00NP_P, PCBIL01 % bilingual ed 00-01, TOT_EN01 Total enroll 2000-01, PCFREE01 % free or reduced lunch, PCSPAN01 % of EL who are Span. speakers 00-01, PCEL01, PCMIN01

Coefficients(a)

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|-----------------------------|------------|---------------------------|--------|-------|
| | B | Std. Error | Beta | | |
| (Constant) | 9.377 | 1.160 | | 8.082 | 0.000 |
| PCEL01 % English Learners | -0.018 | 0.014 | -0.03 | -1.282 | 0.200 |
| PCBIL01 % bilingual ed 00-01 | 0.017 | 0.017 | 0.02 | 1.029 | 0.304 |
| PCFREE01 % free or reduced lunch | -0.005 | 0.008 | -0.01 | -0.600 | 0.549 |
| PCMIN01 % Minority 00-01 | -0.021 | 0.009 | -0.06 | -2.491 | 0.013 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | -0.023 | 0.006 | -0.06 | -3.549 | 0.000 |
| TOT_EN01 Total enroll 2000-01 | 0.001 | 0.000 | 0.08 | 4.503 | 0.000 |
| SC00NP_P poor studs science nce 99-00 | 0.780 | 0.021 | 0.77 | 36.985 | 0.000 |
| WVRPC01 00-01, percentage of teachers working under | -0.050 | 0.061 | -0.01 | -0.824 | 0.410 |

a Dependent Variable: SC01NP_P

POOR STUDENTS' SOCIAL STUDIES ACHIEVEMENT

Descriptive Statistics

| | Mean | Std. Deviation | N |
|---|---------|-------------------|-----|
| SS01NP_P poor studs social science nce 01 | 34.22 | 9.193 | 973 |
| PCEL01 % English Learners | 17.137 | 14.7197 | 973 |
| PCBIL01 % bilingual ed 00-01 | 2.17 | 9.036 | 973 |
| PCFREE01 % free or reduced lunch | 37.236 | 24.5249 | 973 |
| PCMIN01 % Minority 00- 01 | 61.528 | 26.4614 | 973 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | 76.2 | 26.682 | 973 |
| TOT_EN01 Total enroll 2000-01 | 1575.91 | 1055.807 | 973 |
| ELEM01 Elem. school 00- 01 | 0 | 0 | 973 |
| SS00NP_P poor studs social science nce 99-00 | 34.03 | 9.161 | 973 |
| WVRPC01 00-01, percentage of teachers working under waivers | 1.2779 | 2.44973 | 973 |

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|---------|----------|----------------------|-------------------------------|
| 1 | .852(a) | 0.726 | 0.724 | 4.83 |

a Predictors: (Constant), WVRPC01 00-01, percentage of teachers working under waivers, TOT_EN01 Total enroll 2000-01, PCBIL01 % bilingual ed 00-01, PCMIN01, PCSPAN01 % of EL who are Span. speakers 00-01, SS00NP_P, PCFREE01 % free or reduced lunch, PCEL01

Coefficients(a)

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|--------------------------------|------------|------------------------------|--------|-------|
| | B | Std. Error | Beta | | |
| (Constant) | 11.551 | 1.184 | | 9.753 | 0.000 |
| PCEL01 % English Learners | -0.022 | 0.015 | -0.04 | -1.492 | 0.136 |
| PCBIL01 % bilingual ed 00-01 | 0.011 | 0.017 | 0.01 | 0.620 | 0.535 |
| PCFREE01 % free or reduced lunch | 0.002 | 0.008 | 0.01 | 0.214 | 0.830 |
| PCMIN01 % Minority 00-01 | -0.032 | 0.009 | -0.09 | -3.639 | 0.000 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | -0.019 | 0.007 | -0.06 | -2.887 | 0.004 |
| TOT_EN01 Total enroll 2000-01 | 0.001 | 0.000 | 0.09 | 5.018 | 0.000 |
| SS00NP_P poor studs social science nce 99-00 | 0.740 | 0.022 | 0.74 | 33.751 | 0.000 |
| WVRPC01 00-01, percentage of teachers working under | -0.060 | 0.064 | -0.02 | -0.939 | 0.348 |

a Dependent Variable: SS01NP_P

ENGLISH LEARNERS' READING ACHIEVEMENT

Descriptive Statistics

| | Mean | Std. Deviation | N |
|---|--------|----------------|------|
| READ01NP EL studs reading nce 01 | 23.36 | 11.021 | 4762 |
| PCEL01 % English Learners | 33.928 | 21.3587 | 4762 |
| PCBIL01 % bilingual ed 00-01 | 9 | 19.937 | 4762 |
| PCFREE01 % free or reduced lunch | 58.96 | 27.4912 | 4762 |
| PCMIN01 % Minority 00-01 | 74.207 | 22.0474 | 4762 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | 77.98 | 26.797 | 4762 |
| TOT_EN01 Total enroll 2000-01 | 947.27 | 645.566 | 4762 |
| ELEM01 Elem. school 00-01 | 0.65 | 0.477 | 4762 |
| READ00NP Reading NCE EL 99-00 | 21.98 | 10.348 | 4762 |
| WVRPC01 00-01, percentage of teachers working under waivers | 0.9009 | 2.14603 | 4762 |

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|---------|----------|-------------------|----------------------------|
| 1 | .882(a) | 0.777 | 0.777 | 5.205 |

a Predictors: (Constant), WVRPC01 00-01, percentage of teachers working under waivers, PCFREE01 % free or reduced lunch , PCBIL01 % bilingual ed 00-01, TOT_EN01 Total enroll 2000-01, PCSPAN01 % of EL who are Span. speakers 00-01, READ00NP Reading NCE EL 99-00, PCMIN01, ELEM01 Elem. school 00-01, PCEL01

Coefficients(a)

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|-----------------------------|------------|---------------------------|---------|-------|
| | B | Std. Error | Beta | | |
| (Constant) | 10.206 | 0.524 | | 19.471 | 0.000 |
| PCEL01 % English Learners | 0.025 | 0.005 | 0.05 | 4.500 | 0.000 |
| PCBIL01 % bilingual ed 00-01 | -0.041 | 0.004 | -0.07 | -10.045 | 0.000 |
| PCFREE01 % free or reduced lunch | -0.047 | 0.005 | -0.12 | -9.982 | 0.000 |
| PCMIN01 % Minority 00-01 | 0.005 | 0.005 | 0.01 | 0.886 | 0.376 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | -0.035 | 0.003 | -0.09 | -10.151 | 0.000 |
| TOT_EN01 Total enroll 2000-01 | -0.001 | 0.000 | -0.07 | -8.703 | 0.000 |
| ELEM01 Elem. school 00-01 | 3.704 | 0.235 | 0.16 | 15.739 | 0.000 |
| READ00NP Reading NCE EL 99-00 | 0.756 | 0.010 | 0.71 | 72.857 | 0.000 |
| WVRPC01 00-01, percentage of teachers working under | 0.025 | 0.036 | 0.01 | 0.688 | 0.491 |

a Dependent Variable: READ01NP EL studs reading nce 01

ENGLISH LEARNERS' MATH ACHIEVEMENT

Descriptive Statistics

| | Mean | Std. Deviation | N |
|---|--------|----------------|------|
| MATH01NP EL studs math nce 01 | 38.44 | 14.339 | 4806 |
| PCEL01 % English Learners | 33.804 | 21.3672 | 4806 |
| PCBIL01 % bilingual ed 00-01 | 8.97 | 19.911 | 4806 |
| PCFREE01 % free or reduced lunch | 58.839 | 27.5358 | 4806 |
| PCMIN01 % Minority 00-01 | 74.029 | 22.1162 | 4806 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | 77.93 | 26.822 | 4806 |
| TOT_EN01 Total enroll 2000-01 | 943.65 | 644.339 | 4806 |
| ELEM01 Elem. school 00-01 | 0.65 | 0.476 | 4806 |
| MATH00NP EL studs math nce 99-00 | 36.31 | 13.922 | 4806 |
| WVRPC01 00-01, percentage of teachers working under waivers | 0.8961 | 2.13999 | 4806 |

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|---------|----------|-------------------|----------------------------|
| 1 | .880(a) | 0.775 | 0.774 | 6.815 |

a Predictors: (Constant), WVRPC01 00-01, percentage of teachers working under waivers, PCFREE01 % free or reduced lunch, PCBIL01 % bilingual ed 00-01, TOT_EN01 Total enroll 2000-01, MATH00NP, PCSPAN01 % of EL who are Span. speakers 00-01, ELEM01 Elem. school 00-01, PCMIN01, PCEL01

Coefficients(a)

