

2ND EXPANDED EDITION

School Maintenance & Renovation

Administrator
Policies,
Practices,
& Economics

Dr. Glen I. Earthman and Dr. Linda Lemasters

Foreword by Richard A. Flanary

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Foreword

GLENN EARTHMAN and Linda Lemasters have written a thorough and complete guide to the operational side of organizational leadership, with a special emphasis on buildings and facilities. This comprehensive work focusing on the leadership responsible for maintaining a safe and efficient learning environment in every school provides readers with a unique source of experience, credibility, and practical information.

Research has demonstrated the impact organizational leadership has on school and student performance. Cognitive science continues to inform us about the effect of the environment on student learning. Leadership in the building-based organizational aspects of schooling is, therefore, a key ingredient necessary for academic success. This work provides readers and decision-makers with a distinct advantage in guiding the thinking and actions that influence the school environment and positively impact student achievement.

Collectively, across the United States, the estimated investment in school buildings is in excess of one trillion dollars. This investment is even more important in austere budget conditions that states, communities, and school districts are enduring. Safeguarding these investments is a moral responsibility that translates into responsible decisions and actions. These decisions and actions are informed by the collective experience of school leaders and reliable information that guides the decisions. One of the great values of this book is the curation of a vast amount of information into manageable intelligence that increases the metric for successful decisions.

The new edition of *School Maintenance and Renovation* is an impressive compendium of collective experiences, valid and reliable best practices and current thinking. Having this book in your library is a distinct advantage for an effective school leader.

DICK FLANARY

*Deputy Executive Director—Program & Services
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Preface

EVERY day millions of students enter the hallways of thousands of schools. Are these schools clean, safe, and healthy? Are these places conducive to children's achievement and productive teaching?

The media keeps the public informed of the success, or lack thereof, of our schools nearly on a day-to-day basis. Bloggers or broadcasters rarely ever mention the condition of the school facility. Yet, most of us would agree that our surroundings affect us in many ways. Too often in school leadership programs there is complete neglect of the building administrative side of organizational leadership. This book speaks to that leadership; the intent is to make sure that the education of students is not impaired by the places where they learn.

When this book was first published, the United States was enjoying an expanding economy that had lasted several years. Wages were competitive and rising, and even inflation was kept at a low rate. Retirement accounts were being bulked up with substantial investments by workers. The stock market was a bull market, and the Dow Jones reached over 14,000. It was a time of relative prosperity for almost everyone.

The ease with which the average citizen could obtain credit was phenomenal. Banks were developing new mortgage instruments that would permit potential homeowners to buy into a large house with little or no down payment with the hopes that the house would appreciate quickly and reduce the possible burden of the mortgage payment. Speculators in homes and mortgages could turn a profit rather quickly because of the expanding price of housing.

All of this aura of debt-driven prosperity evaporated in the latter part of 2007 when the credit market collapsed, bringing down other institutions. The Dow Jones dropped to below 8,000, and everyone who had a retirement plan tied to the stock market felt a severe loss. The collapse of the whole economy was felt by almost everyone through losses of investments, jobs, and houses.

The sad scenario of a recession has played out for several years and continues into an anemic recovery. Not only did the average citizen suffer from the

recession, but also every governmental unit suffered budget cuts and losses. The local school system was no exception. Budget cuts in the operational budget of every school system were widespread, and the recession had an influence upon the maintenance and operation of every school building in the United States. Deep reductions in funds to support the maintenance and operations function of the local school system were evident in most sections of the nation.

The reality of these reductions in funds for maintenance projects has resulted in a backlog of deferred building improvements and repairs. The school building inventory of the nation has gotten older and has not had the attention needed to keep it in good working condition. A toll has been taken on the school building inventory. The investment in school buildings the citizens of this country have made in the past has become more important as the recession has undermined maintenance and new construction alike.

Collectively, the citizens of the United States have a tremendous investment in community infrastructure, which includes a vast array of expensive structures devoted to local service, such as libraries, court buildings, and schools. It has been estimated that the investment the country has in school buildings alone is in excess of \$1 trillion, which represents the replacement cost of the buildings. The investment has been accumulating and appreciating for over a century and would be impossible to duplicate in present-day dollars.

