



Research Report

THE RESOURCE ALLOCATION OF FOUNDATION FUNDING FOR ARKANSAS SCHOOL DISTRICTS

August 13, 2012

**Prepared for the
House and Senate Committees on Education**

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INTRODUCTION

This study is presented in partial fulfillment of the requirements of Act 57 of the Second Extraordinary Session of 2003, and Act 1204 of 2007. Those acts require the legislature to conduct an adequacy study each biennium to assess needs related to providing an adequate education for all Arkansas K-12 students. This part of that larger study examines FY 2010-11 school district expenditures and staffing in comparison with matrix assumptions about needed funding levels for staffing and expenditures.

Arkansas's K-12 education funding formula, referred to as the matrix, is used to determine the per-pupil level of foundation funding disbursed to each school district. The components of the matrix were determined originally by a 2003 study by Allan Odden, Lawrence Picus and Mark Fermanich (2003 consultants' report). The levels were subsequently refined in 2006 by Allan Odden, Lawrence Picus and Michael Goetz (2006 consultants' report). The matrix was not intended to reimburse schools for actual expenditures but rather to provide a methodology for determining an adequate level of funding to allow schools to meet minimum accreditation standards and adequately educate Arkansas students.

To complete this report, Bureau of Legislative Research (BLR) staff surveyed all 239 districts and 74 randomly selected schools through web surveys. They also conducted on-site interviews with staff at each surveyed school. Financial data was extracted from a data warehouse maintained by the Arkansas Public School Computer Network (APSCN) Division of the Arkansas Department of Education (ADE). Charter schools were omitted from the data collection.

The district survey data throughout the report is presented in tables that provide a statewide result but also divide the districts into groups by size, NSLA status, and achievement level. The chart below provides the number of districts, number of students and range for each group.

DISTRICT GROUPS	SIZE			NSLA STATUS			ACHIEVEMENT			STATE
	SMALL	MEDIUM	LARGE	HIGH%	MID%	LOW%	HIGH	MID	LOW	
# of Districts	36	104	99	6	71	162	61	107	71	239
Students	15,877	81,879	358,365	6,738	99,979	349,404	157,108	175,911	123,101	456,121
Range	Under 500	500 - 1,199	1200+	90%+	70% - 89.99%	Under 70%	Above 80%	70% - 79.99%	Below 70%	N/A

The size and NSLA status data is from ADE. The achievement data is from the National Office for Research on Measurement and Evaluation Systems (NORMES). The data used for the achievement groups is the percentage of students testing proficient and advanced in Literacy for each district.

This report also uses student achievement data to evaluate education funding. That analysis is based upon data prepared by the National Office for Research, Measurement and Evaluation Systems (NORMES) of the University of Arkansas.

A major objective of the biennial adequacy study is to determine how school districts have spent the foundation funding they have received. Precisely measuring their foundation fund expenditures has always been hindered by the fact that school districts have a variety of funds they can use for matrix items. In the FY2011 district accounting system, foundation funding is placed in and spent from two funds: the Salary Matrix Fund and the Operating Matrix Fund. However, other district revenues, such as excess property tax revenue and fund balances, can be comingled with foundation funding in these funds. To estimate the expenditures from these funds that were made using foundation funding, the BLR divided the total revenue in the Salary Matrix and Operating Matrix Funds for each district by their amount of foundation funding revenue for FY2011 (\$6,023 per student) to reach a percentage that was then applied to the total expenditures in each matrix line item for that district.

Identifying foundation funding expenditures in the future will be aided by new accounting procedures ADE has established for districts. The Department has asked districts to zero-out the Salary Matrix Fund and Operating Matrix Fund at the end of each school year. This requirement will ensure that the current year's foundation funding will not be comingled with previous year's fund balances.

A review of foundation funding in the context of the total funding available to districts provides perspective for an examination of districts' expenditures for resources necessary for adequacy. The report reviews the basic assumptions of the matrix funding model regarding school size and the grade distribution of students. Also included is a review of the per-student funding level for each item of the matrix since the original matrix for FY 2004-05 was established. FY2010-11 school district expenditures and staffing are compared to matrix assumptions about needed funding levels.

Following the line item level analysis of expenditures, an analysis of expenditures and staffing is outlined for subsets of schools and districts grouped by selected characteristics. Finally, the achievement gap for selected benchmark and end-of-course exams is assessed.

BACKGROUND

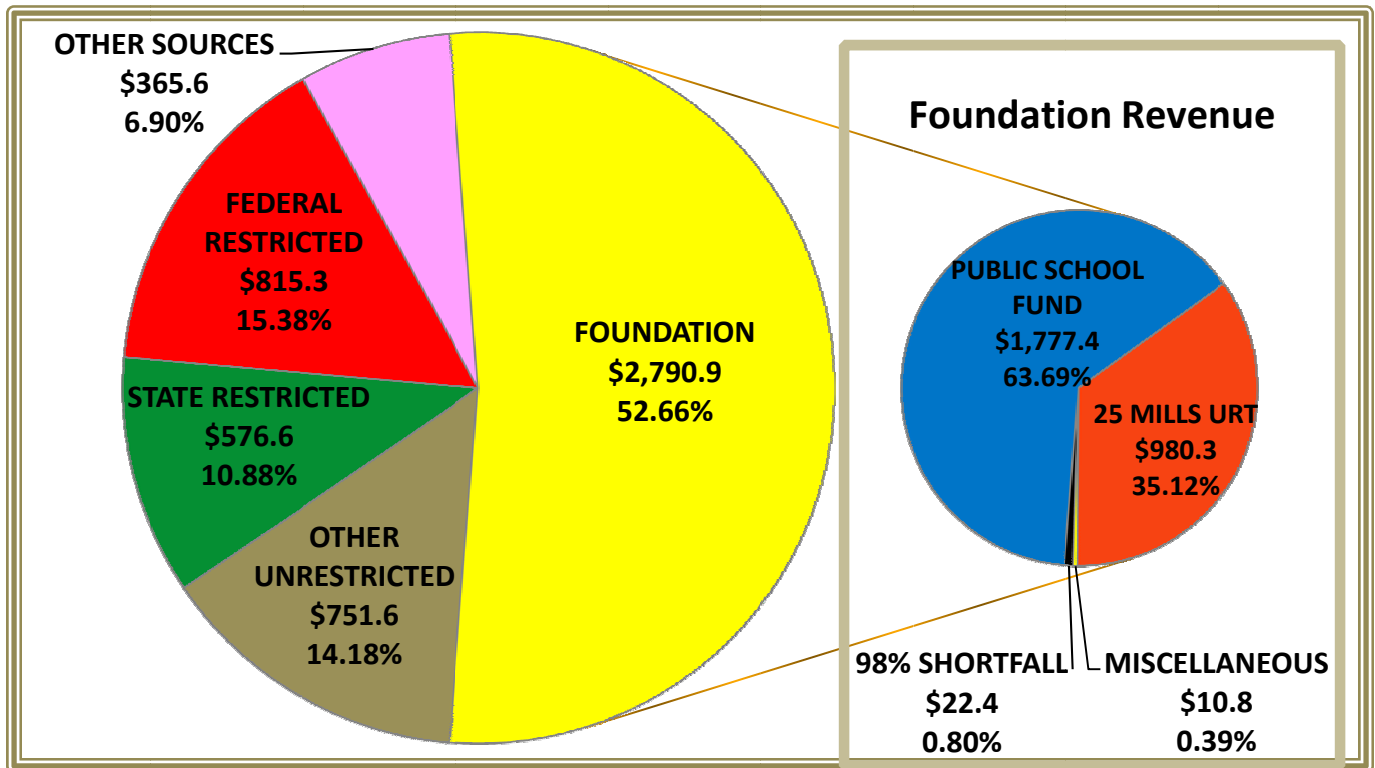
The Education Committees use the following working definition of "educational adequacy" to serve as a basis for identifying the resources required for adequate funding:

- (1) The standards included in the state's curriculum frameworks, which define what all Arkansas students are to be taught, including specific grade level curriculum and a mandatory thirty-eight (38) Carnegie units defined by the Arkansas Standards of Accreditation to be taught at the high school level;
- (2) The standards included in the state's testing system. The goal is to have all, or all but the most severely disabled, students perform at or above proficiency on these tests; and
- (3) Sufficient funding to provide adequate resources as identified by the General Assembly.