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|-----------------------------|------------|---------------------------|---------|-------|
| | B | Std. Error | Beta | | |
| (Constant) | 19.682 | 0.762 | | 25.843 | 0.000 |
| PCEL01 % English Learners | 0.033 | 0.007 | 0.05 | 4.621 | 0.000 |
| PCBIL01 % bilingual ed 00-01 | -0.021 | 0.005 | -0.03 | -3.949 | 0.000 |
| PCFREE01 % free or reduced lunch | -0.070 | 0.006 | -0.13 | -11.260 | 0.000 |
| PCMIN01 % Minority 00-01 | 0.006 | 0.007 | 0.01 | 0.893 | 0.372 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | -0.083 | 0.005 | -0.16 | -16.968 | 0.000 |
| TOT_EN01 Total enroll 2000-01 | -0.001 | 0.000 | -0.04 | -4.665 | 0.000 |
| ELEM01 Elem. school 00-01 | 5.005 | 0.295 | 0.17 | 16.993 | 0.000 |
| MATH00NP EL studs math nce 99-00 | 0.702 | 0.010 | 0.68 | 69.473 | 0.000 |
| WVRPC01 00-01, percentage of teachers working under | 0.003 | 0.047 | 0.00 | 0.067 | 0.946 |

a Dependent Variable: MATH01NP EL studs math nce 01

ENGLISH LEARNERS' LANGUAGE ACHIEVEMENT

Descriptive Statistics

| | Mean | Std. Deviation | N |
|---|--------|----------------|------|
| LANG01NP EL studs language nce 01 | 30.61 | 12.169 | 4781 |
| PCEL01 % English Learners | 33.872 | 21.3606 | 4781 |
| PCBIL01 % bilingual ed 00-01 | 8.99 | 19.936 | 4781 |
| PCFREE01 % free or reduced lunch | 58.899 | 27.5209 | 4781 |
| PCMIN01 % Minority 00-01 | 74.058 | 22.1366 | 4781 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | 77.92 | 26.849 | 4781 |
| TOT_EN01 Total enroll 2000-01 | 945.71 | 644.706 | 4781 |
| ELEM01 Elem. school 00-01 | 0.65 | 0.476 | 4781 |
| LANG00NP EL studs language nce 99-00 | 28.91 | 11.657 | 4781 |
| WVRPC01 00-01, percentage of teachers working under waivers | 0.8952 | 2.13893 | 4781 |

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|---------|----------|-------------------|----------------------------|
| 1 | .863(a) | 0.744 | 0.744 | 6.161 |

a Predictors: (Constant), WVRPC01 00-01, percentage of teachers working under waivers, PCFREE01 % free or reduced lunch , PCBIL01 % bilingual ed 00-01, TOT_EN01 Total enroll 2000-01, PCSPAN01 % of EL who are Span. speakers 00-01, LANG00NP, PCMIN01, ELEM01 Elem. school 00-01, PCEL01

Coefficients(a)

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|-----------------------------|------------|---------------------------|---------|-------|
| | B | Std. Error | Beta | | |
| (Constant) | 14.763 | 0.668 | | 22.090 | 0.000 |
| PCEL01 % English Learners | 0.037 | 0.006 | 0.07 | 5.706 | 0.000 |
| PCBIL01 % bilingual ed 00-01 | -0.044 | 0.005 | -0.07 | -9.182 | 0.000 |
| PCFREE01 % free or reduced lunch | -0.060 | 0.006 | -0.14 | -10.716 | 0.000 |
| PCMIN01 % Minority 00-01 | 0.008 | 0.006 | 0.02 | 1.348 | 0.178 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | -0.053 | 0.004 | -0.12 | -12.447 | 0.000 |
| TOT_EN01 Total enroll 2000-01 | -0.001 | 0.000 | -0.06 | -7.121 | 0.000 |
| ELEM01 Elem. school 00-01 | 3.974 | 0.271 | 0.16 | 14.687 | 0.000 |
| LANG00NP EL studs language nce 99-00 | 0.711 | 0.011 | 0.68 | 65.869 | 0.000 |
| WVRPC01 00-01, percentage of teachers working under | 0.019 | 0.043 | 0.00 | 0.450 | 0.653 |

a Dependent Variable: LANG01NP

ENGLISH LEARNERS' SCIENCE ACHIEVEMENT

Descriptive Statistics

| | Mean | Std. Deviation | N |
|---|---------|-------------------|-----|
| SCI01NP EL studs science nce 01 | 24.32 | 7.407 | 743 |
| PCEL01 % English Learners | 20.218 | 18.5332 | 743 |
| PCBIL01 % bilingual ed 00-01 | 2.09 | 6.798 | 743 |
| PCFREE01 % free or reduced lunch | 35.945 | 24.0093 | 743 |
| PCMIN01 % Minority 00-01 | 65.755 | 24.1101 | 743 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | 73.53 | 27.514 | 743 |
| TOT_EN01 Total enroll 2000-01 | 1895.34 | 965.775 | 743 |
| ELEM01 Elem. school 00-01 | 0 | 0 | 743 |
| SCI00NP EL studs science nce 99-00 | 24.3 | 7.376 | 743 |
| WVRPC01 00-01, percentage of teachers working under waivers | 1.395 | 2.35587 | 743 |

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|---------|----------|-------------------|----------------------------|
| 1 | .847(a) | 0.717 | 0.714 | 3.958 |

a Predictors: (Constant), WVRPC01 00-01, percentage of teachers working under waivers, PCBIL01 % bilingual ed 00-01, SCI00NP, TOT_EN01 Total enroll 2000-01, PCEL01, PCFREE01 % free or reduced lunch , PCSPAN01 % of EL who are Span. speakers 00-01, PCMIN01

Coefficients(a)

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|-----------------------------|------------|---------------------------|--------|-------|
| | B | Std. Error | Beta | | |
| (Constant) | 12.544 | 1.170 | | 10.724 | 0.000 |
| PCEL01 % English Learners | 0.004 | 0.010 | 0.01 | 0.453 | 0.650 |
| PCBIL01 % bilingual ed 00-01 | -0.033 | 0.022 | -0.03 | -1.504 | 0.133 |
| PCFREE01 % free or reduced lunch | -0.019 | 0.008 | -0.06 | -2.257 | 0.024 |
| PCMIN01 % Minority 00-01 | -0.017 | 0.009 | -0.05 | -1.941 | 0.053 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | -0.046 | 0.007 | -0.17 | -6.669 | 0.000 |
| TOT_EN01 Total enroll 2000-01 | 0.000 | 0.000 | 0.04 | 1.979 | 0.048 |
| SCI00NP EL studs science nce 99-00 | 0.677 | 0.026 | 0.67 | 26.129 | 0.000 |
| WVRPC01 00-01, percentage of teachers working under | -0.057 | 0.062 | -0.02 | -0.922 | 0.357 |

a Dependent Variable: SCI01NP

ENGLISH LEARNERS' SOCIAL SCIENCE ACHIEVEMENT

Descriptive Statistics

| | Mean | Std. Deviation | N |
|---|---------|----------------|-----|
| SS01NP EL studs social science nce 01 | 25.29 | 6.871 | 742 |
| PCEL01 % English Learners | 20.162 | 18.5621 | 742 |
| PCBIL01 % bilingual ed 00-01 | 2.09 | 6.803 | 742 |
| PCFREE01 % free or reduced lunch | 35.885 | 24.0177 | 742 |
| PCMIN01 % Minority 00-01 | 65.664 | 24.2687 | 742 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | 73.42 | 27.537 | 742 |
| TOT_EN01 Total enroll 2000-01 | 1900.47 | 961.421 | 742 |
| ELEM01 Elem. school 00-01 | 0 | 0 | 742 |
| SS00NP EL studs social science nce 99-00 | 24.68 | 6.332 | 742 |
| WVRPC01 00-01, percentage of teachers working under waivers | 1.3987 | 2.35634 | 742 |

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|---------|----------|-------------------|----------------------------|
| 1 | .747(a) | 0.558 | 0.553 | 4.593 |

a Predictors: (Constant), WVRPC01 00-01, percentage of teachers working under waivers, PCBIL01 % bilingual ed 00-01, SS00NP, TOT_EN01 Total enroll 2000-01, PCEL01, PCFREE01 % free or reduced lunch, PCSPAN01 % of EL who are Span. speakers 00-01, PCMIN01

Coefficients(a)

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|-----------------------------|------------|---------------------------|--------|-------|
| | B | Std. Error | Beta | | |
| (Constant) | 17.041 | 1.319 | | 12.919 | 0.000 |
| PCEL01 % English Learners | 0.007 | 0.011 | 0.02 | 0.653 | 0.514 |
| PCBIL01 % bilingual ed 00-01 | -0.022 | 0.026 | -0.02 | -0.855 | 0.393 |
| PCFREE01 % free or reduced lunch | -0.035 | 0.010 | -0.12 | -3.500 | 0.000 |
| PCMIN01 % Minority 00-01 | -0.031 | 0.010 | -0.11 | -3.129 | 0.002 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | -0.046 | 0.007 | -0.19 | -6.186 | 0.000 |
| TOT_EN01 Total enroll 2000-01 | 0.000 | 0.000 | 0.04 | 1.599 | 0.110 |
| SS00NP EL studs social science nce 99-00 | 0.574 | 0.032 | 0.53 | 18.132 | 0.000 |
| WVRPC01 00-01, percentage of teachers working under | 0.062 | 0.072 | 0.02 | 0.863 | 0.388 |

a Dependent Variable: SS01NP

Appendix 4:
Multiple Regression Analyses of the Relationship between School Achievement (SAT 9)
and the Percentage of Teachers who Have Certification to Teach English Learners in California Schools,
2000-01

