

**Essential Learning Conditions for California Youth:
Educational Facilities**

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Belonging to a place, feeling part of it, gives many people a positive sensation of security, yet for others it may be oppressive and restrictive. Whether we know places with a deep affection or merely as stopping points in our passage through the world, they are set apart in time and space because they have distinctive meanings for us (Seamon & Mugerauer, 1985, p. 27).

This report deals with the issue of where our youths' learning and our teachers' instructional processes take place. Responding to calls from local, state and national officials regarding student achievement in our nation requires that we examine those places where learning and instruction are occurring. Today's school buildings function to shelter and support a variety of learning experiences for students and a variety of work experiences for administrators, teachers, and support staff (Castaldi, 1994).

Current Educational Facilities Conditions

Today, educational facilities are crowded, old, and in need of repair and modernization. There are several reasons for this. First, student enrollment at the national level has increased every year since 1984 and is expected to result in a 26 percent increase in the number of children in high school between 1988 and 2008 (National Center for Education Statistics [NCES], 1998). It is estimated that grades 7-8 will increase by 91,957 pupils or about 18,391 pupils per year; grades 9-12 will increase by 188,264 or about 37,653 pupils per year. Nationwide, 22 percent of all public schools are overcrowded which means enrollments are at least 5 percent above their

designed capacity (NCES, 2001). Large schools are more likely to be overcrowded. Schools with high minority are more likely to be overcrowded than schools with low minority enrollment. Overcrowded schools are also more likely to be inadequate. In California, increased enrollments and class size reduction have led to a high proportion of overcrowded schools with similar characteristics as reported nationwide.

Second, the average age of the main instructional buildings of the nation's public schools is about 40 years (NCES, 2000). In California, estimates show that 60 percent of the classrooms in the state are over 25 years old (California Department of Education [CDE], 2001).

Third, the major barrier for schools to improve their facilities is cost. The NCES (2000) noted that three quarters of schools reported needing some money for repairs, renovations, and modernizations to improve their on-site buildings. The total amount was estimated to be about \$127 billion. The average cost per school was calculated to be about \$2.2 million and the average cost per student about \$3800. Approximately 11 million students enrolled in these schools reported at least one type of on-site building in less than adequate condition. In California, a school built in compliance with site and building regulations costs an average of \$12.5 million if it is an elementary school, \$22.1 million if it is a middle school, and \$52.1 million if it is a high school (Little Hoover Commission, 2001). School districts that already own sites, would spend about \$10,036,943 for an elementary school which is about \$16,728 per student. A middle

school would cost about \$17,692,187 or about \$17,692 per student, and a high school would cost about \$41,690,683 or about \$23,161 per student (CDE, 2001).

In brief, the three major factors contributing to the current conditions of educational facilities in California are: the increased demand for space attributed to enrollment increases due to demographic changes and class size reduction, the average age of school facilities of between 25 and 40 years and finally, the cost of building new schools, or renovating, repairing, or modernizing existing buildings. Most school districts are unable to keep up with the demands.

Determining Adequacy of Educational Facilities

Disparities in school buildings were ignored until 1984. Several court cases have served to more specifically define adequacy of educational facilities. The West Virginia Case, Pauley vs. Bailey (Thompson, Wood & Honeyman, 1984), The Tennessee Case, Tennessee Small School Systems vs. McWerter, 1993, The Arizona Case, Roosevelt Elementary School District 66 vs. Bishop, 1994, and the Ohio Case, DeRolph vs. State, 1997 are some cases that have served to establish definitions and criteria by which to determine adequacy of educational facilities.

Kowalski (2002) presented three ways in which adequacy of facilities is sometimes defined and measured: the use of inputs, such as minimum requirements and cost and quality; the examination of process such as the appropriateness of a particular space or place for the designated activity; and the use of outputs as, for example, the performance gains after students have been educated in improved facilities. Other researchers (Swanson & King, 1991) have based

adequacy on standards of sufficiency focusing on construction and program. A review of the literature shows that the usual criteria for adequacy are based on judgements regarding aesthetics, flexibility, adaptability, suitable size, operational efficiency, health and safety, durability and accessibility.