The state's system for funding public schools is made up of a base per-student amount, known as foundation funding (A.C.A. § 6-20-2301 et seq.). Each district receives the foundation funding amount multiplied by the districts' three quarter average daily membership (ADM) from the prior year. The foundation funding was set at \$6,023 for 2010-11. The formula for arriving at that amount is known as the matrix.

FUNDING

Arkansas schools receive many different types of funding. Foundation funding makes up 53% of districts' total revenue. The charts on the following page illustrate the relationship of foundation funding revenue to districts' revenues from all sources. This report addresses how foundation funds are used by districts. The charts demonstrate that significant levels of additional unrestricted revenue are available to districts for meeting districts' adequacy needs. Other unrestricted revenue includes mills in excess of Uniform Rate of Tax (URT) and growth funding. An example of another funding classification, other revenue sources, is compensation for loss of assets. The largest classification—state restricted funds—includes categorical funds. An important source of federal funds is the Elementary and Secondary Education Act (ESEA) Title 1 funds to improve the educational achievement of disadvantaged students.



PER-PUPIL EXPENDITURES

Arkansas's per-pupil expenditures for FY2009 rank 9th among the 16 Southern Regional Education Board (SREB) states, when adjusted for the cost of living, and rank 11th without the adjustment. FY2009 is the most recent data available through the National Center for Education Statistics (NCES). See the following chart for the per-pupil expenditures in SREB states.

STATE	Mean Per-pupil Expense	Non-Adjusted PPE Rank	Cost of Living Index	Adjusted PPE Rank
Alabama	\$9,042	8	91.9	8
Arkansas	\$8,854	11	90	9
Delaware	\$12,109	2	102.3	1
Florida	\$8,867	10	101.7	15
Georgia	\$9,649	6	91.3	6
Kentucky	\$9,038	9	90.5	7
Louisiana	\$10,625	5	97.2	4
Maryland	\$13,737	1	125.7	5
Mississippi	\$8,064	14	92.6	16
North Carolina	\$8,518	13	96.7	14
Oklahoma	\$7,878	16	88.2	13
South Carolina	\$9,228	7	97.2	10
Tennessee	\$7,992	15	89	12
Texas	\$8,562	12	91	11
Virginia	\$10,928	3	99.1	3
West Virginia	\$10,821	4	93.7	2

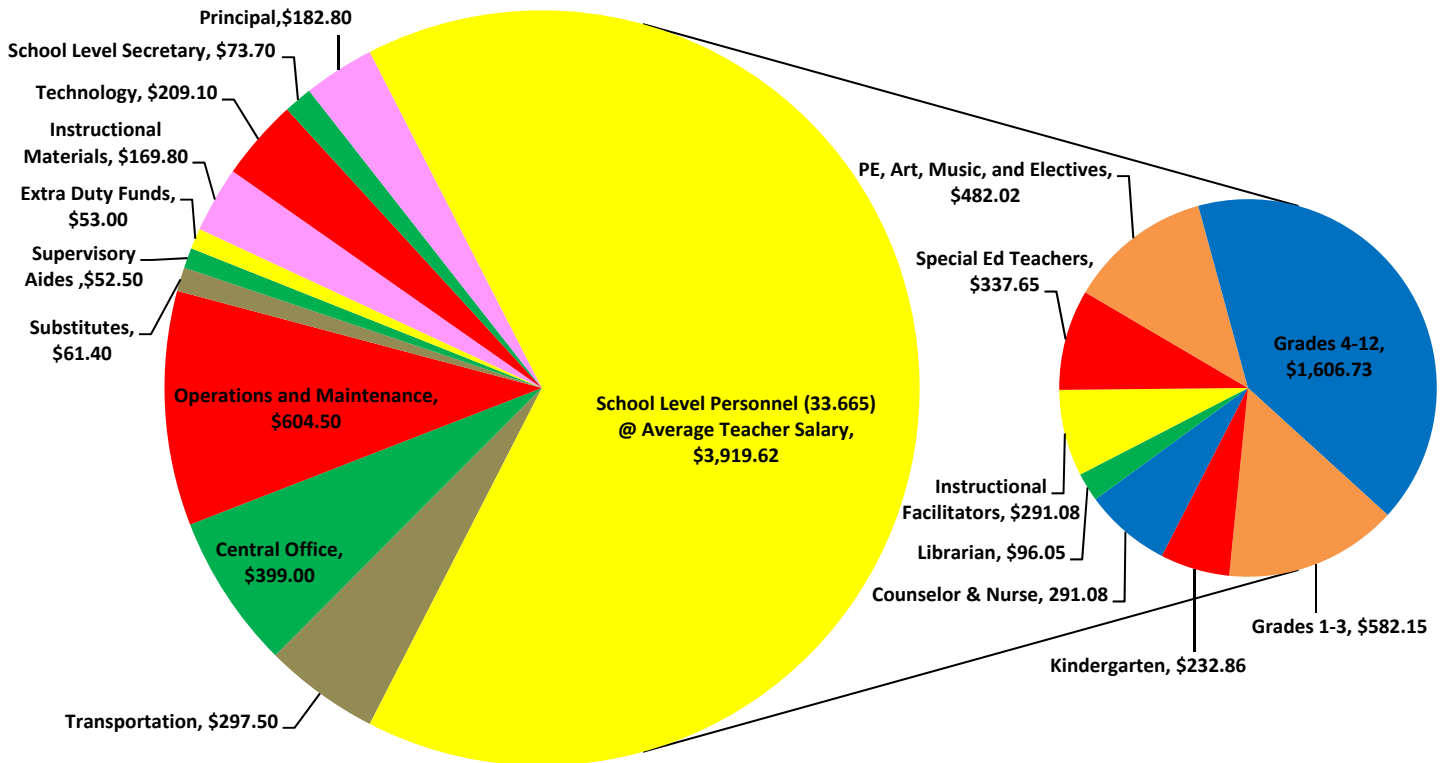
Source Per-pupil Expense: Snyder, T.D., and Dillow, S.A. (2012). *Digest of Education Statistics 2011* (NCES 2012-001). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC. Source Cost of Living Index: The Community Council for Economic Research. Cost of Living Index 1st Quarter 2008. Retrieved 08/05/2010 from http://www.missourieconomy.org/indicators/cost_of_living/index.stm

MATRIX FUNDING LEVELS 2005-2013

ADEQUACY									
Matrix Item	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Average Teacher Salary	39,000	40,287	41,717	43,702	44,575	45,493	46,428	47,382	48,356
+ Fringe Benefits	9,750	10,294	10,604	11,186	11,379	11,580	11,786	11,996	12,210
Total = Salary + Fringe	48,750	50,581	52,321	54,888	55,954	57,073	58,214	59,378	60,566
Per-student Amounts									
33.665* Teachers, Counselors, etc.	3,271	3,399	3,516	3,696	3,767	3,843	3,920	3,998	4,078
Secretary	0	0	0	70	71	72	74	75	77
Principal	144	147	153	172	176	179	183	187	190
Sub-Total School-Level Staffing	3,415	**3551	3,669	3,937	4,014	4,094	4,176	4,260	4,345
Teacher Continuing Education Pay	101	93	96	0	0	0	0	0	0
Technology	250	216	185	220	201	205	209	213	217
Instructional Materials	250	259	268	160	163	167	170	173	177
Extra Duty Funds	90	94	97	50	51	52	53	54	55
Supervisory Aides	35	36	37	49	50	51	53	54	55
Substitutes	63	57	59	59	59	60	61	63	64
Sub-Total School-Level Resources	789	755	742	538	525	535	546	557	568
Carry Forward Operations and Maintenance	1,152	1,180	1,206	581	581	593	605	616	629
Central Office				376	384	391	399	407	415
Transportation				286	286	292	298	304	310
Sub-Total District-Level Resources	1,152	1,180	1,206	1,243	1,251	1,276	1,301	1,327	1,354
Matrix	5,356	5,486	5,617	5,719	5,789	5,905	6,023	6,144	6,267
Cushion	44								
Retirement Add-on Enhanced		42	42	51	87	35			
Total Foundation Funding	5,400	5,528	***5662	5,770	5,876	5,940	6,023	6,144	6,267
* Amount varied slightly first 3 years									
** Amounts add to 3,546 but 3,551 was used									
*** Amounts add to 5,659 but 5,662 was used									

Breakout of 33.665 Teachers	
Matrix Item	FTE
Classroom Teachers	
Kindergarten	2.0
Grades 1-3	5.0
Grades 4-12	13.8
PAM (Non-Core)	4.14
Subtotal	24.94
Pupil Support	
Special Education	2.9
Instructional Facilitators	2.5
Librarian/Media	0.825
Counselors & Nurses	2.5
Subtotal	8.725
Total	33.665

Matrix Line Items



For additional information for each line item, see Appendix A.