Descriptive Statistics

| | Mean | Std. Deviation | N |
|--|--------|----------------|------|
| READ01NP EL studs reading nce 01 | 23.36 | 11.022 | 4769 |
| READ00NP EL studs reading nce 99-00 | 21.99 | 10.353 | 4769 |
| PCEL01 % English Learners | 33.918 | 21.3495 | 4769 |
| PCBIL01 % bilingual ed 00-01 | 8.99 | 19.926 | 4769 |
| PCFREE01 % free or reduced lunch | 58.93 | 27.4995 | 4769 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | 77.99 | 26.781 | 4769 |
| TOT_EN01 Total enroll 2000-01 | 946.59 | 645.355 | 4769 |
| ELEM01 Elem. school 00-01 | 0.65 | 0.477 | 4769 |
| PCCERTF1 00-01 % fully EL/bil cert teachers all lang instruc | 61.21 | 23.599 | 4769 |

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|---------|----------|-------------------|----------------------------|
| 1 | .882(a) | 0.778 | 0.777 | 5.203 |

a Predictors: (Constant), PCCERTF1 00-01 % fully EL/bil cert teachers all lang instruc, PCEL01, READ00NP Reading NCE EL 99-00, PCBIL01 % bilingual ed 00-01, TOT_EN01 Total enroll 2000-01, PCSPAN01 % of EL who are Span. speakers 00-01, ELEM01 Elem. school 00-01, PCFREE01 % free or

Coefficients(a)

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|--|-----------------------------|------------|---------------------------|---------|-------|
| | B | Std. Error | Beta | | |
| (Constant) | 10.572 | 0.531 | | 19.926 | 0.000 |
| READ00NP EL studs reading nce 99-00 | 0.756 | 0.010 | 0.71 | 73.152 | 0.000 |
| PCEL01 % English Learners | 0.027 | 0.005 | 0.05 | 5.265 | 0.000 |
| PCBIL01 % bilingual ed 00-01 | -0.041 | 0.004 | -0.07 | -9.918 | 0.000 |
| PCFREE01 % free or reduced lunch | -0.045 | 0.004 | -0.11 | -10.704 | 0.000 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | -0.036 | 0.003 | -0.09 | -10.337 | 0.000 |
| TOT_EN01 Total enroll 2000-01 | -0.001 | 0.000 | -0.07 | -8.692 | 0.000 |
| ELEM01 Elem. school 00-01 | 3.685 | 0.233 | 0.16 | 15.842 | 0.000 |
| PCCERTF1 00-01 % fully EL/bil cert teachers all lang instruc | -0.003 | 0.003 | -0.01 | -0.778 | 0.437 |

a Dependent Variable: READ01NP EL studs reading nce 01

Descriptive Statistics

| | Mean | Std. Deviation | N |
|--|--------|----------------|------|
| MATH01NP EL studs math nce 01 | 38.43 | 14.339 | 4813 |
| MATH00NP EL studs math nce 99-00 | 36.31 | 13.92 | 4813 |
| PCEL01 % English Learners | 33.794 | 21.3581 | 4813 |
| PCBIL01 % bilingual ed 00-01 | 8.96 | 19.9 | 4813 |
| PCFREE01 % free or reduced lunch | 58.809 | 27.5438 | 4813 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | 77.94 | 26.806 | 4813 |
| TOT_EN01 Total enroll 2000-01 | 942.99 | 644.128 | 4813 |
| ELEM01 Elem. school 00-01 | 0.65 | 0.476 | 4813 |
| PCCERTF1 00-01 % fully EL/bil cert teachers all lang instruc | 61.26 | 23.589 | 4813 |

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|---------|----------|-------------------|----------------------------|
| 1 | .880(a) | 0.775 | 0.774 | 6.814 |

a Predictors: (Constant), PCCERTF1 00-01 % fully EL/bil cert teachers all lang instruc, PCEL01, TOT_EN01 Total enroll 2000-01, PCBIL01 % bilingual ed 00-01, MATH00NP, PCSPAN01 % of EL who are Span. speakers 00-01, ELEM01 Elem. school 00-01, PCFREE01 % free or reduced lunch

Coefficients(a)

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|--|-----------------------------|------------|---------------------------|---------|-------|
| | B | Std. Error | Beta | | |
| (Constant) | 19.622 | 0.776 | | 25.287 | 0.000 |
| MATH00NP EL studs math nce 99-00 | 0.703 | 0.010 | 0.68 | 69.829 | 0.000 |
| PCEL01 % English Learners | 0.035 | 0.007 | 0.05 | 5.318 | 0.000 |
| PCBIL01 % bilingual ed 00-01 | -0.021 | 0.005 | -0.03 | -3.946 | 0.000 |
| PCFREE01 % free or reduced lunch | -0.067 | 0.006 | -0.13 | -12.056 | 0.000 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | -0.083 | 0.005 | -0.16 | -16.968 | 0.000 |
| TOT_EN01 Total enroll 2000-01 | -0.001 | 0.000 | -0.04 | -4.537 | 0.000 |
| ELEM01 Elem. school 00-01 | 4.957 | 0.291 | 0.16 | 17.046 | 0.000 |
| PCCERTF1 00-01 % fully EL/bil cert teachers all lang instruc | 0.004 | 0.004 | 0.01 | 0.903 | 0.366 |

a Dependent Variable: MATH01NP EL studs math nce 01

Descriptive Statistics

| | Mean | Std. Deviation | N |
|--|--------|----------------|------|
| LANG01NP EL studs language nce 01 | 30.6 | 12.175 | 4788 |
| LANG00NP EL studs language nce 99-00 | 28.9 | 11.661 | 4788 |
| PCEL01 % English Learners | 33.862 | 21.3514 | 4788 |
| PCBIL01 % bilingual ed 00-01 | 8.98 | 19.924 | 4788 |
| PCFREE01 % free or reduced lunch | 58.87 | 27.5291 | 4788 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | 77.93 | 26.833 | 4788 |
| TOT_EN01 Total enroll 2000-01 | 945.03 | 644.496 | 4788 |
| ELEM01 Elem. school 00-01 | 0.65 | 0.476 | 4788 |
| PCCERTF1 00-01 % fully EL/bil cert teachers all lang instruc | 61.25 | 23.599 | 4788 |

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|---------|----------|-------------------|----------------------------|
| 1 | .863(a) | 0.744 | 0.744 | 6.161 |

a Predictors: (Constant), PCCERTF1 00-01 % fully EL/bil cert teachers all lang instruc, PCEL01, TOT_EN01 Total enroll 2000-01, PCBIL01 % bilingual ed 00-01, PCSPAN01 % of EL who are Span. speakers 00-01, LANG00NP, ELEM01 Elem. school 00-01, PCFREE01 % free or reduced lunch

Coefficients(a)

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|--|-----------------------------|------------|---------------------------|---------|-------|
| | B | Std. Error | Beta | | |
| (Constant) | 14.955 | 0.680 | | 21.999 | 0.000 |
| LANG00NP EL studs language nce 99-00 | 0.712 | 0.011 | 0.68 | 66.212 | 0.000 |
| PCEL01 % English Learners | 0.040 | 0.006 | 0.07 | 6.714 | 0.000 |
| PCBIL01 % bilingual ed 00-01 | -0.044 | 0.005 | -0.07 | -9.114 | 0.000 |
| PCFREE01 % free or reduced lunch | -0.056 | 0.005 | -0.13 | -11.184 | 0.000 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | -0.053 | 0.004 | -0.12 | -12.517 | 0.000 |
| TOT_EN01 Total enroll 2000-01 | -0.001 | 0.000 | -0.06 | -7.009 | 0.000 |
| ELEM01 Elem. school 00-01 | 3.911 | 0.268 | 0.15 | 14.612 | 0.000 |
| PCCERTF1 00-01 % fully EL/bil cert teachers all lang instruc | 0.001 | 0.004 | 0.00 | 0.348 | 0.728 |

a Dependent Variable: LANG01NP

ENGLISH LEARNERS' READING ACHIEVEMENT - % CERTIFIED TEACHERS INCL. SB 1969 OR DISTRICT AUTHORIZATION

Descriptive Statistics

| | Mean | Std. Deviation | N |
|---|--------|----------------|------|
| READ01NP EL studs reading nce 01 | 23.36 | 11.022 | 4769 |
| READ00NP EL studs reading nce 99-00 | 21.99 | 10.353 | 4769 |
| PCEL01 % English Learners | 33.918 | 21.3495 | 4769 |
| PCBIL01 % bilingual ed 00-01 | 8.99 | 19.926 | 4769 |
| PCFREE01 % free or reduced lunch | 58.93 | 27.4995 | 4769 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | 77.99 | 26.781 | 4769 |
| TOT_EN01 Total enroll 2000-01 | 946.59 | 645.355 | 4769 |
| ELEM01 Elem. school 00-01 | 0.65 | 0.477 | 4769 |
| PCCERT01 00-01 % EL/bil cert teachers incl SB 1979 all lang instruc | 73.52 | 21.805 | 4769 |