This investment must be kept intact and in good working order. Today, most school systems find it difficult just to find the funds to properly maintain the existing stock of buildings, let alone build new structures. What does it take in terms of financial and human resources to keep school facilities at a high level? What are the routines and the calculations that enable school authorities to do this efficiently?

Of even more importance is the realization that the physical environment in which education is conducted has an influence on the achievement of students. During the past decade, research has offered data demonstrating that the condition of the school building can influence student learning either in a negative or positive manner.

The knowledge that the citizens of the country have a considerable monetary and emotional investment in the buildings used for education, plus the knowledge that these buildings play an important role in the proper education of children mandate diligence in the care of school buildings. This volume gives the practicing administrator both basic and sophisticated tools for understanding how to prolong the useful life of school buildings, as well as to plan new ones. At the same time, the book explains the costs to operate a school building. In addition, a detailed plan of how school renovations are carried out is presented—with a view to attaining and preserving educational ends. The true costs of maintenance and renovation are analyzed, and important saving mechanisms are provided. With this volume, educators can learn where (and where not) to apply cost-cutting mechanisms in the daily operation of schools

and in plant improvement. The book offers timely pointers into some of the decisions that need to be made regarding maintenance practices. It is unique in the field of school administration because it addresses two very important functions of school administration related to buildings: how to construct and renovate a building and how to maintain it—from the vantage of educators tasked with these duties in the context of sustaining and increasing student achievement. Many times school authorities do not realize the magnitude of the total costs associated with proper building maintenance because they are busy keeping the school system operating. This book should help them to put into perspective total costs of maintenance programs and how to realize savings.

Intended Readers

This book is written for decision-makers in public school buildings, district offices, and boards, which encompasses principals and other administrators who are legally responsible for keeping buildings safe and orderly. Research findings have demonstrated that principals are very aware of the condition of the building they are administering and perhaps know the condition better than the central administration. In addition, principals usually instigate school inspections and repairs.

The intended audience also includes decision-makers in private and parochial schools. In fact, this publication should be an important aid to administrators in this section of education. Many times, private-school administrators do not have staff to conduct the maintenance program for the school system, such as their counterparts in the public schools systems have. The administrator may have little or no support to maintain the buildings in good condition. Therefore, it falls to the administrator not only to keep the educational program functioning at a high level of effectiveness, but also to ensure efficient operation of the physical plant. In the private and parochial sector, there are many educational organizations that consist of one school building with one administrator to carry out all the tasks of operation and maintenance. This person needs practical assistance in discharging the responsibilities of properly maintaining the buildings. The present book offers practical guidance for individuals in such positions.

In all sectors of the educational establishment, there is a need for properly trained individuals who can assume the responsibility of conducting a maintenance program. Replacement personnel in the maintenance program are constantly needed, and this book provides important background to train such individuals.

Note to Readers

Local school organizations have many different names and designations de-

pending upon their legal status within the governing system of the state. The most common term to describe the local school organization is school district. This is because in the majority of the states the local school organization is a separate legally organized district for the sole purpose of providing educational opportunities for children and youth. School districts in these states can geographically cover more than one jurisdiction such as a county or city. In other states the local school organization is a legally constituted corporation, and these are called school corporations. In one state the local school organization is part, or division, of the local governing unity, which is either a city or county. Hence, school “division” is the legal term to refer to the local school organization.

To avoid confusion in the nomenclature, the federal Government has coined the term Local Educational Agency (LEA) to designate the local school organization. In this book the authors chose to use the abbreviation “LEA” to refer to the local school district, school corporation, or school division. There are some places in the text where it seems more appropriate to use the term local school system to describe the local educational agency.

Likewise, there are different names or terms to refer to the governing body of the LEA. Some are called school boards, boards of education, or school trustees. Here, the authors have chosen to use “school board” as the name of the governing body, which seems to be the most common name throughout the country to designate the body that governs an LEA.

How Schools are Funded

Introduction

THE mechanism and formula used by the various states to fund local public schools is so complicated and multi-layered that an extensive discussion would necessitate many volumes. In addition, the sources of revenue used by the states to secure funds for schools vary considerably. Likewise, the manner in which independent and parochial schools are funded varies from institution to institution.