Who Determines Adequacy?

In California, the state delegates responsibility for the operation and maintenance of educational facilities to the local school boards. Local school boards are given the responsibility for compliance with building codes, local ordinances, federal and state environmental regulations, and providing and maintaining facilities to meet the codes. For example, some of the specific areas for which local school boards are responsible are: septic systems and water supplies, health and safety, cleanliness, and repair. Complying with the codes that pertain to these areas requires contact and interaction with a variety of local, district, county, state and federal agencies.

The state's participation in determining the adequacy of educational facilities is when new schools are being constructed. Several agencies provide a variety of regulatory, fiscal, and technical services. The Office of Public School Construction (OPSC) is primarily responsible for administering the monetary resources available to the State Allocation Board (SAB) from the various sources. OPSC provides staff assistance to districts regarding the law, regulations, policies, and programs which are available for school construction or modernization. It also provides information to customers that includes regulations, guidebooks, and forms for the

programs OPSC administers. The OPSC staff processes applications and prepares and distributes handbooks and other technical information to school districts. The OPSC also advises and makes recommendations to the SAB regarding the use of bond funds. The Office is also called upon to design and develop efficient policies and apportionment processes for the approval of the SAB. It prepares regulations, tracks school facilities legislation, performs site inspections, and conducts or participates in training and other school facilities seminars.

Between 1998 and 2001, OPSC administered the “School Facility Program (SFP) and the SAB apportioned over \$5.7 billion in state matching funds to school districts for new construction and modernization projects” (SAB/OPSC, 2001, p. v). This funding assisted in “housing 263,000 children in new classrooms and modernizing older classrooms for 920,000 children” (Parks, 2001, p. v).

The CDE is responsible for ensuring that the educational facility is built to meet educational criteria. For example, the CDE participates in the site selection of the new building. It also participates in checking that school spaces are appropriately allocated to the specific activities or instruction that is to take place. The Office of the State Architect (OSA) is responsible for approving the design of the educational facility.

Finally, other agencies such as the Fire Marshall participate in regulating and approving electrical, new technologies, engineering, and other aspects of the building and grounds to ensure safety and health. New buildings are, thus, presumed to meet the criteria for adequacy.

As stated earlier, the regulatory and standards based criteria oversight for maintenance of existing buildings is carried out by the local school boards. Maintenance is an ongoing activity meant to ensure the educational function and environment of school buildings remain efficient (Castaldi, 1994). Since the CDE has no regulatory responsibility in the maintenance of facilities there is no one system that ascertains disparities among schools.

Attempts to Correct Disparities Among Schools

In providing adequate educational facilities the state has two separate interests in school facilities. The first is to ensure that all new facilities are physically safe and conducive to learning and the second is to help pay for these new schools and monitor that investment. As shown above, the state is successful in seeing that new schools are physically safe and conducive to learning through the various state agencies and their regulatory, fiscal, and technical means. The state is less successful in helping to pay for new schools because the demand is always greater than the amount of available funds. The state is not successful in monitoring the initial investment of new schools nor existing school buildings. The major reason is because the responsibility is delegated to the local districts and the partnership with the state is not specified.

The fiscal Crisis Management Assistance Team (FCMAT) recommended that the first step in monitoring the condition of school facilities is to inventory the state's educational facilities. Their explanation is that the state could benefit by an inventory of facilities and sites in order to make properly informed decisions regarding the funding relative to construction and

modernization. The Little Hoover Commission (2000) suggested creating an inventory through the OPSC. Noting that Proposition 1A made a down payment on facility needs in California, it is important the state have the information necessary to adequately assess the need for additional facilities.

Other states such as Texas and Florida have established and use an inventory of facilities to determine their needs. Texas inventoried its 29,000 buildings and 6,000 sites. Their inventory included descriptions of school site, building architecture, and major systems and details of each room. Florida required of each of its county-based school districts to develop an inventory that provided detailed descriptions about each school and each classroom. The condition of air conditioning, age of roofs and windows, and other aspects of the building were included. Additionally, provisions have been provided to update the inventory every 5 years and when new facilities are built.