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|---------|----------|-------------------|----------------------------|
| 1 | .882(a) | 0.778 | 0.777 | 5.202 |

a Predictors: (Constant), PCCERT01 00-01 % EL/bil cert teachers incl SB 1979 all lang instruc, PCBIL01 % bilingual ed 00-01, TOT_EN01 Total enroll 2000-01, PCSPAN01 % of EL who are Span. speakers 00-01, PCEL01, READ00NP Reading NCE EL 99-00, ELEM01 Elem. school 00-01, PCFREE01 % free or reduced

Coefficients(a)

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|-----------------------------|------------|---------------------------|---------|-------|
| | B | Std. Error | Beta | | |
| (Constant) | 10.776 | 0.569 | | 18.956 | 0.000 |
| READ00NP EL studs reading nce 99-00 | 0.756 | 0.010 | 0.71 | 73.168 | 0.000 |
| PCEL01 % English Learners | 0.026 | 0.005 | 0.05 | 5.213 | 0.000 |
| PCBIL01 % bilingual ed 00-01 | -0.041 | 0.004 | -0.07 | -9.991 | 0.000 |
| PCFREE01 % free or reduced lunch | -0.045 | 0.004 | -0.11 | -10.750 | 0.000 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | -0.036 | 0.003 | -0.09 | -10.377 | 0.000 |
| TOT_EN01 Total enroll 2000-01 | -0.001 | 0.000 | -0.07 | -8.737 | 0.000 |
| ELEM01 Elem. school 00-01 | 3.694 | 0.232 | 0.16 | 15.909 | 0.000 |
| PCCERT01 00-01 % EL/bil cert teachers incl SB 1979 all lang instruc | -0.004 | 0.004 | -0.01 | -1.252 | 0.211 |

a Dependent Variable: READ01NP EL studs reading nce 01

Descriptive Statistics

| | Mean | Std. Deviation | N |
|---|--------|----------------|------|
| MATH01NP EL studs math nce 01 | 38.43 | 14.339 | 4813 |
| MATH00NP EL studs math nce 99-00 | 36.31 | 13.92 | 4813 |
| PCEL01 % English Learners | 33.794 | 21.3581 | 4813 |
| PCBIL01 % bilingual ed 00-01 | 8.96 | 19.9 | 4813 |
| PCFREE01 % free or reduced lunch | 58.809 | 27.5438 | 4813 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | 77.94 | 26.806 | 4813 |
| TOT_EN01 Total enroll 2000-01 | 942.99 | 644.128 | 4813 |
| ELEM01 Elem. school 00-01 | 0.65 | 0.476 | 4813 |
| PCCERT01 00-01 % EL/bil cert teachers incl SB 1979 all lang instruc | 73.6 | 21.761 | 4813 |

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|---------|----------|-------------------|----------------------------|
| 1 | .880(a) | 0.774 | 0.774 | 6.815 |

a Predictors: (Constant), PCCERT01 00-01 % EL/bil cert teachers incl SB 1979 all lang instruc, PCBIL01 % bilingual ed 00-01, TOT_EN01 Total enroll 2000-01, MATH00NP, PCEL01, PCSPAN01 % of EL who are Span. speakers 00-01, ELEM01 Elem. school 00-01, PCFREE01 % free or reduced lunch

Coefficients(a)

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|-----------------------------|------------|---------------------------|---------|-------|
| | B | Std. Error | Beta | | |
| (Constant) | 19.795 | 0.821 | | 24.099 | 0.000 |
| MATH00NP EL studs math nce 99-00 | 0.703 | 0.010 | 0.68 | 69.815 | 0.000 |
| PCEL01 % English Learners | 0.035 | 0.007 | 0.05 | 5.365 | 0.000 |
| PCBIL01 % bilingual ed 00-01 | -0.021 | 0.005 | -0.03 | -3.898 | 0.000 |
| PCFREE01 % free or reduced lunch | -0.067 | 0.006 | -0.13 | -12.099 | 0.000 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | -0.083 | 0.005 | -0.16 | -17.028 | 0.000 |
| TOT_EN01 Total enroll 2000-01 | -0.001 | 0.000 | -0.04 | -4.524 | 0.000 |
| ELEM01 Elem. school 00-01 | 4.983 | 0.290 | 0.17 | 17.158 | 0.000 |
| PCCERT01 00-01 % EL/bil cert teachers incl SB 1979 all lang instruc | 0.001 | 0.005 | 0.00 | 0.215 | 0.830 |

a Dependent Variable: MATH01NP EL studs math nce 01

ENGLISH LEARNERS' LANGUAGE ACHIEVEMENT - % CERTIFIED TEACHERS INCL. SB 1969 OR DISTRICT AUTHORIZATION

Descriptive Statistics

| | Mean | Std. Deviation | N |
|---|--------|----------------|------|
| LANG01NP EL studs language nce 01 | 30.6 | 12.175 | 4788 |
| LANG00NP EL studs language nce 99-00 | 28.9 | 11.661 | 4788 |
| PCEL01 % English Learners | 33.862 | 21.3514 | 4788 |
| PCBIL01 % bilingual ed 00-01 | 8.98 | 19.924 | 4788 |
| PCFREE01 % free or reduced lunch | 58.87 | 27.5291 | 4788 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | 77.93 | 26.833 | 4788 |
| TOT_EN01 Total enroll 2000-01 | 945.03 | 644.496 | 4788 |
| ELEM01 Elem. school 00-01 | 0.65 | 0.476 | 4788 |
| PCCERT01 00-01 % EL/bil cert teachers incl SB 1979 all lang instruc | 73.57 | 21.782 | 4788 |

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|---------|----------|-------------------|----------------------------|
| 1 | .863(a) | 0.744 | 0.744 | 6.16 |

a Predictors: (Constant), PCCERT01 00-01 % EL/bil cert teachers incl SB 1979 all lang instruc, PCBIL01 % bilingual ed 00-01, TOT_EN01 Total enroll 2000-01, PCSPAN01 % of EL who are Span. speakers 00-01, PCEL01, LANG00NP, ELEM01 Elem. school 00-01, PCFREE01 % free or reduced lunch

Coefficients(a)

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|-----------------------------|------------|---------------------------|---------|-------|
| | B | Std. Error | Beta | | |
| (Constant) | 15.283 | 0.721 | | 21.183 | 0.000 |
| LANG00NP EL studs language nce 99-00 | 0.712 | 0.011 | 0.68 | 66.219 | 0.000 |
| PCEL01 % English Learners | 0.040 | 0.006 | 0.07 | 6.723 | 0.000 |
| PCBIL01 % bilingual ed 00-01 | -0.044 | 0.005 | -0.07 | -9.115 | 0.000 |
| PCFREE01 % free or reduced lunch | -0.057 | 0.005 | -0.13 | -11.274 | 0.000 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | -0.053 | 0.004 | -0.12 | -12.610 | 0.000 |
| TOT_EN01 Total enroll 2000-01 | -0.001 | 0.000 | -0.06 | -7.033 | 0.000 |
| ELEM01 Elem. school 00-01 | 3.944 | 0.267 | 0.15 | 14.763 | 0.000 |
| PCCERT01 00-01 % EL/bil cert teachers incl SB 1979 all lang instruc | -0.003 | 0.004 | -0.01 | -0.656 | 0.512 |

a Dependent Variable: LANG01NP

Descriptive Statistics

| | Mean | Std. Deviation | N |
|--|--------|----------------|------|
| READ01NP EL studs reading nce 01 | 23.36 | 11.022 | 4769 |
| READ00NP EL studs reading nce 99-00 | 21.99 | 10.353 | 4769 |
| PCEL01 % English Learners | 33.918 | 21.3495 | 4769 |
| PCBIL01 % bilingual ed 00-01 | 8.99 | 19.926 | 4769 |
| PCFREE01 % free or reduced lunch | 58.93 | 27.4995 | 4769 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | 77.99 | 26.781 | 4769 |
| TOT_EN01 Total enroll 2000-01 | 946.59 | 645.355 | 4769 |
| ELEM01 Elem. school 00-01 | 0.65 | 0.477 | 4769 |
| PCBILC01 00-01 % CTC bil certified teachers primary lang instruc | 6.67 | 14.081 | 4769 |