SCHOOL SIZE AND GRADE DISTRIBUTION

In the 2003 report to the legislature, the consultants recommended basing the state's funding model on the amount of funding and staffing needed to operate a prototypical school of 500 students. The original matrix for developing a per-pupil funding amount was calculated based on that recommended school size. After a thorough review, the consultants concluded again in the 2006 study that the use of 500 students as the base school size is a valid model for per-pupil funding. Since that time the method of funding has been held constitutional by the Arkansas Supreme Court.

The following table shows that, as in previous years, 69 percent of the schools in FY2010-11 have fewer than 500 students. Open enrollment charter schools and special schools (e.g., Arkansas School for the Blind) were excluded. The size of schools has been substantially consistent for the past seven years. There is no evidence, based on the data compiled for the present BLR study, that the assumptions regarding school size need to be changed.

School Size								
# of Students	Base for Matrix 2004-05		2006-07		2008-09		2010-11	
	# of schools	%	# of schools	%	# of schools	%	# of schools	%
100 or less	58	5%	42	4%	35	3%	25	2%
101-249	229	21%	212	20%	215	20%	178	17%
250-349	228	21%	225	21%	221	21%	238	23%
350-499	271	25%	278	26%	280	26%	276	27%
500 or more	320	29%	315	29%	316	30%	314	31%

Note: Percents do not add to 100% because of rounding.

An individual school does not typically have grades K-12, but for the purpose of establishing a model, the prototypical school of 500 is assumed to have 40 kindergarten students, 115 students in grades one through three (38.3 per grade), and 345 students in grades four through 12 (38.3 per grade). This assumption is necessary because the funding model must account for the different staffing levels required for each of these grade groupings.

While the matrix was designed for schools with 500 students, its classroom teacher staffing assumptions concerning grade distribution for K through 12 invite comparison with school districts. For comparison the following table of district size is presented. Only 15 percent of districts have fewer than 500 students.

District Size		
# of Students	2010-11	
	# of Districts	%
350-499	36	15%
500-999	87	36%
1,000-2,499	73	31%
2,500-4,999	28	12%
5,000 or more	15	6%

The following table shows how closely the matrix assumptions regarding the number of students per grade matched actual district data.

Class Size and Grade Distribution Assumptions								
Grade Level	Pupil/Teacher Ratio Standards		Enrollment by Grade					
	Avg. in Standards	Max. in Standards	Matrix Assumptions		AR Students 2006-07		AR Students 2010-11	
			#	%	#	%	#	%
Kindergarten	20:1	20:1	40	8%	39	7.82%	41	8.20%
Grades 1-3	23:1	25:1	115	23%	114	22.80%	119	23.80%
Grades 4-12	25:1	28:1	345	69%	346	69.34%	340	68.00%
Totals K-12*			500	100%	500	100%	500	100%

*Rounding

The matrix uses average class size required by the standards of accreditation for grades 4-6 to determine the staffing levels needed for grades 4-12. The average student-teacher ratio allowed in the standards is two students higher in grades 7-12.

SCHOOL-LEVEL STAFFING

Staffing and funding of school-level personnel is critical. Nearly 70 percent of the 35,665 FTE school-level personnel funded in the matrix are classroom teachers who have direct daily interaction with students. Many studies consider the quality of the classroom teacher to be the most important factor in student achievement. In addition to traditional classroom teachers, school-level personnel include special education teachers, instructional facilitators, librarians, counselors, nurses, principals, and other health and clerical support. Funding for the total school-level personnel group constitutes 69% of the per-pupil funding contained in the FY2010-11 matrix.

The staffing levels established in the matrix were developed in the original 2003 funding study based on the staffing requirements established by ADE Rules Governing Standards for Accreditation of Arkansas Public Schools and School Districts (Standards for Accreditation). The 2003 consultants' report also reported the results of professional judgment panels and best practices research to calculate adequate staffing levels. The resulting matrix staffing and funding levels were confirmed in the subsequent 2006 study and were components of the funding system that the Arkansas Supreme Court found constitutional.

CLASSROOM TEACHERS

Definition

The matrix separates classroom teachers into two groups. The first group, referred to in this report as core teachers, includes teachers whose primary responsibility in lower grades is to serve as the primary classroom teacher and in higher grades is to teach in one or more of four academic areas: literacy, math, science, and social studies. The second group, referred to in this report as non-core teachers, includes educators who teach physical education, art, or music (PAM), or other electives. This line item is referred to in shortened form as "PAM teachers" on matrix spreadsheets, but a variety of teachers have always been included in this line item. The 2003 consultants' study refers these teachers as "specialist teachers" making up 20% of the teachers for elementary, middle and high school. In the 2006 consultants' study, these teachers are described in a section labeled "Specialist teachers: Art, Music, Physical Education, etc." In that study Odden et al. noted, "Act 59 allocates resources for specialist teachers (e.g., music, art, physical education, elective teachers) at the rate of an additional 20 percent over core teachers."

Both the 2003 and 2006 studies recommended that schools calculate the number of non-core teachers they need at 20% of the total core academic teachers. Twenty percent of 20.8 core teachers is 4.16 (4.14 is the number in the matrix as a result of rounding adjustments) non-core teachers per 500 students.

Expenditures

In 2011, districts statewide spent \$1.238 billion on classroom teachers. This equates to approximately \$2,707.94 per student. The matrix funded \$2,903.76 per student for classroom teachers for FY 2010-11. The expenditure per student for all students equates to 45.52% of the overall matrix rather than 48.21% of the matrix provided funding.

2010-11 Classroom Teachers Funding and Expenditures Per Student			
Matrix Funding Amount	Foundation Expenditures Per Student	Amount More or Less Than Matrix	All Expenditures From Salary & Operating Funds
\$2,903.76	\$2,707.94	-\$195.82	\$2,964.34

Staffing

The average number of combined classroom teachers is slightly lower than the staffing level established in the matrix. The following table compares the matrix number for classroom teachers with the average FTE for all districts.

2010-11 Classroom Teachers			
Matrix FTE Number Per 500	Foundation Paid Staff Per 500	FTE More or Less Than Matrix	FTE From All Salary & Operating Funds
24.94	24.20	-0.74	26.45

Districts spend less than what is provided in the matrix for classroom teachers and have slightly fewer teachers.

Supporting Information

The number of classroom teachers funded by the matrix was calculated by dividing the number of students by the average number of pupils per teacher established by state standards. The matrix assumptions are shown in the following table. PAM or non-core teachers are listed separately in the matrix but also contribute to meeting these staffing requirements.

Matrix Assumptions for Average Classroom Teacher Staffing Levels			
Grade Level	Average Pupil/Teacher Ratio	# of Students	# of Teachers
Kindergarten	20:1	40	2
Grades 1-3	23:1	115	5
Grades 4-12	25:1	345	13.8
Totals		500	20.8

BLR staff confirmed with ADE in 2010 that the Average Pupil/Teacher Ratio is not enforced for accreditation purposes. Districts use the Maximum Pupil/Teacher Ratio from the Arkansas Standards of Accreditation. When districts comply with only the maximum ratio standards and not the average ratio standards, 2.3 fewer teachers per 500 students are needed. The average class size requires 20.8 teachers, and the maximum class size requires 18.5 teachers. The additional 2.3 teachers alleviate staffing concerns related to additional classes required when a single student exceeds the classroom size standard, e.g., a school with 24 first grade students would need 2 first grade teachers using the average first grade classroom size but would only need 1 first grade teacher using the maximum classroom size.