In this chapter only basic principles are presented about how public, independent, and parochial schools in the United States obtain their funds. The intent of this section of the book is to review several critical revenue sources in the overall school finance picture. To those in authority in the private and parochial sector, who are not familiar with public school funding, this chapter offers elementary insights into the problems public school authorities face in obtaining resources for their operation. The material is presented as background to further discussions on the financing of school maintenance and renovation.

The Reserve Clause of the United States Constitution places the responsibility for education on the individual states. Therefore, each state offers an educational program of some sort to all children and youth within a prescribed age limit. In all cases, the constitution of each state guarantees every student in that jurisdiction a basic educational program. The educational program offered by one state is nominally different from the programs offered by other states, yet there is a great deal of commonality among basic programs across the United States. As a result, the basic educational requirements are virtually the same in every state. There may be a difference in terminology, but the requirements are almost identical.

State Responsibility

Even though the state mandates a basic educational program, the state has placed the responsibility of operating the schools upon the local authority, regardless of what that governmental entity might be. Historically, the organization of the local educational agency has been delegated to the lowest unit of government. In some cases, this has been on the township, reflecting the requirements of the Northwest Ordinance of 1797, according to which the local unit of government was the township, and the township became responsible for operating the school. There are several other governmental structures upon which the school system is organized.

In many states special districts are created for the purpose of providing educational services. These districts can span other governmental units or be contained within a single unit such as a county or city. Special districts are considered quasi-governmental units devoted to a single purpose, that of providing educational services. The school district is the most common form of governmental unit that provides educational services in the United States. In some states, the county/city is the lowest governmental unit, and the county/city provides educational services in addition to other services. In such instances, the local school system is coterminous with the boundary of the county or city.

Because of the diffused responsibility for education, each state has had to devise a uniform system for funding educational functions. Funding programs have been based upon the traditions and requirements of each state, and consequently there is an abundant variety of funding programs indigenous to individual states. Each state determines the extent of the educational program it will fund. Educational programs that exceed what the state requires become the direct financial responsibility of the local school system, and local funds must be generated to fund such programs, with revenues derived from taxation, capital campaigns (bonds) etc.

The state provides money to each local educational agency for the required basic educational program. The state determines what constitutes the basic educational program and funds that portion of the total program offered by the local school. These moneys are derived from the general budget of the state, which is funded by the various streams of tax revenue employed by the state. The streams of tax revenue generally come from the following: income taxes, sales tax, personal property tax, license fees of various sorts, sale of property, and rental fees. There may be other specialized taxes or assessments employed by states to generate general revenues. Certain states have devoted all or a portion of lottery revenues to education, for example. Funds given to the local education agency (LEA) are generally termed grants because the money is used by the local educational agency to provide state mandated educational programs to students.

Local School Responsibility

Almost every local educational agency provides educational programs and services to students above what is required by the state. As a result, local revenues must be raised to pay for these program and service extensions. The funds are normally obtained by using the tax mechanism the state has permitted the local government to use. In almost every state this has been the tax upon the real estate or property of individuals and businesses located within the confines of the school system. By levying a tax on all real estate located in the school system, school systems generate revenue to pay for their programs and services. These taxes are termed *ad valorem* because they are assessed based upon the value assigned to real estate being taxed. *Ad valorem* taxes form the major source of revenue for most local governmental units, including school systems. The real estate tax is a very stable source of revenue and does not fluctuate as much from year to year as do other tax bases. On the other hand, the real estate tax is not very responsive to changing economic conditions such as inflation and recession. In addition, the tax is not as efficient as other taxing mechanisms because of the high administrative costs and limited tax base. The real estate tax is not considered a progressive tax in that it falls the heaviest on large property owners such as farmers and the elderly whose main asset may be land or a house but who otherwise may not have significant income or cash assets. Nevertheless, the real estate tax is the basis of funding for both operational and capital fund needs by the LEA.

The inefficiency of the real estate tax model to fund local education recently has been exhibited. As noted in the Preface of this book, a recession began in 2008. This downturn continues to affect property values, with many local property values throughout America declining 10 to 30%. This drop in real estate values lowered school funding revenue streams, and for the first time in recent history, school budgets experienced drastic budget cuts.

The observations regarding the diversity of state funding programs for funding the educational program apply also to funds used to construct and maintain buildings. There are differences in each state, but there is a great deal of commonality in how local school systems obtain funds for capital improvement projects. Historically, states have placed the responsibility of raising capital funds for school buildings on the local educational agency.