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|---------|----------|-------------------|----------------------------|
| 1 | .882(a) | 0.778 | 0.777 | 5.203 |

a Predictors: (Constant), PCBILC01 00-01 % CTC bil certified teachers primary lang instruc, READ00NP Reading NCE EL 99-00, PCFREE01 % free or reduced lunch, TOT_EN01 Total enroll 2000-01, PCSPAN01 % of EL who are Span. speakers 00-01, PCEL01, ELEM01 Elem. school 00-01, PCBIL01 % bilingual ed 00-

Coefficients(a)

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|--|-----------------------------|------------|---------------------------|---------|-------|
| | B | Std. Error | Beta | | |
| (Constant) | 10.399 | 0.484 | | 21.478 | 0.000 |
| READ00NP EL studs reading nce 99-00 | 0.756 | 0.010 | 0.71 | 73.151 | 0.000 |
| PCEL01 % English Learners | 0.027 | 0.005 | 0.05 | 5.277 | 0.000 |
| PCBIL01 % bilingual ed 00-01 | -0.037 | 0.006 | -0.07 | -6.092 | 0.000 |
| PCFREE01 % free or reduced lunch | -0.045 | 0.004 | -0.11 | -10.697 | 0.000 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | -0.035 | 0.003 | -0.09 | -10.218 | 0.000 |
| TOT_EN01 Total enroll 2000-01 | -0.001 | 0.000 | -0.07 | -8.700 | 0.000 |
| ELEM01 Elem. school 00-01 | 3.660 | 0.231 | 0.16 | 15.846 | 0.000 |
| PCBILC01 00-01 % CTC bil certified teachers primary lang instruc | -0.006 | 0.009 | -0.01 | -0.721 | 0.471 |

a Dependent Variable: READ01NP EL studs reading nce 01

Descriptive Statistics

| | Mean | Std. Deviation | N |
|--|--------|----------------|------|
| MATH01NP EL studs math nce 01 | 38.43 | 14.339 | 4813 |
| MATH00NP EL studs math nce 99-00 | 36.31 | 13.92 | 4813 |
| PCEL01 % English Learners | 33.794 | 21.3581 | 4813 |
| PCBIL01 % bilingual ed 00-01 | 8.96 | 19.9 | 4813 |
| PCFREE01 % free or reduced lunch | 58.809 | 27.5438 | 4813 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | 77.94 | 26.806 | 4813 |
| TOT_EN01 Total enroll 2000-01 | 942.99 | 644.128 | 4813 |
| ELEM01 Elem. school 00-01 | 0.65 | 0.476 | 4813 |
| PCBILC01 00-01 % CTC bil certified teachers primary lang instruc | 6.64 | 14.053 | 4813 |

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|---------|----------|-------------------|----------------------------|
| 1 | .880(a) | 0.774 | 0.774 | 6.815 |

a Predictors: (Constant), PCBILC01 00-01 % CTC bil certified teachers primary lang instruc, MATH00NP, TOT_EN01 Total enroll 2000-01, PCEL01, PCSPAN01 % of EL who are Span. speakers 00-01, ELEM01 Elem. school 00-01, PCFREE01 % free or reduced lunch, PCBIL01 % bilingual ed 00-01

Coefficients(a)

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|--|-----------------------------|------------|---------------------------|---------|-------|
| | B | Std. Error | Beta | | |
| (Constant) | 19.885 | 0.722 | | 27.555 | 0.000 |
| MATH00NP EL studs math nce 99-00 | 0.703 | 0.010 | 0.68 | 69.803 | 0.000 |
| PCEL01 % English Learners | 0.035 | 0.007 | 0.05 | 5.323 | 0.000 |
| PCBIL01 % bilingual ed 00-01 | -0.022 | 0.008 | -0.03 | -2.781 | 0.005 |
| PCFREE01 % free or reduced lunch | -0.067 | 0.006 | -0.13 | -12.166 | 0.000 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | -0.084 | 0.005 | -0.16 | -17.056 | 0.000 |
| TOT_EN01 Total enroll 2000-01 | -0.001 | 0.000 | -0.04 | -4.536 | 0.000 |
| ELEM01 Elem. school 00-01 | 4.992 | 0.289 | 0.17 | 17.298 | 0.000 |
| PCBILC01 00-01 % CTC bil certified teachers primary lang instruc | 0.003 | 0.011 | 0.00 | 0.263 | 0.793 |

a Dependent Variable: MATH01NP EL studs math nce 01

Descriptive Statistics

| | Mean | Std. Deviation | N |
|--|--------|----------------|------|
| LANG01NP EL studs language nce 01 | 30.6 | 12.175 | 4788 |
| LANG00NP EL studs language nce 99-00 | 28.9 | 11.661 | 4788 |
| PCEL01 % English Learners | 33.862 | 21.3514 | 4788 |
| PCBIL01 % bilingual ed 00-01 | 8.98 | 19.924 | 4788 |
| PCFREE01 % free or reduced lunch | 58.87 | 27.5291 | 4788 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | 77.93 | 26.833 | 4788 |
| TOT_EN01 Total enroll 2000-01 | 945.03 | 644.496 | 4788 |
| ELEM01 Elem. school 00-01 | 0.65 | 0.476 | 4788 |
| PCBILC01 00-01 % CTC bil certified teachers primary lang instruc | 6.66 | 14.075 | 4788 |

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|---------|----------|-------------------|----------------------------|
| 1 | .863(a) | 0.744 | 0.744 | 6.161 |

a Predictors: (Constant), PCBILC01 00-01 % CTC bil certified teachers primary lang instruc, TOT_EN01 Total enroll 2000-01, PCSPAN01 % of EL who are Span. speakers 00-01, PCEL01, LANG00NP, ELEM01 Elem. school 00-01, PCFREE01 % free or reduced lunch, PCBIL01 % bilingual ed 00-01

Coefficients(a)

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|--|-----------------------------|------------|---------------------------|---------|-------|
| | B | Std. Error | Beta | | |
| (Constant) | 15.045 | 0.626 | | 24.026 | 0.000 |
| LANG00NP EL studs language nce 99-00 | 0.712 | 0.011 | 0.68 | 66.212 | 0.000 |
| PCEL01 % English Learners | 0.040 | 0.006 | 0.07 | 6.731 | 0.000 |
| PCBIL01 % bilingual ed 00-01 | -0.043 | 0.007 | -0.07 | -5.884 | 0.000 |
| PCFREE01 % free or reduced lunch | -0.056 | 0.005 | -.13 | -11.265 | 0.000 |
| PCSPAN01 % of EL who are Span. speakers 00-01 | -0.053 | 0.004 | -0.12 | -12.540 | 0.000 |
| TOT_EN01 Total enroll 2000-01 | -0.001 | 0.000 | -0.06 | -7.012 | 0.000 |
| ELEM01 Elem. school 00-01 | 3.922 | 0.265 | 0.15 | 14.777 | 0.000 |
| PCBILC01 00-01 % CTC bil certified teachers primary lang instruc | -0.002 | 0.010 | 0.00 | -0.204 | 0.839 |

a Dependent Variable: LANG01NP

Appendix 5 Current Spending of Public Elementary-Secondary School Systems by State: 2000-01

Source: U.S. Census Bureau, "Public Education Finances 2001," Table 6, Washington, D.C.
This data can be downloaded at <http://www.census.gov/govs/www/school01.html>
(Thousand dollars. Detail may not add to total because of rounding.)