Standards Requirements For Maximum Classroom Teacher Staffing Levels			
Grade Level	Maximum Pupil/Teacher Ratio	# of Students	# of Teachers
Kindergarten	20:1	40	2
Grades 1-3	25:1	115	4.6
Grades 4-6	28:1	115	4.2
Grades 7-12	30:1	230	7.7
Totals		500	18.5

AVERAGE TEACHER SALARY

The average teacher salary in the matrix is used to compute costs for the standards-based 33,665 school-level positions in the matrix. These positions include classroom teachers, special education teachers, instructional facilitators, librarians, counselors and nurses. Increases to the teacher salary in the matrix have not been based on the ADE reported average teacher salaries for a particular year. Rather the line items for certified positions have been increased by the percentage increase approved for foundation funding by the Education Committees in the funding formula act for each year. For 2005, the base year, the salary was \$39,000 and each subsequent year a percentage increase has been added to the base salary. After that increase is made, the benefits are adjusted by adding approximately 22% in benefits and a flat rate of \$1,572 for health insurance. The health insurance amount is the annualized amount of the required \$131 in monthly health insurance benefits that districts are required to provide per A.C.A. §6-17-1117(a). This amount is added to matrix funding for all employees even though some employees elect not to participate in the public school employees' health insurance program. This results in savings to some districts. Also, some districts contribute in excess of the \$131 per month for participating employees.

A.C.A. §6-17-1117(a). Health insurance.

(a) Beginning on October 1, 2004, local school districts shall pay the health insurance contribution rate of one hundred thirty-one dollars (\$131) per month for each eligible employee electing to participate in the public school employees' health insurance program.

The average teacher salary with benefits in the matrix is \$58,214 for FY2011. The actual average teacher salary is \$46,823 for FY 2010-11 using the BLR and ADE revised calculation. When benefits are added, the amount is \$58,696. The median salary with benefits is \$52,996. The majority of districts (197 or 82% of the 239 districts) had averages plus benefits below the average teacher salary and benefits in the matrix. Higher salaries in larger districts appear to be driving the statewide average salary higher. The 24 districts (10%) with the highest teacher salary averages employ over one-third (35%) of the FTE teachers in the state. In other words, the funding for the average teacher salary and benefits in the matrix meets or exceeds the average teacher salary in 82% of the districts in the state.

MINIMUM SALARY SCHEDULE AND STEPS

Each step in the minimum salary schedule costs the districts \$450 for bachelor's degrees and \$500 for master's degrees. This is in addition to any COLA or year-end bonus that teachers may receive. The schedule is established in Arkansas Code § 6-17-2403. For FY2011 the minimum salary for a bachelor's degree remained at \$29,244, and the minimum salary for a master's degree was \$33,630. The schedule was last updated for FY2009. If it remains unchanged, the minimum salary will be the same in 2015 as it was in 2009.

REQUIRED NUMBER OF CLASSROOM TEACHERS

There are many additional factors that may cause districts to need more or fewer classroom teachers than the standards of accreditation would dictate if every class for every student was led by a certified teacher in a standard class size environment.

- Larger Class Sizes--The Standards permit increased classroom sizes for physical education and other classes in approved cases such as study halls.
- Required Personnel--Certain classes do not require certified personnel, e.g., study hall and distance learning classes.

- Instructional Facilitators—A higher number of classes taught by instructional facilitators, funded through that matrix line item, reduces the need for classroom teachers.
- Concurrent Credit--Concurrent credit courses reduce the need for certified personnel because these classes are taught by higher education personnel in most cases. In the district survey, superintendents indicated the number of students taking concurrent credit, AP classes, and classes via distance learning.

	SIZE			NSLA STATUS			ACHIEVEMENT			STATE
	SMALL	MED	LARGE	HIGH%	MID%	LOW%	HIGH	MID	LOW	
Number of Students										
Advanced Placement and Concurrent Credit	264	1,695	6,487	89	1,527	6,830	3,396	3,050	2,000	8,446
Advanced Placement Without Concurrent Credit	602	2,747	17,994	210	3,911	17,222	8,051	7,854	5,438	21,343
Concurrent Credit Class at Career Technical Center or Other Institution of Higher Education	109	923	4,620	43	1,253	4,356	1,535	2,805	1,312	5,652
Concurrent Class at District's Campus	330	1,787	4,633	0	1,138	5,612	2,667	2,515	1,568	6,750
Concurrent Credit Class Through Distance Learning	141	663	378	11	382	789	245	591	346	1,182
Distance Learning Class Without Concurrent Credit	931	2,320	1,539	91	1,460	3,239	982	2,535	1,273	4,790

- Special Education Students--Defined as students with an individual education plan (IEP), special education students constituted approximately 11.52% or 54,015 students statewide. A smaller set of these students were in self-contained classrooms for most or all of the day. The percentage of each day's classes that each student spends in self-contained classes is not tracked by districts or ADE. The matrix provides special education classroom teachers for the students in self-contained classes in a separate matrix line item. To accurately reflect the needed number of classroom teachers in the classroom teachers line items of the matrix, these students should be removed from the student counts. However, because an exact breakdown of the number of classes taken by these students in regular classrooms and in special education classes is unavailable, all of them remain in the student counts, which inflates the number of classroom teachers needed. Data from the school survey indicate that 1.56% FTE for special education students at those 74 schools were in self-contained classrooms.

- 38 Units--Concerns persist that the matrix does not provide adequate staffing to cover the 38 units required by the Standards of Accreditation. For a list of the requirements for the 38 units, see Appendix B. According to the FY2010 school district survey, all districts offer the 38 units, and the average district offers almost double the required units. The requirements for AP classes may count in the place of a specified 38 unit course upon approval by ADE, according to the Standards of Accreditation.
- Licensure Limitations--Another concern is that licensure requirements result in the need for more teachers within a district. Most of the schools that have been cited or are on probation for failing to meet state accreditation standards have failed to meet licensure requirements for teachers.
- Calculating Classroom Teachers--It should be noted that grades K-4 require more personnel per student than grades 5-12 to comply with staffing requirements in the Standards of Accreditation. The matrix is designed to provide staffing for an average of all grades. The 24.94 classroom teachers that are provided by the matrix, including PAM teachers, will adequately staff for any grade configuration using the average classroom size or the maximum classroom size.

Staffing needed for five grades at a 500 student elementary school:

Grade	Students	Class Size	Teachers Needed with Average Classroom Size
K	100	20	5.00
1	100	23	4.35
2	100	23	4.35
3	100	23	4.35
4	100	25	4.00
Total for school of 500	500	25	22.05

Staffing needed for five grades at the middle and high school level:

Grade	Students	Class Size	Teachers Needed with Average Classroom Size
8	100	25	4
9	100	25	4
10	100	25	4
11	100	25	4
12	100	25	4
Total for school of 500	500	25	20

- Teacher Planning Time--Teacher planning time also affects the number of teachers needed. Arkansas state law requires 200 minutes per week.

6-17-114. Daily planning period.

Statute text

(a) (1) Effective beginning the 2003-2004 school year, each school district in this state shall provide a minimum of two hundred (200) minutes each week for each teacher to schedule time for conferences, instructional planning, and preparation for all classroom teachers employed by the school district.

(2) (A) The planning time shall be in increments of no less than forty (40) minutes during the student instructional day unless a teacher submits a written request to be allowed to have his or her planning time scheduled at some time other than during the student instructional day.

- Additional Classes Required for Class Size Standards--Districts have expressed concern about the need for an additional teacher when a grade has one student too many. In their most recent book on school finance policies, Odden and Picus (2008) suggest an approach referred to as a "step" function. This "step" function would add an FTE at a specified number of students above the classroom size per grade but below the size of another full classroom (Odden and Picus, 2008). They note, however, that such a function is impractical to implement in a statewide funding formula. They also noted that extra students per grade can be handled another way, referencing a 2005, report from the Rural School Community Trust (Malhoit, 2005) which lists the prevalence of multiage classrooms in rural schools as one of several advantages that small, rural schools provide (Odden and Picus, 2008).

PHYSICAL EDUCATION, ART, AND MUSIC (PAM)

State law establishes the number of minutes per week of physical education, art, and music that must be provided for K-12 students. For elementary students, the total number of instructional minutes in a week is 1,800 minutes, consisting of six 60-minute periods per day for five days. The requirement for physical education in elementary school is 60 minutes per week, art is 40 minutes, and music is 40 minutes, for a total of 140 minutes per week. When the 140 minutes per week is divided by the total number of minutes per week, the teaching time generated is 8% of the total time. According to the standards, 20.8 teachers could cover the entire school day. Therefore, 1.7 teachers are required to cover 140 minutes of required non-core instructional time. The legal requirements for each of these areas of instruction follow:

Physical Education 6-16-132

(b) (1) (A) The physical education curriculum and physical activity requirements for every public school student who is physically fit and able to participate are:

(i) Except as provided in subdivision (b)(1)(A)(ii) of this section, for students in kindergarten through grade six (K-6):

(a) Sixty (60) minutes of physical education training and instruction each calendar week of the school year; and

(b) Ninety (90) minutes of physical activity each calendar week of the school year, which may include without limitation daily recess, physical education instruction in addition to the requirement of subdivision (b)(1)(A)(i)(a) of this section, or intramural sports;

(ii) For students in grades five through eight (5-8) who attend a public school organized to teach grades five through eight (5-8), or any combination thereof, sixty (60) minutes of physical education training and instruction each calendar week of the school year or an equivalent amount of time in each school year, with no additional requirement for physical activity; and

(iii) For students in grades nine through twelve (9-12), one-half ($\frac{1}{2}$) unit of physical education as required for high school graduation, with no additional requirement for physical activity.