There are several reasons why it is important for the state to inventory its educational facilities. First, there would be a determination of how many and where new schools are needed and the extent and location of modernization that is necessary. Second, it would provide information regarding funding processes. Determining the source of need in regards to educational facilities would help in determining what is required in generating funding sources.

Third, making these determinations will help in determining how best to administer and structure the processes and projects. Constructing, modernizing and renovating educational

facilities call for core competencies many school districts do not have (Little Hoover Commission, 2000).

Hill (2001) described the fundamental issue related to state and local school district relationships in regard to educational facilities. She wrote, “Assigning responsibility for facility conditions is difficult under the current state-district funding partnership because the rules of the partnership are not clear” (p. 1). For example, educational advocates sued the state for its failure to provide adequate educational facilities, and the state responded, in part, by suing 18 school districts for their failure to provide adequate educational facilities.

The Little Hoover Commission (2000) recommended that the state unify its oversight of school facility projects and concentrate on low-performing school districts. It counseled that the “goal should be to hold down the long-term costs of building, operating and maintaining school facilities” (p. 41). ...The OPSC, in partnership with local school districts, should develop and maintain an inventory of facilities, project long-term facility needs, and assess the allocation of state funds” (p. 57). The intent is to capture the essential information regarding age, available technology, capacity, condition, environmental equipment, and size.

Establishing an inventory and formulating a long-range educational facility plan, increases the likelihood that there is equality of educational opportunity within all of the school buildings of the school district. The inventory and long-range plan ensures that as new elementary schools

are being built in the growing sections of a school district, the older school buildings, often with substandard educational facilities, are also being modernized (Castaldi, 1994).

The process of financing building and modernizing schools in California is a complicated one. California school districts have paid about 60 percent of the total cost of school remodeling and construction, raising most of this money from property tax overrides and developer fees. The state, in turn, has financed about 40 percent of school facility costs, using the proceeds of voter-approved General Obligation Bond (GOB) programs.

The Governor's budget in January 2001 approved \$20 million for 10 new high-tech high schools across California. He also provided an increase for K-12 deferred maintenance by \$8.8 million to a total of \$203.6 million.

Funds of \$1.3 billion from bond proceeds authorized under Proposition 1A remain to be apportioned through July 2002 specifically for new school construction. Proposition 1A provided \$6.1 billion for K-12 construction projects over four years (1999-2002) with \$3.35 billion available in the first two years and \$3.35 billion available beginning in July 2000. Over the four years, \$2.9 billion will be allocated for modernizing schools, \$2.1 billion will be allocated for new construction, \$1 billion for hardship cases, and \$700 million for class size reduction efforts (Little Hoover Commission, 2000, p. 14). As of December 2000, \$1.6 billion of the funds from bond proceeds authorized under Proposition 1A, approved by voters in November of 1988,

remained to be apportioned. These funds are available for apportionment to eligible school districts through July 2002.

The California Budget (CDE, 2001) increased to a total of \$203.6 million including funding from excess loan repayment funds and school site utilization funds. These funds will fully fund the one half of one percent match for 2001-2002.

Proposition 39 lowers voter approval requirement for General Obligation Bonds (GOBs) from 66 percent and 2/3 percent to 55 percent making it easier for local district to obtain funding for their facility needs.

Senate Bill 50, passed in July of 1998 increased over a two-year period the percentage of district general fund budgets dedicated to ongoing maintenance of facilities (exclusive of deferred maintenance match funds) from 2 percent to 3 percent. The Bill requires the SAB to adopt regulations for allocating funds under the Administrative Procedure Act which requires public notice and comment periods. The new formula is based on “unhoused” students. The intention of the Bill is to require districts to make all necessary repairs, renewals, and replacements to ensure that a project is at all times kept in good repair, working order and condition. An appropriate budget allocation for routine maintenance and repair will typically range between 2 and 4 percent of the current replacement value of those facilities.