| Geographic area | All functions | | Instruction | | Support services | | All other functions | PP\$ | ADA Used | | | |
|-----------------|---------------|--------------------|-------------------|--------------------|--------------------|-------------------|---------------------|------------|------------|------------|--------|-----------|
| | Total | Salaries and wages | Employee benefits | Total ¹ | Salaries and Wages | Employee benefits | | | | | | |
| United States | 350,628,324 | 224,652,273 | 58,211,293 | 212,746,810 | 153,006,067 | 39,266,922 | 118,679,491 | 64,338,665 | 16,948,944 | 19,202,023 | 7,284 | ##### |
| Alabama | 4,457,139 | 2,806,987 | 763,010 | 2,656,393 | 1,902,115 | 490,224 | 1,374,265 | 746,071 | 214,661 | 426,481 | 5,845 | 762,556 |
| Alaska | 1,228,875 | 724,778 | 203,935 | 701,053 | 464,591 | 129,075 | 476,510 | 238,026 | 69,023 | 48,312 | 9,165 | 134,083 |
| Arizona | 4,510,038 | 2,991,479 | 553,940 | 2,538,936 | 1,939,066 | 353,852 | 1,701,945 | 970,943 | 183,612 | 269,157 | 5,100 | 884,321 |
| Arkansas | 2,647,408 | 1,703,856 | 390,278 | 1,616,883 | 1,156,482 | 257,939 | 877,225 | 486,487 | 116,987 | 153,300 | 5,852 | 452,394 |
| California | 46,392,200 | 28,352,536 | 7,000,380 | 26,669,527 | 19,033,888 | 4,812,906 | 14,607,414 | 8,721,585 | 2,026,669 | 2,570,224 | 7,369 | 6,295,358 |
| Colorado | 4,763,296 | 3,046,777 | 554,695 | 2,709,184 | 2,011,051 | 360,833 | 1,844,900 | 934,862 | 175,509 | 209,212 | 6,515 | 731,128 |
| Connecticut | 5,339,758 | 3,382,116 | 900,239 | 3,360,042 | 2,408,096 | 631,474 | 1,748,476 | 879,308 | 246,018 | 231,240 | 9,236 | 578,146 |
| Delaware | 1,009,456 | 595,569 | 174,307 | 613,955 | 422,202 | 123,411 | 349,525 | 156,029 | 45,762 | 45,976 | 8,603 | 117,338 |
| D.C. | 842,040 | 511,312 | 52,032 | 412,276 | 284,503 | 30,728 | 394,656 | 212,604 | 19,542 | 35,108 | 10,852 | 77,593 |
| Florida | 15,125,748 | 9,584,251 | 2,562,484 | 8,412,975 | 5,932,191 | 1,542,717 | 5,514,993 | 3,160,403 | 885,929 | 1,197,780 | 6,020 | 2,512,583 |
| Georgia | 10,034,803 | 6,551,640 | 2,052,177 | 6,336,556 | 4,521,180 | 1,447,713 | 3,131,291 | 1,791,760 | 549,548 | 566,956 | 6,909 | 1,452,425 |
| Hawaii | 1,250,220 | 795,031 | 172,970 | 732,512 | 530,554 | 117,031 | 412,203 | 209,378 | 43,944 | 105,505 | 6,558 | 190,640 |
| Idaho | 1,380,448 | 890,089 | 259,981 | 853,733 | 610,239 | 174,666 | 461,819 | 255,502 | 76,228 | 64,896 | 5,616 | 245,806 |
| Illinois | 15,684,307 | 9,860,317 | 2,582,533 | 9,317,202 | 6,753,562 | 1,667,824 | 5,702,703 | 2,868,676 | 857,827 | 664,402 | 7,685 | 2,040,899 |
| Indiana | 7,314,050 | 4,373,352 | 1,853,143 | 4,364,661 | 2,944,183 | 1,286,085 | 2,553,481 | 1,220,939 | 533,590 | 395,908 | 7,267 | 1,006,474 |
| Iowa | 3,437,205 | 2,293,383 | 591,708 | 1,994,331 | 1,485,721 | 380,415 | 1,171,278 | 669,469 | 177,099 | 271,596 | 6,912 | 497,281 |
| Kansas | 3,101,780 | 2,043,236 | 405,077 | 1,721,113 | 1,345,908 | 258,251 | 1,159,966 | 640,867 | 134,892 | 220,701 | 6,521 | 475,660 |
| Kentucky | 4,094,691 | 2,727,449 | 668,135 | 2,467,964 | 1,853,151 | 430,591 | 1,372,283 | 784,446 | 134,503 | 254,444 | 6,077 | 673,801 |
| Louisiana | 4,428,757 | 2,892,727 | 758,385 | 2,654,239 | 1,942,010 | 522,196 | 1,457,593 | 816,860 | 193,856 | 316,925 | 5,934 | 746,336 |
| Maine | 1,711,270 | 1,033,809 | 368,204 | 1,118,171 | 735,967 | 253,444 | 513,216 | 254,301 | 78,635 | 79,883 | 8,178 | 209,253 |
| Maryland | 6,909,129 | 4,410,117 | 1,351,988 | 4,172,982 | 2,989,599 | 935,183 | 2,366,854 | 1,338,024 | 391,361 | 369,293 | 8,077 | 855,408 |
| Massachusetts | 9,185,902 | 5,870,561 | 1,475,362 | 6,135,199 | 4,259,099 | 1,116,262 | 2,711,995 | 1,443,705 | 334,363 | 338,708 | 9,038 | 1,016,364 |
| Michigan | 14,362,920 | 8,843,518 | 3,125,007 | 8,136,476 | 5,567,879 | 1,952,311 | 5,430,837 | 2,846,789 | 1,045,913 | 795,607 | 8,029 | 1,788,880 |
| Minnesota | 6,663,567 | 4,266,429 | 1,048,032 | 3,981,906 | 2,928,270 | 729,749 | 2,112,589 | 1,043,532 | 262,990 | 569,072 | 7,447 | 894,799 |
| Mississippi | 2,587,452 | 1,645,669 | 432,233 | 1,548,979 | 1,132,099 | 286,212 | 847,817 | 450,902 | 121,822 | 190,656 | 5,179 | 499,605 |
| Missouri | 6,162,465 | 4,048,682 | 829,794 | 3,659,465 | 2,729,812 | 544,160 | 2,100,767 | 1,140,285 | 244,697 | 402,233 | 6,593 | 934,698 |
| Montana | 1,037,518 | 623,742 | 165,954 | 638,218 | 432,740 | 112,739 | 354,844 | 177,763 | 48,791 | 44,456 | 6,671 | 155,527 |
| Nebraska | 1,991,294 | 1,222,275 | 333,316 | 1,256,013 | 854,350 | 233,738 | 634,842 | 330,620 | 91,314 | 100,439 | 6,946 | 286,682 |
| Nevada | 1,982,433 | 1,294,377 | 375,497 | 1,171,360 | 856,857 | 248,670 | 734,647 | 407,735 | 118,306 | 76,426 | 5,778 | 343,100 |
| New Jersey | 14,892,865 | 9,217,801 | 2,389,625 | 8,782,754 | 6,108,695 | 1,491,068 | 5,499,870 | 2,905,713 | 756,456 | 610,241 | 10,893 | 1,367,196 |
| New Mexico | 1,972,894 | 1,249,454 | 316,640 | 1,096,488 | 811,913 | 201,381 | 761,848 | 395,872 | 102,245 | 114,558 | 6,115 | 322,632 |
| New York | 32,310,196 | 20,765,349 | 5,318,358 | 22,052,316 | 15,739,817 | 4,192,758 | 9,100,764 | 4,504,832 | 1,081,546 | 1,157,116 | 10,922 | 2,958,267 |
| North Carolina | 8,283,698 | 5,735,614 | 1,171,075 | 5,187,906 | 3,960,940 | 792,868 | 2,587,298 | 1,581,428 | 332,888 | 508,494 | 6,368 | 1,300,832 |
| North Dakota | 695,787 | 431,038 | 113,677 | 419,201 | 301,800 | 81,361 | 218,137 | 111,437 | 28,850 | 58,449 | 6,318 | 110,128 |

| Geographic area | All functions | | Instruction | | Support services | | All other functions | PPS | ADA Used | | |
|-----------------|---------------|--------------------|--------------------|--------------------|-------------------|--------------------|---------------------|---------|-----------|--------------------|-------------------|
| | Total | Salaries and wages | Total ¹ | Salaries and Wages | Employee benefits | Total ¹ | | | | Salaries and Wages | Employee benefits |
| | | | | | | | | | | | |
| Ohio | 14,098,429 | 8,920,343 | 8,001,840 | 5,662,608 | 1,560,750 | 5,327,100 | 2,836,952 | 888,507 | 769,489 | 1,880,041 | |
| Oklahoma | 3,923,637 | 2,292,338 | 2,119,420 | 1,541,871 | 327,982 | 1,386,368 | 666,140 | 148,758 | 417,849 | 652,634 | |
| Oregon | 4,149,871 | 2,392,891 | 2,435,402 | 1,560,475 | 594,933 | 1,553,819 | 794,960 | 312,845 | 160,650 | 552,506 | |
| Pennsylvania | 15,033,855 | 9,476,190 | 9,182,658 | 6,699,109 | 1,603,125 | 5,142,302 | 2,519,234 | 646,899 | 708,895 | 1,835,411 | |
| Rhode Island | 1,434,992 | 901,526 | 920,848 | 652,556 | 193,738 | 464,571 | 242,092 | 72,537 | 49,573 | 163,532 | |
| South Carolina | 4,504,086 | 2,917,597 | 2,660,503 | 1,939,175 | 507,156 | 1,545,738 | 841,301 | 229,377 | 297,845 | 685,553 | |
| South Dakota | 783,541 | 492,436 | 471,683 | 341,655 | 76,320 | 272,177 | 135,110 | 32,139 | 39,681 | 129,233 | |
| Tennessee | 5,162,830 | 3,374,571 | 3,282,993 | 2,385,330 | 481,471 | 1,556,508 | 847,252 | 185,376 | 323,329 | 918,326 | |
| Texas | 26,444,020 | 18,301,977 | 15,916,451 | 12,421,605 | 1,726,910 | 9,050,782 | 5,313,987 | 850,200 | 1,476,787 | 4,093,502 | |
| Utah | 2,292,288 | 1,383,483 | 1,438,459 | 973,979 | 356,057 | 653,354 | 366,386 | 135,047 | 200,475 | 495,630 | |
| Vermont | 927,255 | 558,553 | 595,191 | 399,145 | 108,175 | 303,287 | 149,896 | 40,507 | 28,777 | 106,508 | |
| Virginia | 8,386,889 | 5,596,599 | 5,142,049 | 3,777,809 | 1,047,374 | 2,865,861 | 1,695,959 | 465,257 | 378,979 | 1,152,362 | |
| Washington | 6,681,893 | 4,312,810 | 3,984,476 | 2,844,966 | 762,443 | 2,330,122 | 1,375,567 | 390,243 | 367,295 | 1,010,418 | |
| West Virginia | 2,165,301 | 1,302,086 | 1,306,105 | 872,508 | 353,784 | 699,263 | 361,494 | 157,520 | 159,933 | 290,644 | |
| Wisconsin | 7,210,167 | 4,288,224 | 4,434,212 | 3,011,969 | 1,110,236 | 2,495,299 | 1,140,413 | 482,649 | 280,656 | 883,816 | |
| Wyoming | 705,922 | 440,874 | 426,072 | 294,223 | 90,406 | 254,937 | 137,384 | 44,081 | 24,913 | 90,122 | |

¹Includes amounts not shown separately

Appendix 6

Total State Expenditures By Fund Source (EXCLUDES BONDS) (\$ IN MILLIONS)

Source: National Assoc. of State Budget Officers, State Expenditure Report, 2001.

