

**STATE OF COLORADO DISTRICT COURT
CITY AND COUNTY OF DENVER**

Giardino, et al., Plaintiffs

vs.

Colorado State Board of
Education, et al.,
Defendants.

Report by: James W. Guthrie
Management, Analysis & Planning, Inc.

Date: January 28, 2000

I submit this report on the instructional adequacy of school facilities in two Colorado school districts (Elizabeth and Pueblo City).

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I. INTRODUCTION

Seven school districts have brought suit against the Colorado State Board of Education and other defendants, alleging that “the current statutory scheme for financing education has created a system where some students attend schools not fit for habitation, while other students in neighboring school districts attend schools with virtually unlimited educational facilities.” Plaintiff school districts claim they are unable to provide adequate facilities under the existing funding system, and have asked the Court to require the State to designate a permanent source of funding for capital requirements which is separate from the operating funding.

This report summarizes my opinions and findings on the instructional adequacy of selected plaintiff district school facilities and the school facilities of statistically matched comparison districts. This endeavor should not be misconstrued as trumpeting physical facilities as a powerful variable in explaining student achievement. Students’ inherent abilities and personal motivation, influence of parents, peers, and neighborhoods, and the capacity of school personnel, school cultures and incentive systems are all assumed to be more likely influences on performance than facilities. No definitive research exists to display the relationship between facilities and student performance.

I reserve the right to modify, expand, or revise this report based on any additional information that becomes available between the date of this report and my testimony at trial.

The findings in this report are based on the particular circumstances of this suit. Distribution of this report is limited to parties directly involved with this action.

II. OPINION

1. Contrasted with social and economic variables, such as a student’s community, family circumstances, and powerful in-school operational dimensions such as teachers’ capability and class size, the quality of a school’s physical facilities explain a remarkably unimportant percentage of students’ academic performance.
2. Colorado’s present statutory arrangements are sufficient to ensure that plaintiff school districts can construct and maintain safe and instructionally-adequate facilities. To be sure, Colorado displays variation in the size and quality of school buildings. However, this variation is a product of the state’s historical adherence to a strategy of widescale local discretion in school district decision-making.

3. Colorado's arrangements for financing school construction are consistent with provisions in other states.
4. Observed facilities in the two visited plaintiff districts were adequate or in the process of becoming adequate due to new construction. Of the eleven plaintiff schools visited in the Pueblo City and Elizabeth districts, nine were rated instructionally adequate and two were rated inadequate. However, both of the inadequate facilities are in Elizabeth, a district which is experiencing dramatic enrollment growth and has new facilities currently under construction. These new facilities will eliminate the inadequacy ratings beginning in the 2000-2001 academic year.

III. BASES FOR OPINION

Opinion 1. There is no evidence that facilities are directly related to student achievement.

A review of the literature on the relationship between school facilities and student achievement revealed that while several researchers claim facilities have a profound and important influence on student achievement, their studies contain serious methodological flaws and their conclusions are groundless (see Exhibit 1 for a bibliography). No sound, convincing research exists to document a relationship between facility quality and achievement. Even if such a relationship does exist, the amount of influence that facilities could have on achievement is quite small compared to socioeconomic background characteristics of students and instructional features. In addition, to the best of my knowledge there is no research on the cost-effectiveness of investing money in school facilities as an avenue to higher achievement.

Opinion 2: Present statutory arrangements in Colorado are sufficient to ensure that plaintiff school districts can construct and maintain safe and instructionally-adequate facilities.

MAP obtained estimates of what it would cost to construct new facilities or repair existing ones in each of the plaintiff districts. We then compared these cost estimates to the amount of revenue each district could raise through bonds and override revenues, and found that all districts with the exception of Sanford have sufficient access to funding to meet their facility needs. Although Sanford could not raise sufficient funds under the debt and override limits, it is able to meet its construction funding needs by reliance on other mechanisms available to it.

Opinion 3: Colorado's arrangements for financing school construction are consistent with provisions in the majority of other states.

Different states approach the funding of facilities in different ways. Thirteen states provide no capital outlay funding (Idaho, Illinois, Iowa, Louisiana, Michigan, Missouri, Montana, Nevada, North Dakota, Oklahoma, Oregon, South Dakota, and Virginia), though several of these states do provide some monies for debt service or offer low interest loans.