Art and Music 6-16-130

(b) (1) By no later than June 1, 2005, every public elementary school in the state shall provide instruction for no less than forty (40) minutes in visual art and no less than forty (40) minutes in music based on the state visual art and music frameworks each calendar week of the school year or an equivalent amount of time in each school year.

(2) (A) Every student in grades one through six (1-6) shall participate in the visual art and music class required in this subsection.

(B) Children with disabilities or other special needs shall be included in the visual art and music programs.

(3) The instruction required by subdivision (b)(1) of this section shall be provided by a licensed teacher certified to teach art or music, as applicable.

20% NON-CORE TEACHERS

The rationale for providing 20% non-core teachers can be found in the 2003 consultants' study.

Teachers need some time during the regular school day for collaborative planning, job-embedded professional development, and ongoing curriculum development and review. Schools also need to teach art, music, library skills, and physical education. Providing each teacher one period a day for collaborative planning and professional development focused on the school's curriculum requires an additional 20 percent allocation of teachers to those needed to provide the above class sizes. This assumes a five-hour teacher instructional day at the elementary level and a five period day at the high school. Alternative school organization models might require modification of the 20 percent figure. In our view, the adequate resource model should recommend an appropriate percentage--in this case 20 percent--and schools that seek to implement alternative schedules or class schedules need to work those out within the resources provided. For example, "block scheduling" for high schools require an additional 33 percent of specialist teachers, assuming the school creates a four-period, 90-minute blocks (p.24).

By "additional 33 percent," the consultants mean above the number of core teachers not above the 20% of non-core teachers.

The FTE needed for non-core teachers could also be considered by considering teacher contracts that generally give teachers one free period per day. State Standards require instructional time of six hours per day or 30 hours per week. According to the 2010 district survey, just over half of the districts in Arkansas offer students the opportunity to take up to eight classes per semester. Just under half offer seven classes. Eight classes with core teachers covering seven classes would require only one-eighth of the 20.8 teachers required by standards, or 2.6, additional non-core teachers rather than the 4.14 teachers in the matrix. Seven classes with core teachers covering six classes would require only one-seventh non-core teacher, or 3, additional non-core teachers. A few districts have contract arrangements that establish core teachers covering only six of eight or five of seven periods. Those arrangements would double the required number of non-core teachers. In the 2010 district survey, administrators indicated the following number of courses/periods per day.

Type of School	7 Periods	8 Periods	Other
Middle School	94	120	30
High School	99	130	15

Surveys and Site Visits

Districts were asked for their own counts of staffing for positions funded through the matrix. The information was disaggregated by size, NSLA status, and the district's percent of students testing proficient and advanced provided by NORMES. The numbers below represent the average for each group. For example, the districts in the small group reported an average of 2.3 kindergarten teachers per 500 students. The total staffing level reported exceeds counts derived from the APSCN data for foundation only funding.

Classroom Teacher	SIZE			NSLA STATUS			ACHIEVEMENT			STATE AVERAGE
	SMALL	MED	LARGE	HIGH%	MID%	LOW%	HIGH	MID	LOW	
# of Kindergarten Teachers Per 500 Students	2.3	2.4	2.2	1.9	2.2	2.4	2.2	2.2	2.3	2.2
# of Teachers Grades 1-3 Per 500 Students	6.8	6.8	6.0	5.0	6.1	6.5	6.3	6.1	6.1	6.2
# of Teachers Grades 4-12 Per 500 Students	26.8	25.9	21.3	23.4	21.2	26.1	20.0	21.8	26.1	22.3

INSTRUCTIONAL FACILITATORS

Definition

In 2006, ADE provided the following definition of an instructional facilitator.

An instructional facilitator is responsible for facilitating continuous improvement in classroom instruction by providing instructional support to teachers in the elements of research-based instruction and by demonstrating the alignment of instruction with curriculum standards and assessment tools.

Position Description:

- Assists teachers in analyzing classroom and state assessment data to inform instruction
- Provides demonstration lessons in curriculum and teaching techniques for classroom teachers and others
- Facilitates communication about research based instructional practices and student achievement between and among teachers, within and across grade levels
- Assists in the implementation of the components of the Arkansas Comprehensive School Improvement Planning (ACSIP) process
- Plans and provides professional development learning opportunities for classroom teachers by conducting formal workshops, group discussions and one-on-one mentoring
- Provides differentiated assistance to teachers based on individual needs
- Facilitates and participates in district and building level training.

Instructional facilitators are also referred to as academic coaches and specialists.

The original consultants' study and the original matrix established a staffing level of 2.5 instructional facilitators per 500 students. The 2006 consultants' study indicated that .5 full-time equivalent (FTE) of the instructional facilitators line item was to be for technology expertise. The matrix used in the 2007-09 biennium adjusted the staffing level to two instructional facilitators per 500 students and a .5 FTE assistant principal.

The Standards for Accreditation (15.02) state that a half-time assistant principal, instructional supervisor or curriculum specialist is required for schools exceeding 500 students. Since any one of the three positions will meet the requirement, all three of these positions are counted toward the .5 FTE for this position in the line item.

Expenditures

In 2011, districts statewide spent \$54 million on instructional facilitators. This equates to approximately \$117.98 per student. The matrix funded \$291.08 per student for instructional facilitators for FY 2010-11. The expenditure per student for all students equates to 1.98% of the overall matrix, rather than 4.83% of the matrix provided funding.

2010-11 Instructional Facilitators Funding and Expenditures Per Student			
Matrix Funding Amount	Foundation Expenditures Per Student	Amount More or Less Than Matrix	All Expenditures From Salary & Operating Funds
\$291.08	\$117.98	-\$173.10	\$130.02

Staffing

The staffing level established in the matrix for instructional facilitators/assistant principals is more than three times the average number of instructional facilitators/assistant principals in districts. The following table compares the matrix number for instructional facilitators/assistant principals with the average FTE for all districts.

2010-11 Instructional Facilitators/Assistant Principals			
Matrix FTE Number Per 500	Foundation Paid Staff Per 500	FTE More or Less Than Matrix	FTE From All Salary & Operating Funds
2.5	0.68	-1.82	0.74

Supporting Information

Districts have instructional facilitators in addition to those for whom foundation funding is used. Instructional facilitators are also funded by National School Lunch Act (NSLA) state categorical funds; federal Title I funds which are used primarily to support schools with low-income students; or Title II funds through the Improving Teacher Quality Grant program.

According to ADE staff in 2010:

There is an endorsement for instructional facilitators, but it is not required. There were approximately 1,000 teachers serving in these roles across the state and until the preparatory programs are in place across the state at local [institutes of higher education] IHEs, we will provide support through the training of these individuals but we are NOT going to cause them or districts harm by requiring that endorsement at this time

Surveys and Site Visits

Districts were asked for their own counts of staffing for positions funded by all sources. The information was disaggregated by size, NSLA status, and the district's percent of students testing proficient and advanced provided by NORMES. The total staffing level reported exceeds counts derived from the APSCN data for foundation only funding.

Instructional Facilitators/ Asst. Principals	SIZE			NSLA STATUS			ACHIEVEMENT			STATE AVERAGE
	SMALL	MED	LARGE	HIGH%	MID%	LOW%	HIGH	MID	LOW	
# of Instructional Facilitators Per 500 Students	1.2	1.4	1.2	2.1	1.0	2.0	0.9	1.3	1.7	1.3
# of Assistant Principals/ Curriculum Specialists Per 500 Students	0.6	0.6	1.1	0.7	1.0	1.0	1.0	0.9	1.1	1.0
# of Academic Coaches Per 500 that also teach	0.71	0.44	0.13	0.45	0.15	0.36	0.13	0.23	0.24	0.20

The BLR also surveyed the 74 schools concerning their practices with instructional facilitators. The table that follows shows the results.