This data can be downloaded at www.nasbo.org/Publications/PDFs/nasbo2001exrep.pdf

| Region/State | Actual Fiscal 2000 | | | Actual Fiscal 2001 | | | Estimated Fiscal 2002 | | |
|---------------------|--------------------|---------------|-----------------------|--------------------|---------------|-----------------------|-----------------------|---------------|-----------------------|
| | State Funds | Federal Funds | State & Federal Funds | State Funds | Federal Funds | State & Federal Funds | State Funds | Federal Funds | State & Federal Funds |
| NEW ENGLAND | | | | | | | | | |
| Connecticut | 13,807 | 3,061 | 16,868 | 14,384 | 3,338 | 17,722 | 14,062 | 3,304 | 17,366 |
| Maine | 3,303 | 1,495 | 4,798 | 3,674 | 1,540 | 5,214 | 4,350 | 2,003 | 6,353 |
| Massachusetts | 21,067 | 5,917 | 26,984 | 23,043 | 6,264 | 29,307 | 23,621 | 6,888 | 30,509 |
| New Hampshire | 2,370 | 974 | 3,344 | 2,388 | 1,000 | 3,388 | 2,577 | 1,070 | 3,647 |
| Rhode Island | 2,999 | 1,283 | 4,282 | 3,316 | 1,429 | 4,745 | 3,545 | 1,592 | 5,137 |
| Vermont | 1,363 | 831 | 2,194 | 1,758 | 866 | 2,624 | 1,889 | 960 | 2,849 |
| MID-ATLANTIC | | | | | | | | | |
| Delaware | 4,095 | 749 | 4,844 | 4,507 | 810 | 5,317 | 4,614 | 835 | 5,449 |
| Maryland | 14,086 | 3,780 | 17,866 | 15,721 | 4,344 | 20,065 | 16,407 | 4,914 | 21,321 |
| New Jersey | 23,206 | 5,596 | 28,802 | 24,745 | 6,458 | 31,203 | 24,789 | 7,797 | 32,586 |
| New York | 49,797 | 21,609 | 71,406 | 54,183 | 23,643 | 77,826 | 56,979 | 26,306 | 83,285 |
| Pennsylvania | 26,879 | 11,024 | 37,903 | 27,919 | 12,000 | 39,919 | 30,430 | 13,919 | 44,349 |
| GREAT LAKES | | | | | | | | | |
| Illinois | 26,741 | 7,405 | 34,146 | 27,895 | 8,188 | 36,083 | 29,590 | 8,273 | 37,863 |
| Indiana | 12,005 | 4,322 | 16,327 | 12,761 | 4,945 | 17,706 | 12,110 | 4,650 | 16,760 |
| Michigan | 26,563 | 7,963 | 34,526 | 28,329 | 8,950 | 37,279 | 27,353 | 10,325 | 37,678 |
| Ohio | 32,839 | 4,800 | 37,639 | 35,792 | 5,400 | 41,192 | 39,677 | 6,965 | 46,642 |
| Wisconsin | 21,149 | 5,037 | 26,186 | 23,042 | 5,050 | 28,092 | 17,763 | 5,481 | 23,244 |
| PLAINS | | | | | | | | | |
| Iowa | 8,806 | 2,769 | 11,575 | 9,306 | 2,982 | 12,288 | 9,616 | 3,073 | 12,689 |
| Kansas | 6,059 | 2,225 | 8,284 | 6,115 | 2,585 | 8,700 | 6,783 | 2,502 | 9,285 |
| Minnesota | 14,406 | 3,685 | 18,091 | 16,034 | 4,489 | 20,523 | 17,053 | 4,510 | 21,563 |
| Missouri | 11,323 | 4,422 | 15,745 | 11,628 | 4,675 | 16,303 | 13,086 | 5,664 | 18,750 |
| Nebraska | 4,297 | 1,503 | 5,800 | 4,472 | 1,586 | 6,058 | 4,798 | 1,756 | 6,554 |
| North Dakota | 1,300 | 917 | 2,217 | 1,395 | 888 | 2,283 | 1,514 | 994 | 2,508 |
| South Dakota | 1,322 | 783 | 2,105 | 1,425 | 923 | 2,348 | 1,509 | 995 | 2,504 |
| SOUTHEAST | | | | | | | | | |
| Alabama | 9,959 | 4,279 | 14,238 | 10,471 | 4,883 | 15,354 | 12,417 | 6,347 | 18,764 |
| Arkansas | 7,505 | 2,508 | 10,013 | 7,911 | 3,141 | 11,052 | 8,505 | 3,560 | 12,065 |
| Florida | 35,029 | 10,701 | 45,730 | 39,340 | 11,480 | 50,820 | 32,842 | 12,672 | 45,514 |
| Georgia | 14,960 | 9,328 | 24,288 | 15,312 | 8,864 | 24,176 | 15,486 | 10,930 | 26,416 |
| Kentucky | 10,984 | 4,772 | 15,756 | 11,731 | 5,118 | 16,849 | 12,540 | 5,277 | 17,817 |
| Louisiana | 10,358 | 4,287 | 14,645 | 11,133 | 4,712 | 15,845 | 11,573 | 5,792 | 17,365 |
| Mississippi | 6,243 | 2,895 | 9,138 | 6,379 | 3,041 | 9,420 | 6,811 | 3,361 | 10,172 |
| North Carolina | 18,695 | 6,942 | 25,637 | 18,695 | 7,574 | 26,269 | 19,365 | 7,066 | 26,431 |
| South Carolina | 8,839 | 4,121 | 12,960 | 9,452 | 4,449 | 13,901 | 9,903 | 4,828 | 14,731 |
| Tennessee | 10,289 | 5,664 | 15,953 | 10,747 | 6,501 | 17,248 | 11,599 | 7,057 | 18,656 |
| Virginia | 18,356 | 3,721 | 22,077 | 20,032 | 3,910 | 23,942 | 20,396 | 4,445 | 24,841 |
| West Virginia | 4,011 | 2,215 | 6,226 | 4,504 | 2,650 | 7,154 | 5,134 | 2,846 | 7,980 |
| SOUTHWEST | | | | | | | | | |
| Arizona | 11,570 | 3,545 | 15,115 | 13,307 | 3,751 | 17,058 | 12,155 | 4,276 | 16,431 |
| New Mexico | 6,144 | 2,753 | 8,897 | 6,760 | 3,437 | 10,197 | 6,668 | 3,188 | 9,856 |

| Region/State | Actual Fiscal 2000 | | | Actual Fiscal 2001 | | | Estimated Fiscal 2002 | | |
|-----------------------|--------------------|----------------|-----------------------|--------------------|----------------|-----------------------|-----------------------|----------------|-----------------------|
| | State Funds | Federal Funds | State & Federal Funds | State Funds | Federal Funds | State & Federal Funds | State Funds | Federal Funds | State & Federal Funds |
| Oklahoma | 7,818 | 2,822 | 10,640 | 8,563 | 3,235 | 11,798 | 9,030 | 4,007 | 13,037 |
| Texas | 34,991 | 14,399 | 49,390 | 37,082 | 15,274 | 52,356 | 39,274 | 15,309 | 54,583 |
| ROCKY MOUNTAIN | | | | | | | | | |
| Colorado | 8,658 | 2,470 | 11,128 | 9,630 | 2,634 | 12,264 | 10,506 | 2,785 | 13,291 |
| Idaho | 2,531 | 1,099 | 3,630 | 2,700 | 1,279 | 3,979 | 3,046 | 1,485 | 4,531 |
| Montana | 1,759 | 1,027 | 2,786 | 1,953 | 1,151 | 3,104 | 2,081 | 1,548 | 3,629 |
| Utah | 4,839 | 1,530 | 6,369 | 5,332 | 1,630 | 6,962 | 5,692 | 1,649 | 7,341 |
| Wyoming | 1,360 | 234 | 1,594 | 1,281 | 265 | 1,546 | 1,297 | 277 | 1,574 |
| FAR WEST | | | | | | | | | |
| Alaska | | | | | | | | | |
| California | 82,281 | 37,303 | 119,584 | 92,025 | 41,273 | 133,298 | 98,321 | 46,516 | 144,837 |
| Hawaii | 5,641 | 1,017 | 6,658 | 5,877 | 1,087 | 6,964 | 5,728 | 1,088 | 6,816 |
| Nevada | 3,497 | 1,052 | 4,549 | 3,567 | 1,143 | 4,710 | 3,685 | 1,289 | 4,974 |
| Oregon | 13,397 | 3,160 | 16,557 | 13,580 | 3,453 | 17,033 | 14,712 | 3,741 | 18,453 |
| Washington | 15,386 | 5,323 | 20,709 | 16,509 | 5,732 | 22,241 | 15,514 | 6,399 | 21,913 |
| TOTAL | 684,882 | 241,317 | 926,199 | 737,705 | 264,020 | 1,001,725 | 758,395 | 292,514 | 1,050,909 |