Seven states (including Colorado) provide capital outlay through their basic support program: Alabama, Arizona, Colorado, Kansas, Kentucky, Texas, and Wisconsin. Colorado is included here since state law requires that a certain amount per pupil from total program funding go into each districts' capital reserve fund.

Thirty states provide some state funding for capital projects by means other than their basic support programs. Amounts, mechanisms, and percent of funding from the state varies hugely.

A 1995 congressional Government Accounting Office (GAO) study reported that 40 states have ongoing assistance programs, ranging from \$6 to \$2,000 per student. Thirteen of these states have established comprehensive facilities programs. The GAO report found that overall most states do not play a major role in addressing facilities funding, and that state philosophy on the issue varies considerably. As in Colorado, many states report that school facilities are primarily a matter of local responsibility.

Opinion 4: Observed facilities in the two visited plaintiff districts were adequate or in the process of becoming adequate due to new construction.

In order to assess the instructional adequacy of plaintiff district schools, MAP staff visited schools in each plaintiff district and rated the facilities. To evaluate the plaintiff districts within an appropriate context, we established a comparison sample of school districts. A comparison district was statistically selected for each plaintiff district based on similarities in enrollment, assessed value per pupil, and percent of pupils at risk, using 1998 data provided by the Colorado Department of Education. Enrollment and assessed value per pupil were weighted more heavily (45% each) than percent of pupils at risk (10%) in the selection process. Exhibit 2 displays the comparison districts.

MAP staff visited each plaintiff district along with its comparison district. At the time visits were undertaken, evaluators were unaware of which comparison district matched which plaintiff district; in fact, the two evaluators were for the most part unaware of which districts were plaintiff districts.

All visits were conducted by either James W. Guthrie or James R. Smith. This report addresses those visits made by Guthrie, who went to Ault, Elizabeth, Greeley, Platte Canyon, and Pueblo City school districts. Visits took place between October 25 and 29, 1999. At each site, the evaluator toured each of the school buildings, accompanied by a district official. The evaluator asked to see all the facilities where instruction took place, and invited the school representative to point out any areas thought to be inadequate. Each building visit lasted approximately 1.5 hours. When practical, all school sites in the district were visited. If the size of the district prohibited the review of every building, a subset of elementary, middle, and high schools was chosen.

The instructional adequacy of school buildings was evaluated using a rating form developed by MAP for the purposes of this study (see Exhibit 3). Buildings were rated as either "adequate," "adequate with changes," or "inadequate." The focus of these appraisals was the instructional adequacy of school facilities visited. No claim is made here regarding the structural soundness or physical integrity of buildings, or the quality of instruction provided. This appraisal concentrates on school physical facilities, structural configurations, and technical arrangements that bear logical links to instruction and student overall well being. Specifically, the appraisal criteria involved the presence and condition of the following:

1. Classroom and laboratory instructional spaces, teacher workspaces, and professional meeting and work areas;
2. Specialized schooling facilities such as libraries and media centers, gymnasias and other athletic facilities (e.g., playing fields, outdoor courts, and locker rooms), auditoriums and public meeting spaces, cafeterias, swimming pools, administrative offices and specialized spaces for health care, tutorials, and itinerant teachers and other professionals;
3. Amenities such as student and staff restrooms, day lockers, specialized play areas for preschool students and kindergarten students, and public and faculty parking;
4. Technical arrangements such as computer availability, Internet access, and facilities for handicapped students;
5. Configuration considerations such as the logic and convenience of a school's overall floor plan and layout; and
6. Safety issues such as the availability and working condition of an intercom system or other means of communication in the event of an emergency.

An individual school could be judged instructionally inadequate for one or a combination of three reasons. It could (1) have an insufficient presence of the above-mentioned facilities and arrangements; (2) facilities and arrangements, though present, could be in such poor condition that they present impediments to instruction; and/or (3) the facility could simply be too small for the number of students served.

Judgments regarding overall size were made in terms of gross square feet of interior space divided by number of enrolled students. Criteria for adequate square footage were deduced from a synthesis of facility standards taken from 13 states and recommendations of the Council of Educational Facility Planners International. Enrollment figures were reported by the principals of the Colorado schools visited and were confirmed by data from the Colorado Department of Education.

Building Evaluations

Elizabeth

This is an ex-urban district on slightly rolling hills southeast of Denver. Its recent growth is a function of developers using the land as an attraction for those employed in or close to Denver. Students appear principally to be middle class.