The precise reasoning for this may be lost in history, but it can be assumed that from the time of the colonists the entire cost of providing educational services to students fell to the local community to provide. Not only the cost of a teacher, but also where the teacher would conduct classes and live were the responsibility of groups of families or the community itself. The state did not enter into the equation of funding education until well into the nineteenth century. As a result, the place where education takes place was entirely up to the local community. This tradition has held sway down to the present. That not-

withstanding, many states now have been called upon to provide funds for the construction of new facilities and even to maintain existing school buildings.

Finally, during the economic downturn that began in late 2007, local LEAs were awarded grants from the Troubled Asset Relief Program (TARP), which is part of the Emergency Economic Stabilization Act of 2008. LEAs used these funds to keep teachers employed and school programs intact. Some TARP funds were also available for state grants for shovel-ready construction projects; however, it is very difficult to identify localities that were able to use the funds for school construction projects. Local educational agencies are continuing to contend with the problems of what to do in the absence of Federal funds related to the “Great Recession.”

Local School Bonds

The most common method local school authorities have of financing any kind of capital improvement project is through the use of bond funds. Local school systems in almost every state have the authority to go into debt by issuing municipal government bonds, which are also called General Obligation Bonds. There are some exceptions to this in those states, such as Virginia and North Carolina, where the local school board is not fiscally independent of the local governmental authority. In these situations, the school board must ask the local government to go into debt to fund capital improvements. The general obligation bonds are a direct debt of the school system, issued to obtain funds for capital projects. These bonds are repaid by levying a special tax upon the real estate owned by property owners resident within the school system.

School boards obtain the authority to issue bonds through passage of a bond referendum. The bond referendum is a simple vote of the electorate to enter into debt to raise funds for capital projects. In most states, a simple majority of the votes is needed for approval to float bonds. Certain states require a higher vote count, with several requiring a 67% or 75% assent rate before a bond referendum is approved. In 2002, the State of California reduced the percentage of votes necessary for a bond issue to pass from 66% to 55%.

There are localities in which the school governing body can vote to go into debt without approval of the electorate. These cases are unusual and require certain circumstances to be in place. As an example, municipalities in Virginia have the constitutional authority to vote to go into debt to the extent of 10% of the total assessed valuation of real estate without voter approval.

Following voter approval, the school board begins the process of approving and selling the bonds to obtain funds for the various projects under consideration. Bonds are sold on the competitive market through an open-bid procedure. School boards employ bonding expertise to insure the legality of the bonds, to suggest an acceptable interest rate, and actually to sell the bonds. Normally, large investment or bond companies bid upon the bonds in order to

market the bonds for the school system. The bonds are sold to various investment firms in exchange for funds that are forwarded to the school system to use for the capital projects. Once the proceeds from the bond sales are received by the school system, they are expended through standardized business processes to contractors and vendors for services rendered and for equipment purchases related to the project. Funds obtained through the sale of municipal bonds are highly restricted, in that they must be used for capital purposes and may not be used for operational purposes. In fact, in some jurisdictions, the funds are specifically earmarked for projects and cannot be spent on other projects without permission from voters.

Local School Debt

The debt from the bond sales is entered into the annual budgetary system of the local educational agency. The term of a municipal bond is usually twenty years, and the school system pays off the debt through annual installments through the debt service section of the annual operating budget. Special taxes are imposed upon the residents of the school system to provide the extra funds needed to retire the bond indebtedness.

There are many issues and problems associated with the management of the indebtedness of the local educational agency. Debt service itself can be a large drain on resources of the school system if it reaches certain limits. And, obviously, debt service must be kept within a certain payment range, so as not to impact the operating budget. The old premise that the more funds needed for debt service, the less available for educational programs, has a great deal of authenticity. Additionally, the amount of debt a school system carries on its books can negatively impact its credit rating, which in turn can increase the rate of interest a school system must pay for new loans.

Funding Maintenance

Maintenance work is normally funded from the operational side of the annual budget of the school system, with the operating budget underwritten by the annual tax levy on real estate. These taxes go directly into the general fund of the local educational agency and are allocated to the different sections of the operating budget. Of course, there are other sources of funds, such as state and federal funds, which are in the operating budget, but often times these funds are for special purposes and can not be used otherwise. Nevertheless, the job of keeping the buildings repaired and operating must be funded from the maintenance and operations section of the annual budget, approved annually by the school board or board of education.