A number of suggestions regarding the most efficient and effective way to structure in order to fund and to construct and maintain educational facilities has been advanced. Hill (2001)

argues that a new blue print for K-12 public schools is needed to finance facilities and address associated issues. First, state funding for educational facilities should be predictable.

Construction, renovation, and maintenance programs operate more efficiently when funding is consistent (Little Hoover Commission, 2001). Second, the state role should be focused, local control and local responsibility should be established in a different way than is presently practiced, and third these steps should take place with a pre-planned transition program (Hill, 2001).

The funding formula would “begin by providing one facility payment per student. The grant would be calculated at an amount sufficient to cover the cost of building and modernizing school facilities over a 50-year period” (Hill, 2001, p. 8). The predictable available funding would cover the annual expense of the school capital outlay program as a joint financial responsibility between districts and the state. A state-funded program would assist the low-wealth districts. State and local responsibilities would be clarified. Districts with immediate needs would be assisted. Hill estimated the annual facility expense for a child would be about \$550 and the state cost for this program would be about \$1.6 billion annually.

The Little Hoover Commission (2000) suggested the SAB develop a range of graduated options for intervening in districts with poor-performing facility programs. The options could include technical assistance provided by state agencies, professional organizations, or the school

facilities institute, to the creation of a state authority similar to the Federal Resolution Trust Corporation for managing the affairs of incompetent districts.

The Little Hoover Commission (2000) recommended the establishment of an institute to provide leadership on school facility issues, training for local school staff, and technical assistance, advice, and consulting services. The institute would be governed by industry leaders such as architecture, engineering, urban planning, construction, and public facility finance. As an independent, quasi-public and a fee-for-service program provider, it would be focused on building competence and providing technical assistance and consulting services.

One of the officials from the Fiscal Crisis and Management Assistance Team (FCMAT, 2001) explained that beyond the state's accountability role, strong accountability measures hold the local community, the governing board, accountable, as well as intermediate agencies in the state, the county offices of education, who have an important oversight role.

Assembly Bill 1200, in order to provide for additional oversight and authority to county offices of education, created the FCMAT. It became effective in 1992 intended to provide services and products to California public schools. Its responsibilities include occasional assessment of school districts based on pre-developed standards in five operational areas: Management of facilities, finances, governance/community, instruction, and personnel. It carries out on-site reviews and assessment of the sites and facilities. One of the strengths of FCMAT is that, because it is independent and external, it is able to provide an independent and external

assessment of the standards when it is assigned to a school district by the state such as in the case of Compton Unified School District. Its weakness is related to the oversight of school facilities because the FCMAT assesses a number of areas after it is called by the state to help a district in disarray and its relationship to the district lasts only until the district gets itself into compliance. Once compliance is reached, the district is left on its own without further oversight.

Assembly Bill 174 requires the County Superintendent of Schools, as necessary, to assign a school physical plant safety audit team paid for by the County Superintendent of Schools to advise the school district regarding its physical plant safety problems. Compliance regarding school building grounds and equipment is expected. However, because the audit is to be funded by the County Superintendent of Schools, enforcement of compliance is not assured.

Another option to obtain funds for school facilities is to utilize state building authorities. State building authorities are “quasi-governmental corporations originally developed to circumvent legal debt limitations on local school districts (Thompson & Wood, 1998). Authorities use the credit rating of the state to obtain the best possible interest rates for bonds. A state building authority can work well for funding because it can be free from the political battles associated with annual legislative appropriations. It can also provide services rural and other types of school districts often do without, such as financial planning and project management (Deweese & Earthman, 2000; Kowalski, 2002). Some examples of this plan are the

following: The Chicago Public Building Authority, the New York City School Construction Authority, and the British Columbia Building Corporation.

In building new schools, fees for construction managers, energy consultants, and architects are left to the discretion of local districts. Local districts also now approve the bidding process and cost standards and change orders. Under SB 50, districts are no longer required to do five-year facility plans. Also, they are no longer required to use portable classrooms for 30 percent of new schools.