The district has five schools presently and a new high school currently under construction. Three of the five schools are clearly adequate for instructional purposes. Singing Hills, a new elementary school constructed in 1997, is state of the art and would be the envy of most any school district in the nation. The other elementary school, Running Creek, is twelve years old but well equipped and well maintained. Each of these schools exceeds the standard gross square footage per pupil. The district's single high school was constructed in 1978, but has been consistently well maintained and expanded at regular intervals. High school gross square footage is on the low end of acceptable. However, the soon-to-be-opened new high school will alleviate this problem.

Two of the district's currently used buildings are instructionally inadequate, principally because of over crowding, but secondarily because of building age. The most serious problem is Elizabeth Middle School. This structure, once the district's only school building serving all grades, was constructed in 1920. It has been expanded twice, the most recent addition having been made in 1971. It enrolls 565, 6th, 7th, and 8th grade students. Its per pupil gross square footage is adequate. However, lack of maintenance has created a borderline unsafe building (the top floor is condemned and cannot be used for instruction). Also, the building has far too few specialized facilities for a modern school. For example, modern laboratory science is a virtual impossibility.

Elizabeth Alternative High School serves 45 secondary school students who apply to attend the school. It is housed in a complex of portable buildings located near the district's central office. These building are too small for the students enrolled. There are no specialized classrooms such as laboratories. There is no library, cafeteria, or gymnasium. There simply are no amenities. Finally, the building is unsafe for protecting students in a tornado.

This unsatisfactory situation is on the verge of being substantially relieved. The district is now constructing a new 1000-student high school. When this is completed for the forthcoming academic year, the existing Elizabeth High School will be adapted for middle school use, and the safe portion of the existing middle school will be adapted for the alternative high school.

Comparison District: Platte Canyon was the district statistically selected as the comparison for Elizabeth. This is a small district consisting of one elementary, one

middle school, and one high school, all three of which were visited and judged to be instructionally adequate. No administrator claimed that any school was inadequate or unsafe. Like Elizabeth, Platte Canyon is currently in the midst of a new construction project that will vastly add to the high school and middle school. Both districts succeeded in passing school facility bonds, and Platte Canyon also passed override mills. Both districts currently have ample potential access to sufficient revenues to meet their construction needs, since their bonded debt limit is over \$13 million (in Elizabeth's case, it is almost \$15 million).

Pueblo City

This school district is located in Pueblo County, approximately two hours south of Denver. The city was once a major iron and steel manufacturing center. This activity is now substantially reduced and only recently has the general area been experiencing an economic resurgence.

The district is a large one, approximately 18,000 students. It operates 21 elementary schools, 7 middle schools, 4 high schools, and four other specialized schools including a K-12 Charter school.

Three elementary schools, two middle schools, and one high school were visited. All six of these institutions were judged to have instructionally adequate facilities. No administrator interviewed specified any instructionally deficient or unsafe school components.

The three elementary schools visited were Bessemer, Fountain, and Sunset Park. Of these, Bessemer is by far the oldest, having been constructed originally in 1931 (with several subsequent additions). The other two were constructed respectively in 1971 and 1959. All three possess sufficient per pupil square footage to place them in the mid to high range of facility standards for elementary schools. All contained a number of specialized rooms such as gymnasias and cafeterias. In no instance could these schools be declared luxurious or even state of the art. Nevertheless, they were all more than adequate for the conduct of modern day instruction.

Heaton and Freed were the two middle schools visited in Pueblo. Each of these is on the high end of per pupil square footage criteria. Heaton was constructed in 1961 and Freed in 1954. Each is well maintained. Each is replete with a spectrum of

specialized rooms for shop courses, athletics, etc. Again, nothing is fancy here, but the buildings were adequate for instructional purposes.

Pueblo's South High School was also visited. This sprawling one-story structure was constructed in 1959. It has a great deal of per pupil square foot space and has many modern instructional features. For example, the school has centralized television broadcasting capacity. The school has ample athletic facilities and a swimming pool. In its appearance and tone, the school seems more like a community college than a conventional high school.