There are some exceptions to the general rule that maintenance is funded through operating revenue. In some instances, local educational agencies do

not have the resources to complete some special projects that require more revenue than would normally be available in the annual budget. Items such as a new roof, a boiler replacement, or a new water system may cost more than the school system has within its annual allocations. In such cases, the school authorities may have to go into debt to secure sufficient funds to complete such a project. In small school systems, this scenario may be played out whenever such large projects need to be done. Normally, except for large projects that require a great deal of revenue, maintenance items are not funded from borrowed revenue. The general rule to follow in deciding whether or not a maintenance item should be funded through borrowed funds is that the project or item should be of such magnitude as to require the local educational agency to go into long-term debt. In other words, painting a building is something that needs to be done on a regular basis every 5–10 years. Bond funds are usually paid back in a twenty-year period. The life of the painting job does not exceed the number of years the school system will require to pay back the funds used. Thus, painting projects should be funded through the regular operating funds. The longevity of the maintenance work to be done should at least meet the length of time to retire the indebtedness. The life of a new roof is usually 20–30 years, which is more than the length of time it will take to repay the debt, and such a project would qualify for being funded through bond funds.

State Funded Programs

In addition, special state-funded programs are designed to help local educational agencies shoulder their maintenance needs. These funds are usually provided on a cost-sharing or matching basis, where the state provides a certain percentage of the needed funds and the locality provides the rest. The State of West Virginia has such a program. The state is able to provide to local educational agencies considerable funds to maintain school buildings through the West Virginia School Building Authority not only to construct new facilities, but also to maintain them in good working condition. The reasoning behind this program is that the state has an interest in the effective maintenance of the facilities, given that a large amount of the construction costs have been borne by the state. There are other states that provide an annual per-pupil grant for maintenance purposes. These programs are not large, but they do show the interest a state has in the educational facilities of the locality. The US General Accounting Office (2000) reported that in the 1998–99 school year, 15 states provided little or no funding for local capital improvement projects.

The management of school facilities is a local responsibility, but one that local communities and school districts are struggling to meet. However, evidence abounds that, even after over \$500 billion of capital outlays in the decade between 1995 and 2004, public school facilities, particularly in low-wealth communities, have substantial deficiencies (Filardo, p. 3).

Independent and Parochial Schools

Independent and parochial schools do not enjoy the benefit of a stable stream of revenue from the community to fund maintenance projects similar to that of the public schools. These schools must rely upon either student tuition, private donations, or grants from an organizing body, e.g., a church, to fund their operations. Unless the school is wealthy enough to have a substantial endowment that can provide a dedicated source of funds solely for maintenance items, operational funds must be used to complete maintenance projects. Usually a set-aside portion of the annual tuition a student pays to attend a school is allocated for maintenance and upkeep of the building. Only the normal maintenance items can be accomplished by these revenues because they are limited. When the school faces a large cost or replacement item, other sources of resources must be used, or some type of fundraiser must be conducted.

An independent or parochial school can seek funds from institutions of the banking industry and retire the debt through tuition payments or other revenues received by a church or sponsoring institution. Most parochial schools, at least on the elementary level, are sponsored by a local church or parish. Although the schools are usually financially independent of the church, there may be revenues dedicated for the upkeep of the school building by the church.

Politicization of the Funding Process

Every state has a somewhat distinct funding process, which is applied and implemented at the local level. Perhaps because of this, all the steps to gain funding are interwoven with politics, which is more than a matter of party differences. Funding involves the politics of personalities, opinions, understanding, and personal agendas. This is not an unexpected phenomenon, nor should it be considered a hindrance, as long as what is best for students is the primary concern, and decisions are made based on correct information and good research.

One of the greatest hindrances to school funding is the concept that maintaining the facilities is not a part of instruction. Too many school boards, school administrators, teachers, parents, and communities see facilities and the personnel who maintain them as an auxiliary part of the educational process. Thus, when it is necessary to cut the budget in some area, often it is the custodial, facilities, or grounds items that are considered first, because it is believed that facilities are not a part of instruction. Research, as will be reviewed below and in subsequent chapters, demonstrates that facilities are linked to instruction, that the condition of the environment where children learn affects both achievement and behavior. It may affect the classroom teacher, too.