Academic Coaches/Instructional Facilitators		
# of Full-Time Academic Coaches Per 500	Math	0.69
	Literacy	0.98
	Science	0.20
	Social Studies	0.19
# of Part-Time Academic Coaches Per 500	Math	0.30
	Literacy	0.27
	Science	0.10
	Social Studies	0.50
Academic Coaches Model Teaching Skills or Content to Teachers		
Average # of Times Each Month	Math	3.56
	Literacy	5.22
	Science	0.26
	Social Studies	0.26
Academic Coaches Meet With Teachers		
Average # of Times Each Month	Math	5.21
	Literacy	6.48
	Science	0.66
	Social Studies	0.58

SPECIAL EDUCATION TEACHERS

Definition

The following information is provided by ADE.

Arkansas school districts determine their special education services staffing needs based upon the population of students with disabilities identified for special education in the district, the array of services needed to fulfill the individualized education programs (IEPs) of those students and each student's placement on the continuum of placement options or least restrictive environment (LRE). This is done in accordance with the special education teacher-to-pupil caseload and class size requirements specified in Arkansas rules: Special Education and Related Services: Procedural Requirements and Program Standards, Section 17.00 Program Standards. Because categories of disabilities under IDEA can range from mild to severe/profound in their impact, the placements for receipt of services range from the least restrictive, most natural or typical setting of "regular class, indirect services" all the way to what is usually considered the most restrictive and unnatural education setting, "hospital/homebound."

Expenditures

In 2011, districts statewide spent \$156.8 million on special education teachers. This equates to approximately \$342.92 per student for special education teachers for FY 2010-11. The expenditure per student for all students equates to 5.76% of the overall matrix, rather than 5.61% of the matrix provided funding.

2010-11 Special Education Teacher Funding and Expenditures Per Student			
Matrix Funding Amount	Foundation Expenditures Per Student	Amount More or Less Than Matrix	All Expenditures From Salary & Operating Funds
\$337.65	\$342.92	\$5.26	\$376.29

Staffing

The average number of special education teachers is slightly more than the staffing level established in the matrix. The following table compares the matrix number for special education teachers with the average FTE for all districts.

2010-11 Special Education Teacher FTE			
Matrix FTE Number Per 500	Foundation Paid Staff Per 500	FTE More or Less Than Matrix	FTE From All Salary & Operating Funds
2.9	2.93	0.03	3.20

Supporting Information

In the 2003 consultants' report the authors stated:

The most progressive approach today is called a "census" approach to providing such resources [staffing]. This approach, which is embodied in the current school finance formula, assumes the incidence of these categories of disabilities is approximately equal across districts and schools and includes resources for providing needed services at an equal rate to all districts in the base allocation. Testimony from the Arkansas Department of Education, and experience around the state, shows that all districts and schools are able to provide students with mild and moderate disabilities, including students with speech and hearing handicaps, an appropriate and adequate level of services with current resources. Thus the Committee recommends that each prototypical school of 500 students be provided an additional 2.9 positions for these services (p.26).

In a separate 2008 text, the consultants note that, "The equity depends on the distribution of special-education students across all the districts in the state" (Odden and Picus, 2008).

The needs of special education students dictate the level of staffing required. In the past ADE described some attributes that affect staffing needs.

- Students may be in self-contained classrooms or mainstream classrooms for differing amounts of the day. This varies by student and may change throughout the school year for each student.
- Some students receive services from multiple providers but are counted in an unduplicated count for reporting.
- Students must be served in chronologically age-appropriate settings, regardless of their current actual performance levels which requires adequate staffing for each academic level – elementary, middle/junior high, senior high school.
- The actual make up of the students with disabilities also will influence the number of personnel needed, given that some require personal aides, not just an aide for the classroom, and possibly services such as a private-duty nurse. These latter services, however, may qualify as Related Services under IDEA and are often reimbursable under private or public insurance, such as Medicaid.

ADE further explained that the purpose of the base funding is to cover the average cost of educating students with special needs, and students with needs that exceed the average costs are largely covered by the state line item reimbursement funds for districts that incur those costs. The utilization and growth rates for those line items are determined and adjusted through the Public School Fund budget requests. Because base funding for special education is embedded in the current Foundation Aid, the funding keeps pace with any increase in the average cost of providing special education services to identified students with disabilities.

Surveys and Site Visits

Districts were asked for their own counts of staffing for positions funded by all sources. The information was disaggregated by size, NSLA status, and the district's percent of students testing proficient and advanced provided by NORMES. The total staffing level reported slightly exceeds counts derived from the APSCN data for foundation only funding.

Special Education	SIZE			NSLA STATUS			ACHIEVEMENT			STATE AVERAGE
	SMALL	MED	LARGE	HIGH%	MID%	LOW%	HIGH	MID	LOW	
# of Special Education Teachers Per 500 Students	3.4	3.5	3.3	3.6	3.2	3.6	3.3	3.2	3.6	3.3

LIBRARIANS AND MEDIA SPECIALISTS

Definition

State Standards for Accreditation (16.02.3) for library media specialists require schools with fewer than 300 students to have a 1/2 time library media specialist (0.5 per 300 is 0.83 per 500); schools with 300 to 1,499 students must have a full-time library media specialist (1.0); and schools with 1,500 or more students must have two library media specialists (two per 1,500 is 0.67 per 500).

Expenditures

In 2011, districts statewide spent \$52.8 million of foundation funds on librarians and media specialists. This equates to approximately \$115.52 per student. The matrix funded \$96.05 per student for librarians for FY 2010-11. The expenditure per student equates to 1.94% of the overall matrix, rather than 1.59% of the matrix provided funding.

2010-11 Librarians Funding and Expenditures Per Student			
Matrix Funding Amount	Foundation Expenditures Per Student	Amount More or Less Than Matrix	All Expenditures From Salary & Operating Funds
\$96.05	\$115.52	\$19.47	\$126.22

Staffing

The average number of librarians is 0.93 per 500 students, while the staffing level established in the matrix is 0.825. The following table compares the matrix number for librarians with the average FTE for all districts.

2010-11 Librarians			
Matrix FTE Number Per 500	Foundation Paid Staff Per 500	FTE More or Less Than Matrix	FTE From All Salary & Operating Funds
0.825	0.93	0.10	1.01

Supporting Information

The current matrix funding level is the result of the following analysis, which was developed in 2006 using varying staffing levels based on state standards for the different sized schools.

School Size	# of Schools in 2006	Required Librarians	Librarians Multiplied by # of Schools
Under 300	407	0.5	203.5
300-1500	689	1.0	689
Over 1500	10	2.0	20
Totals	1,106	0.825	912.5

Surveys and Site Visits

Districts were asked for their own counts of staffing for positions funded by all sources. The information was disaggregated by size, NSLA status, and the district's percent of students testing proficient and advanced provided by NORMES. The total staffing level reported coincides closely with counts derived from the APSCN data for foundation only funding.

Librarians	SIZE			NSLA STATUS			ACHIEVEMENT			STATE AVERAGE
	SMALL	MED	LARGE	HIGH %	MID %	LOW %	HIGH	MID	LOW	
# of Librarians/ Media Specialists Per 500 Students	1.5	1.5	0.9	1.3	1.0	1.2	0.9	1.1	1.2	1.1

COUNSELORS AND NURSES

Definition

The matrix established a staffing level for counselors and nurses of 2.5 positions. These positions may also include speech therapists, social workers, psychologists, and family outreach workers. State standards require one counselor per 450 students, or approximately 1.11 per 500 students. State law requires one school nurse per 750 students if funding is available, or .67 per 500 students. The funding for nurses is provided through this matrix line item. This leaves approximately 0.72 positions for student services personnel required under the Public School Student Services Act, A.C.A. § 6-18-1001 et seq.

Calculation for Counselors, Nurses, and Other Student Services Personnel

1.11 positions for a counselor (1 per 450 in standards)

0.67 positions for a nurse (1 per 750 in code)

0.72 positions for additional student services personnel

2.50

Expenditures

In 2011, districts statewide spent \$108.6 million on counselors and nurses. This equates to approximately \$237.58 per student. The matrix funded \$291.08 per student for counselors and nurses for FY 2010-11. The expenditure per student for all students equates to 3.99% of the overall matrix, rather than 4.83% of the matrix provided funding. Districts are not spending all the available resources provided through the matrix for counselors and nurses.