Researchers report nine options for financing school facilities. Some are more common and some are easier to administer. The particular context appears to be the major determinant as to which option(s) is chosen. They are: (1) pay-as-you-go, (2) reserve funds, (3) GOBs, (4) full state support, (5) state equalization grants-in-aid, (6) state percentage-matching grants-in-aid, (7) state flat grants-in-aid, (8) state loans, and (9) state school building authorities.

Adequacy in School Facilities

Lyons (2001) reports that about one third of our schools use relocatables and about one fifth use temporary instructional space such as cafeterias and gyms. Relocatables often incorporate materials such as the off-gas formaldehyde, a health risk for some individuals. Relocatables are generally located away from the main school facility and are often placed on parking lots and/or inadequately prepared fields where walking and lighting are poor. Another

inconvenience is that students and teachers transfer between buildings for restrooms, media centers, gym classes, and other specialized classrooms. These buildings require high maintenance.

Poorly maintained school buildings were cited as demoralizing to teachers and students alike (National Academy of Science, 1990, p. 12). These school buildings are inadequate many times, because there is underfunding for that particular purpose. School districts sometimes defer maintenance and renovation because the state funds deferred maintenance, provides one-time block grants, and funds modernization under the modernization program instead of providing incentives for maintaining high quality in school facilities.

An adequate school facility maintenance program for the state's public schools consists of requiring that maintenance and renovation staff and managers be trained and qualified. Adequate funds would be available to districts possessing effective management plans and trained personnel and records regarding facilities would be kept current and periodically reviewed.

In general, the “central administration of a school district has an important part to play in the operation and maintenance of all of the school buildings within its jurisdiction” (Castaldi, 1994, p. 406). This maintenance may include rehabilitation, remodeling or renovation, and modernization. Rehabilitation is a form of deferred maintenance. The school is simply restored to the same condition it was in when it was built (Castaldi, 1994). Remodeling or renovation goes beyond rehabilitation because it includes changes in the size or shape of any space within the building (Castaldi, 1994). Modernization is a “process whereby an existing school facility is

brought up to date structurally, educationally, and environmentally” (Castaldi, 1994, p. 378).

The modernization process demands that matters related to the safety and health of the occupants of a building are addressed. Lighting, temperature, and humidity control, sound pollution, water quality, ventilation, fire protection, and potentially dangerous situations are improved to the maximum possible degree” (Castaldi, 1994, p. 383).

Swedberg (2000) presents guidelines from Minnesota that outline some building requirements regarding consolidation, replacement, or upgrading a facility. Three building regulations guide decisions concerned with building or replacing facilities. First, if the cost of bringing existing buildings up to code or standard approaches 60 percent of the cost of replacing the facilities, replacement is called for. Second, high school classroom utilization is suggested at full utilization minus one class period (for teacher preparation) or at 80 percent of full utilization. Finally, minimum recommended school site sizes are “10 acres for elementary schools, 25 acres for K-8 or middle schools, 35 acres for K-12 or small high schools, and 60 acres for large high schools (more than 2,000 students) with added size for larger enrollments” (p. 93).

For California, Title V, Sections 14001 to 14033 of the California Education Code specify the site selection criteria for educational facilities. For example, Code Section 14030a specifies that the standard for adequate space for pupils 1 through 12 is 960 square feet. Code Section 14030 specifies the class size in square footage, safety standards for laboratories, and supervision of nurse’s office. The Universal Building Code (UBC) is referred to for specifications for

bathroom fixtures and counts, pedestrian traffic, safety to and from school and special education classrooms in proximity to other classrooms. In sum, the size of the school site should be “sufficient to accommodate all educational functions and supporting services plus an additional 25 percent in area for unforeseeable future needs” (Castaldi, 1994, p. 151). For example, for physical education in grades 9-12, from 1.4 acres to 3.4 acres are required.

Providing adequate space for education is not only a matter of a certain number of square feet of classroom space per student. “For learning to truly take place, students must have access to spaces appropriate for the purpose to which they are being used. ...This means that classes should be held in rooms meant for instruction, not in make shift spaces such as closets and hallways” ...(Burnett, 1995, p. 4).