A model (Figure 1.1) developed by Cash (1993) best exemplifies a discussion of this process. The first element that directly or indirectly affects the

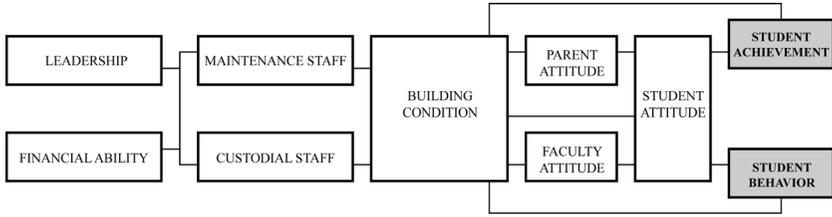


Figure 1.1. Cash's Theoretical Model.

condition of the building condition is leadership. This may be the leadership of the locality, the leadership of the LEA, or leadership at the building level. A breakdown at any one of these levels or a lack of acknowledgment of the importance of the facility will eventually affect the physical structure, maintenance, and operations and ultimately the place where the students learn, as necessary funding is not appropriated.

There is a direct connection, too, in how the funding flows for maintenance, remodeling, and construction. Funding is directly related to the convictions of the leading powers in the state and localities, in addition to the national level, as to the importance of the facility. Often funds are cut for schools because politicians and educators fail to recognize the impact of the facility on the student or the educational process. It would be negligent not to mention that the ability to pay also may hamper the role of leadership to provide the necessary funding.

In Cash's theoretical model, the maintenance and custodial staffs, directly relate to the condition of the building. There are two important components that affect the tasks that these employees perform. First, their work is only as good as the funding with which they are provided to accomplish their tasks. Secondly, no matter the level of funding, there must be an explicit mission shared with these staffs that maintenance, custodial tasks, and grounds work are an important part of the total educational process. There must be a shared vision that clean buildings, facilities in good repair, and schools that provide an infrastructure necessary for the twenty first century curricula are important.

The building condition in turn affects the attitudes of three groups of clients: parents, faculty, and students. The effect of buildings on people is a complicated relationship, as the building has a direct influence on the student, as well as an indirect relationship on the student via the parents and faculty. Poor facilities can create numerous negative relationships, such as between students and learning or parents and the school. Ultimately, there is a message to all of the stakeholders that education is of lesser importance when the community fails to fund the appropriate environment for learning (Lemasters, 1997; Ruzsala, 2008).

While many elements within the educational process are outside of the control of the educator and the community leader, it is normally possible to provide a school facility that exemplifies to the student the importance that the

community, the state, or the nation places on education. This can be accomplished by the community putting the emphasis on the buildings and grounds and by furnishing the funding necessary to keep them neat and operating efficiently and effectively. The place where students learn can encourage good student behavior and optimal student achievement by being safe, clean, and in good repair (Schneider, 2002). As stated by Edwards (1991):

Good infrastructure is truly at the base of a quality education. For a society searching for ways to address the education needs of the future, the building itself is a good place to start (p. 47).

Public Law 107-110, the *No Child Left Behind Act of 2001*, addresses many elements of public education in America: student achievement, parental choice, teacher quality, student readiness, and so on. Very little is mentioned about facilities, except for the areas of technology, charter schools, and student safety as it relates to tobacco and crime issues. Such omission ignores the large corpus of research indicating the importance of the school building on student and teacher health and performance.

There was \$1.1 billion in the national 2001 budget allocated for school renovation, IDEA related retrofit, and technology grants. This is in light of a Fast Response Survey System (FRSS) survey indicating that three-quarters of schools in America reported needing to spend some money on repairs, renovations, and modernization with over \$127 billion required to accomplish these tasks (Lewis, Snow, Farris, & Westat, 2000). Therefore, one can surmise that school maintenance is a political issue that needs to be addressed, not only in the state and local arena, but also at the national level. Subsequent chapter will speak to these needs in detail.

Approximately eight years later, Race to the Top was initiated and was funded by The American Recovery and Reinvestment Act of 2009 (ARRA). One hundred billion dollars was designated for education. Of those funds, \$8.8 billion was allocated to governors for school modernization, public safety, or other government services.

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