2010-11 Counselors and Nurses (Student Support) Funding and Expenditures Per Student			
Matrix Funding Amount	Foundation Expenditures Per Student	Amount More or Less Than Matrix	All Expenditures From Salary & Operating Funds
\$291.08	\$237.58	-\$53.50	\$262.37

Staffing

The average number of counselor and nurse positions is nearly one-fifth less than the staffing level established in the matrix. The following table compares the matrix number for counselors and nurses with the average FTE for all districts.

2010-11 Counselors and Nurses (Student Support) Total			
Matrix FTE Number Per 500	Foundation Paid Staff Per 500	FTE More or Less Than Matrix	FTE From All Salary & Operating Funds
2.5	2.02	-0.48	2.22
2010-11 Counselors FTE			
Matrix FTE Number Per 500	Foundation Paid Staff Per 500	FTE More or Less Than Matrix	FTE From All Salary & Operating Funds
1.11	1.15	0.04	1.26
2010-11 Nurses FTE			
Matrix FTE Number Per 500	Foundation Paid Staff Per 500	FTE More or Less Than Matrix	FTE From All Salary & Operating Funds
0.67	0.49	-0.18	0.54
2010-11 Other Student Support FTE			
Matrix FTE Number Per 500	Foundation Paid Staff Per 500	FTE More or Less Than Matrix	FTE From All Salary & Operating Funds
0.72	0.38	-0.34	0.41

Supporting Information

The required number of counselors and nurses is established through state standards and state law respectively. According to ADE Standards -- Section 16.01.3, "Each school shall assign appropriate certified counselor staff with the district being required to maintain an overall ratio of one (1) to four hundred fifty (450)."

State law provides the following:

6-18-706. School nurse.

Statute text

(a) In order to improve the health status and educational achievement of the children of this state, the General Assembly hereby determines that an appropriate school nurse-to-student ratio is essential to effectively meet the health care needs of these children.

(b) For purposes of this section, "school nurse" means a licensed nurse engaging in school nursing activities.

(c) (1) Beginning with the 2004-2005 school year, all school districts shall have no fewer than the full-time equivalent of one (1) school nurse per seven hundred fifty (750) students or the proportionate ratio thereof.

(2) In districts having a high concentration of children with disabling conditions as determined by the State Board of Education, the ratio of school nurses to students should be one (1) to four hundred (400) in those schools so designated.

(3) In a district that provides a center for profoundly disabled students, the ratio should be one (1) school nurse per one hundred twenty-five (125) students at that center.

(d) (1) School nurses may be employed or provided by contract or agreement with other agencies or individuals provided that the prescribed ratio and equivalency are maintained.

(2) However, no school nurse may be employed by, or contract with, any public secondary or elementary school of this state except with the prior approval of the local school board of directors.

(e) (1) The provisions of this section shall be effective only upon the availability of state funds.

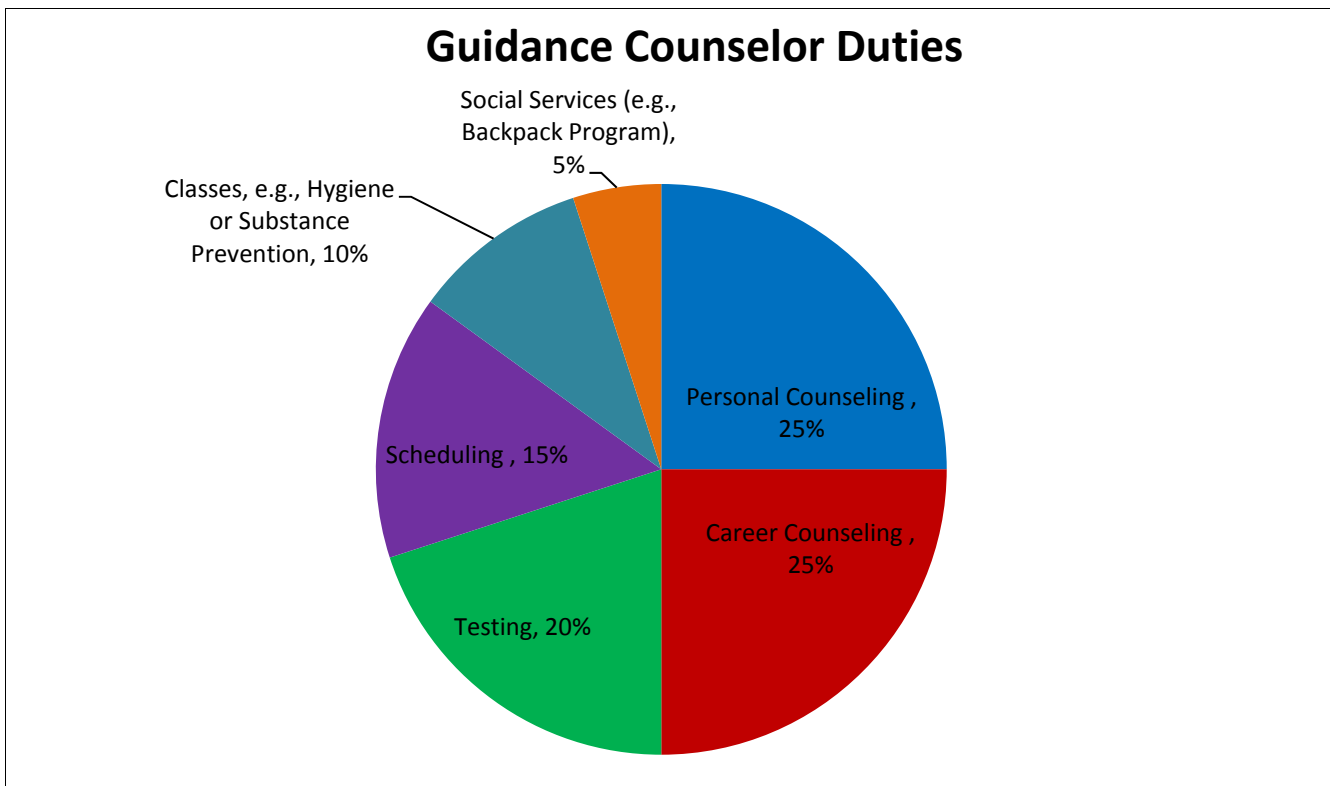
(2) Available funds shall be distributed to school districts based on the previous year's three-quarter average daily membership.

Surveys and Site Visits

Districts were asked for their own counts of staffing for positions funded by all sources. The information was disaggregated by size, NSLA status, and the district's percent of proficient and advanced students provided by NORMES. The total staffing level reported exceeds counts derived from the APSCN data for foundation only funding.

Counselors/ Nurses/ Student Support	SIZE			NSLA STATUS			ACHIEVEMENT			STATE AVERAGE
	SMALL	MED	LARGE	HIGH%	MID%	LOW%	HIGH	MID	LOW	
# of Counselors Per 500 Students	1.7	1.7	1.3	1.3	1.4	1.5	1.3	1.4	1.6	1.4
# of Nurses Per 500 Students	1.2	1.0	0.8	1.0	0.8	1.1	0.8	0.8	1.0	0.9
# of Speech Therapists Per 500 Students	0.9	0.7	0.7	0.5	0.7	0.6	0.7	0.7	0.7	0.7

During site visit interviews, school leaders shared information concerning guidance counselors and nurses. All principals indicated that they have access to a counselor, and the majority reported one FTE counselor. Larger schools of around 700 or more typically have another part-time or full-time counselor. Duties vary across schools, and where there is more than one counselor, one is often assigned personal counseling and the other handles the administrative responsibilities. A typical pattern of duties includes the following:



Duties, for many counselors, vary considerably by time of the year. In many schools, test administration becomes a full-time responsibility during the Spring semester, and little time can be devoted to personal and career counseling. Several principals indicated that they needed social workers in addition to counselors, or more counselors. Many principals lamented the fact that counselors had to assume testing responsibilities by default because there was no other person available to handle that level of responsibility (e.g., securing tests).

Principals also discussed nursing staff. The configuration of nursing statewide is varied, with part-time and full-time staff, and RN and LPN certifications. Many schools share a nurse with other schools in the district. This sharing presents problems in geographically large districts when emergencies arise and the nurse is located several miles away at another school. The majority of small schools reported 0.5 FTE nursing staff. There was a core of nursing duties that were reported at nearly all schools, including dispensing medications, immunizations, handling injuries and illnesses, and health screening. Many nurses also teach various health-related classes, such as dieting, hygiene, and wellness. A few nurses conduct wellness classes for faculty, and there are several who make home visits to address health-related issues in the family.