Educational facilities may be conceived as spaces planned for comfort and convenience. For example, comfortable lighting, humidity, about 60 percent, and temperature of about 72 degrees Fahrenheit, seating, colors, ventilation, and acoustical environment are some aspects of providing for comfort. Convenience is related to location, for example, the location of restrooms, storage, shelving, and grouping of areas of related activity. Convenience is also related to the design of traffic patterns and layout of equipment.

Provisions for safety and health include the sanitary facilities consisting of plumbing systems such as toilet facilities and their fixtures, ventilation, toilet seats and flush mechanisms, and location of toilet spaces and their cleanliness. The lavatories’ systems consist of drinking

fountains with nozzle height requirements such as 24 inches above the floor for kindergarten and primary grades, 28 inches for upper elementary grades, 32 inches for junior high schools and 36 inches for senior high schools and colleges (Castaldi, 1994). Water supply and sewage disposal are the other two systems.

For parking and bus loading, the minimum space required is 0.3 acres plus 380 square feet for each auto stall and access roads. An elementary school of 18 classrooms would require 40 parking spaces. Kindergarten through 6th grade would require 30 parking spaces and about 0.6 acres. High schools of 2,000 students would provide parking for 1,000 cars, 380 square feet per car or about 8.7 acres of land in addition to space needed for staff and visitor parking.

To summarize, nine building features are usually reported by the literature: (1) roofs, (2) floors, foundations, (3) exterior walls, finishes, windows, doors, (4) interior finishes and trim, (5) plumbing, (6) ventilation, heating, air conditioning, (7) electric power, (8) electrical lighting, and (9) life safety features.

Lowe (1990) reported that teachers cited the “availability and quality of classroom equipment and furnishings, as well as climate control and acoustics as the most important factors which affected their teaching the most. Corcoran, Walbert & White (1988) likewise, reported that working conditions contributed to teacher absenteeism, reduced levels of effort and effectiveness in the classroom, low morale, and reduced job satisfaction. Stevenson (2001) found that teachers

are attracted to schools with modern learning environments rather than run-down overcrowded ones.

The Little Hoover Commission (2001) reported that “unattractive work environments discourage capable educators from teaching, particularly in hard-to-staff schools. Dilapidated facilities and unsafe working conditions encourage capable teachers to leave undesirable schools” (p. xii). It recommended that the state should target additional resources at hard-to-staff schools to make them more attractive workplaces for credentialed teachers. It elaborated, “Schools should meet operational and facility standards by the state and schools with deficiencies should be required to correct factors that make them unattractive work environments” (p. 14). It concluded that teachers are concerned about safety and educational atmosphere and these work place conditions have a stronger impact on teaching satisfaction than even compensation (p. 45).

Research is showing that excellent school facilities and dedicated teachers are the basic ingredients of a good educational program. Teachers working in well-designed and highly functional school buildings are able to achieve instructional effectiveness that exceeds what is possible when the necessary “things of education” are provided (Castaldi, 1994, p. 3).

Conclusion

I have reported that a high proportion of the educational facilities where our youth’s learning and our teachers’ instructional process are taking place are inadequate. The facilities are crowded, old, and in need of repair and modernization. The three major reasons are increased

enrollment due to demographic changes and class size reduction, the average of over 25 years of school buildings, and the high cost of facilities.

The adequacy of educational facilities, has in part, been determined by court cases as well as by judgements regarding aesthetics, flexibility, adaptability, suitable size, operational efficiency, health and safety, durability and accessibility.

Due to the state and local school district relationships in regard to educational facilities, funding, inventorying, and oversight of educational facilities remain uneven across the state and school districts. The options exercised by school districts reflect a variety of relationships between local, state and other agencies. None of the options, however, show a direct and consistent link between inventory, provision of new and improved facilities, and continuing oversight. Thus, a critical need for adequate educational facilities and a way to ensure the day-to-day and year-to-year maintenance of adequacy remains.

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