Appendix 7
Education Week
Items in Assessment of Education Quality 2003

| Standards and Accountability | |
|--|--|
| STANDARDS | |
| State has adopted standards in core subjects (2002) | |
| State has clear, specific, and grounded standards in content (2002) | English/ language arts |
| | Mathematics |
| | Science |
| | Social studies/history |
| State has a regular timeline for revising standards (2002) | |
| Types of test items state uses to measure student performance (2002-03) | |
| Multiple-choice | |
| Short-answer | |
| Extended response in English | |
| Extended response in other subject(s) | |
| Portfolio | |
| Subjects in which state uses criterion-referenced assessments aligned to state standards (2002-03) | |
| English/language arts | |
| Mathematics | |
| Science | |
| Social studies/history | |
| State criterion-referenced tests have undergone an external alignment review (2002) | |
| State participated in the National Assessment of Educational Progress (2002) | |
| State holds schools accountable for performance (2002-03) | |
| State requires school-level report cards | |
| School report cards include disaggregated student-performance data | by race |
| | by poverty |
| | by LEP students |
| | by special ed./disabled students |
| High school report cards include disaggregated graduation rates | |
| State has statewide student-identification system | |
| State assigns ratings to all schools or identifies low-performing schools | |
| Number of schools identified as low-performing by state (2001-02) | |
| Information state uses to evaluate schools | Student test scores only |
| | Test scores and other information |
| | Site visits or reviews |
| | Test scores of specific student subgroups |
| State provides assistance to low-performing schools | |
| State accountability system includes sanctions | |
| Sanctions included in state's school accountability system | School closure |
| | Reconstitution |
| | Reconstituting schools as charters |
| | Permitting student transfers |
| | Turning over schools to private management |
| Withholding funds | |
| State provides rewards to high-performing or improved schools | |
| REMEDIAL ACTION | |
| Promotion contingent upon performance on statewide exams (2002) | |
| Graduation contingent upon statewide exit or end-of-course exams (2002) | |
| State offers alternative route for students who fail exit or end-of-course exams (2002) | |
| Exit or end-of-course exams are based on state 10th grade standards or higher (2002) | |
| State requires remediation for students failing promotion or end-of-course exams (2002) | |
| State finances remediation for students failing promotion or end-of-course exams (2002) | |

| Improving Teacher Quality |
|--|
| State requires written tests in basic skills for beginning-teacher license (2002) |
| State requires written tests in subject knowledge for beginning-teacher license (2002) |
| State requires written tests in subject-specific pedagogy for beginning-teacher license (2002) |
| State requires performance assessment for second stage of certification by local team evaluation (2002) |
| State requires state performance assessment for second stage of certification with classroom observation (2002) |
| State requires state performance assessment for second stage of certification with videotaped lesson (2002) |
| State requires state performance assessment for second stage of certification with portfolio (2002) |
| State requires teacher evaluations to be tied to student achievement |
| State provides licensure incentives to earn National Board certification (2002) |
| State provides financial incentives to earn National Board certification (2002) |
| Number of National Board-certified teachers (2002) |
| Percent of secondary teachers who majored in the subject they teach (2000) |
| Minimum degree/coursework required in the subject area taught for all high school teachers (2002) |
| Minimum degree/coursework required in the subject area taught for all middle school teachers (2002) |
| State discourages out-of-field teaching and requires subject-area endorsement for middle school teachers (2002) |
| State discourages out-of-field teaching and provides parent notification of out-of-field or uncertified teachers (2002) |
| State requires and finances induction for all new teachers (2002) |
| State encourages or supports ongoing professional development for all teachers by setting aside time for professional development (2002) |
| State encourages or supports ongoing professional development for teachers by financing professional development (2002) |
| State encourages or supports ongoing professional development for teachers by financing professional development for all districts (2002) |
| Minimum weeks state requires for student-teaching during teacher training (2002) |
| Minimum hours state requires for other kinds of clinical experiences during teacher training (2002) |
| State holds teacher-training programs accountable by publishing pass rates/rankings of teacher education institutions (2002) |
| State holds teacher-training programs accountable for performance of graduates in classroom setting (2002) |
| State holds teacher-training programs accountable by identifying low-performing teacher-training programs (2002) |
| Number of teacher-training programs identified as low-performing (2001-02) |
| Percent of graduates from NCATE-accredited teacher education programs (2001) |
| Average teacher salaries, adjusted for the cost of living (starting salary) (2001) |
| Average teacher salaries, adjusted for cost of living (all teachers) (2001) |

| School Climate | |
|--|---|
| STATUS BY GRADE | |
| Percent of 8th graders in schools where a school official reports that the following are not problems or | absenteeism |
| | tardiness |
| | classroom misbehavior |
| State surveys teachers, parents, and/or students about school conditions (2002) | |
| State requires school report cards to include school safety information (2002) | |
| State has enacted a bullying/harassment-prevention program or legislation (2002) | |
| State has enacted legislation to enforce specific penalties for incidents of school violence (2002) | |
| Percent of students reporting that they feel very or somewhat safe in | 4th graders |
| | 8th graders |
| Percent of students in schools where a school official reports that | 4th grade |
| | 8th grade |
| Percent of high school students who... | felt too unsafe to go to school during the past 30 days (2001) |
| | carried a weapon on school property during the past 30 days (2001) |
| | were threatened or injured with a weapon on school property in the past year (2001) |
| | were in a physical fight on school property in the past year (2001) |
| State requires school report cards to include information on parent involvement (2002) | |
| Percent of students in schools where a school official reports that | 4th grade |
| | 8th grade |
| Percent of students in schools where a school official reports that | 4th grade |
| | 8th grade |
| State has a public school open-enrollment program (2002) | |
| State law allows charter schools (2002) | |
| Strength of charter school law (2001) | |
| Number of charter schools (2002) | |
| State requires school report cards to include information on class size (2002) | |
| State has implemented a class-size-reduction program and/or limits class size by statute (2002) | |
| Average class size for self-contained classes in elementary schools (2000) | |
| Percent of students in elementary schools with 350 or fewer students (2001) | |
| Percent of students in middle schools with 800 or fewer students (2001) | |
| Percent of students in high schools with 900 or fewer students (2001) | |
| State tracks condition of all school facilities (2002) | |
| State provides grants/debt service for capital outlay or construction (2002) | |
| State funding dedicated to capital outlay or construction for FY 2003 | |

| RESOURCES: ADEQUACY |
|---|
| 10% OF STATE |
| Education spending per student, adjusted for regional cost differences (2002)(State average) |
| Percent of U.S. average |
| Percent change from 2001 |
| Percent of students in districts with per-pupil expenditures at or above the U.S. average (\$5,594) |
| Adequacy Index (2000) |
| Percent of total taxable resources spent on education (2000) |
| Average annual rate of change in expenditures per pupil, adjusted for inflation (1999-2001) |
| Percent of students in districts with per-pupil expenditures at or above National median (\$5,385) (2000) |
| Percent of students in districts with per-pupil expenditures at or above \$6,000 (2000) |
| Percent of students in districts with per-pupil expenditures at or above \$7,000 (2000) |
| Unadjusted education spending per student (2002) |
| Percent of annual education expenditures devoted to instruction (2000) |
| Instructional dollars per student (2000) |
| Teachers as a percentage of total staff (2001) |
| Percentage of education expenditures devoted to teachers (2001) |
| RESOURCES: EQUITY |
| 50% OF STATE |
| State equalization effort (2000): Targeting score |
| State equalization effort (2000): State share of funding |
| Wealth-neutrality score (2000) |
| McLoone Index (2000) |
| Coefficient of variation (2000) |
| Restricted range (2000) |
| Restricted-range ratio (2000) |
| Average state funding per pupil (2000) |
| Average state and local funding per pupil (2000) |
| Implicit foundation level (2000) |