Comparison District: Greeley was selected as the comparison district for Pueblo City. Three Greeley elementary schools, two middle (one was a junior high) schools, and a senior high school were visited. All six institutions' facilities were instructionally adequate. No school administrator encountered in visiting these schools claimed that any school was instructionally inadequate or unsafe. All of the visited schools were well maintained, and although the high school was crowded it is an imposing institution boasting a horticultural program with its own greenhouse, an agricultural shop program with an enormous variety of tools, a National Football League-style student and athletic weight room, and a new auditorium that outshines what is available in most municipalities.

It appears that facilities in both Pueblo City and Greeley range from basic to luxurious, but all were adequate to meet instructional needs. Both districts have access to sufficient funds to build state-of-the-art facilities for all their students if they so choose, since their bonded debt limit is around \$110 million. If facilities in Pueblo City are not quite as luxurious as those in Greeley, it appears due to Greeley's willingness to incur debt. As of 1998, Greeley had bonded indebtedness of \$72 million, while Pueblo City had no bonded debt. This reflects the local choice of the voters.

IV. DATA AND INFORMATION SOURCES

The opinions presented here are based on our site visits to the school districts and our previous experience with educational facilities. Enrollment numbers were obtained from the Colorado Department of Education, and gross square feet was obtained from CTL. Financial data on the revenue-raising ability of districts and on revenues and expenditures came from the Colorado Department of Education. Estimates of structural repairs are from CTL. A bibliography of studies on the relationship between school facilities and student achievement is provided in Exhibit 1. Information on capital construction funding in other states came from the *Public School Finance Programs of the United States and Canada 1993-94*, Center for the Study of the States; and the November 1995 GAO report *School Facilities: States' Financial and Technical Support Varies*.

V. QUALIFICATIONS

I am currently the Director of the Peabody Center for Education Policy at Vanderbilt University, as well as a partner at Management Analysis and Planning, Inc. Prior to that I served as Director of Policy Analysis for California Education (PACE) for 11 years, and was a professor at the University of California, Berkeley for 27 years. I have been a public school teacher, state education department official, federal government cabinet special assistant, education specialist for the United States Senate, and an elected local school board member. I have also served as a consultant to agencies such as the National Center for Education Statistics (NCES) and the National Assessment of Educational Progress (NAEP), as well as to international agencies and governments. In addition, I have consulted for numerous state governments, and provided expert witness testimony and consultant services for over 25 court cases involving education issues. I have published ten books on school finance and administration, and written over a hundred professional and scholarly articles.

VI. PUBLICATIONS WITHIN THE PRECEDING TEN YEARS

I have published a variety of books and journal articles in the last ten years. A list of my publications is included in Appendix B.

VII. CASE TESTIMONY WITHIN THE PRECEDING FOUR YEARS

Bradley et al v. Maryland State Board of Education
Campbell Co. v. Wyoming
Roosevelt v. Keegan (Arizona)
Committee for Fiscal Equity v. State of New York

VIII. COMPENSATION FOR THE STUDY AND TESTIMONY

I receive compensation based on an hourly billing rate of \$185.

James W. Guthrie

Date

APPENDIX A: EXHIBITS

EXHIBIT 1

BIBLIOGRAPHY:

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Exhibit 2: Plaintiff and Comparison Districts

County	District	Funded Pupil Count	% At Risk	Assessed Valuation Per Pupil
Pueblo	Pueblo City	17,172	49%	33,896
Weld	Greeley	14,067	40%	36,348
Las Animas	Aguilar	171	48%	52,755
Saguache	Mountain Valley	186	46%	47,878
Conejos	Sanford	351	59%	9,925
Otero	Manzanola	277	55%	16,500
Bent	Las Animas	730	57%	36,504
Conejos	South Conejos	449	56%	27,438
Lake	Lake	1,219	36%	45,685
Weld	Ault-Highland	885	37%	49,734
Elbert	Elizabeth	2,422	3%	32,130
Park	Platte Canyon	1,529	8%	46,211
Costilla	Centennial	369	68%	67,378
Costilla	Sierra Grande	340	64%	103,151

Plaintiff districts are in bold.

EXHIBIT 3: Facility Rating Instrument and Instructions

APPENDIX C: RESUME

APPENDIX B: Publications within the Preceding Ten Years

Books

Educational Administration and Policy: Effective Leadership for America's Schools (with Rodney J. Reed). Englewood Cliffs, NJ: Prentice-Hall, Inc., 1986. (Second edition 1991.)

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