Regarding the adequacy of nursing staff, two-thirds of the responses were almost equally divided between having minimally adequate staff and not having enough nurses. About another third of the principals reported that they had adequate nursing staff. Several indicated that they needed a full-time nurse instead of part-time.

SCHOOL-LEVEL ADMINISTRATION PERSONNEL

Principals and their building-level clerical support are correctly considered the glue that holds a school together. Principals must provide the operational management and instructional leadership to make schools run smoothly and to improve student achievement. The duties completed by school clerical personnel are too numerous to list completely, but they include record-keeping, answering phones, managing the office, and serving as a liaison to parents.

PRINCIPALS

Definition

The matrix established staffing for principals at a level of one per 500 students. Standards require that every school employ at least a half-time principal, and schools with 300 or more students must have a full-time principal. Schools of 500 students or more must have a full-time principal and a half-time assistant principal, instructional supervisor, or curriculum specialist. The half-time assistant principal, instructional supervisor, or curriculum specialist are funded in the instructional facilitator line item.

Expenditures

In 2011, districts statewide spent \$85.7 million on principals. This equates to approximately \$187.38 per student. The matrix funded \$182.80 per student for principals for FY 2010-11. The expenditure per student for all students equates to 3.15% of the overall matrix, rather than 3.04% of the matrix provided funding.

2010-11 Principals Funding and Expenditures Per Student			
Matrix Funding Amount	Foundation Expenditures Per Student	Amount More or Less Than Matrix	All Expenditures From Salary & Operating Funds
\$182.80	\$187.38	\$4.58	\$205.19

Staffing

The average number of principal positions is slightly lower than the staffing level established in the matrix. The following table compares the matrix number for principals with the average FTE for all districts.

2010-11 Principals FTE			
Matrix FTE Number Per 500	Foundation Paid Staff Per 500	FTE More or Less Than Matrix	FTE From All Salary & Operating Funds
1	0.99	-0.01	1.08

Supporting Information

In the 2006 study, the consultants concluded that although state standards require one principal per 300 students, existing matrix funding should support one principal for a school of 500 students. They reasoned that the actual salaries paid in smaller schools are typically low enough that the salary funding provided in the matrix is adequate even for schools with fewer than 500 students. Moreover, the salary level for principals was increased significantly in the 2007 matrix update.

Surveys and Site Visits

Districts were asked for their own counts of staffing for positions funded by all sources. The information was disaggregated by size, NSLA status, and the district's percent of students testing proficient and advanced provided by NORMES. The total staffing level reported slightly exceeds counts derived from the APSCN data for foundation only funding.

Principals	SIZE			NSLA STATUS			ACHIEVEMENT			STATE AVERAGE
	SMALL	MED	LARGE	HIGH%	MID%	LOW%	HIGH	MID	LOW	
# of Principals Per 500 Students	2.1	1.7	1.0	1.6	1.1	1.4	1.0	1.2	1.3	1.1

SCHOOL-LEVEL SECRETARY

Definition

Clerical support is not required by state standards. However, when the matrix was originally developed the legislature believed that, as a practical matter, there is a clear need for clerical support. Therefore the matrix established staffing for clerical support at a level of one secretary position per 500 students.

Expenditures

In 2011, districts statewide spent \$46.5 million on school secretaries. This equates to approximately \$101.76 per student. The matrix funded \$73.70 per student for school secretaries for FY 2010-11. The expenditure per student for all students equates to 1.71% of the overall matrix, rather than 1.22% of the matrix provided funding.

2010-11 School Secretary Funding and Expenditures Per Student			
Matrix Funding Amount	Foundation Expenditures Per Student	Amount More or Less Than Matrix	All Expenditures From Salary & Operating Funds
\$73.70	\$101.76	\$28.06	\$112.68

Staffing

The average number of clerical positions is one and two-thirds times the staffing level established in the matrix. The following table compares the matrix number for clerical support with the average FTE for all districts.

2010-11 School Secretary Staffing FTE			
Matrix FTE Number Per 500	Foundation Paid Staff Per 500	FTE More or Less Than Matrix	FTE From All Salary & Operating Funds
1	1.67	0.67	1.84

Surveys and Site Visits

Districts were asked for their own counts of staffing for positions funded by all sources. The information was disaggregated by size, NSLA status, and the district's percent of students testing proficient and advanced provided by NORMES. The total staffing level reported exceeds counts derived from the APSCN data for foundation only funding.

School Secretaries	SIZE			NSLA STATUS			ACHIEVEMENT			STATE AVERAGE
	SMALL	MED	LARGE	HIGH%	MID%	LOW%	HIGH	MID	LOW	
# of School Secretaries Per 500 Students	2.5	2.2	2.1	2.0	2.0	2.3	1.8	2.0	2.5	2.1

SCHOOL-LEVEL STAFFING OVERVIEW

The matrix established total staffing for school level personnel at a level of 35.665 positions. This includes classroom teachers, instructional facilitators, principals, school-level secretaries, assistant principals, special education teachers, librarians, media specialists, and student service professionals, such as counselors and nurses.

The district average for school level personnel provided through matrix funding was lower than the positions provided for with matrix funds. The following table compares the matrix number for all non-administrative school-level staff with the average number for all districts.

2010-11 School-Level Personnel FTE			
Matrix FTE Number Per 500	Foundation Paid Staff Per 500	FTE More or Less Than Matrix	FTE From All Salary & Operating Funds
35.665	33.41	-2.26	36.54

SCHOOL-LEVEL RESOURCES

School-level resources in the matrix are defined as technology expenditures, instructional materials, extra-duty funds, supervisory aides, and substitute teachers.

TECHNOLOGY

Definition

The 2006 consultants' report considered the following components in the recommendations for funding levels for technology: 1) computers and a replacement cycle for them; 2) operating system and other non-instructional software; 3) network equipment, printers, copiers, and instructional software; 4) additional hardware; and 5) a .5 FTE technology instructional facilitator in the instructional facilitators line item. The report also recommended 1 FTE technology coordinator in the central office line item.

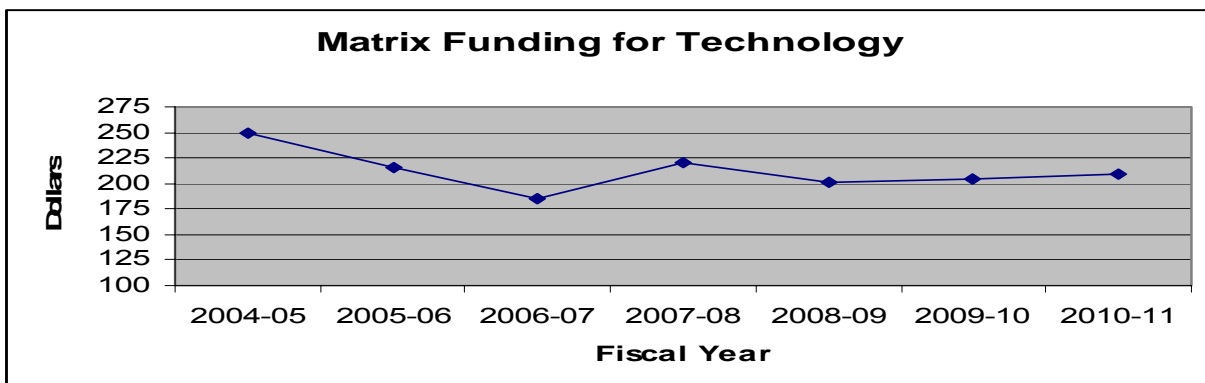
Expenditures

In 2011, districts spent \$53.5 million statewide on technology, including administrative technology services. This equates to approximately \$117.01 per student in 2010-11, compared with \$209.10 funded in the matrix. This is \$92.09 less than the amount provided by the matrix. The following table shows per-student expenditures for 2010-11. The expenditures per student for all students equates to 1.97% of the overall matrix, rather than 3.47% of the matrix provided funding.

2010-11 Technology Funding and Expenditures Per Student			
Matrix Funding Amount	Foundation Expenditures Per Student	Amount More or Less Than Matrix	All Expenditures From Salary & Operating Funds
\$209.10	\$117.01	-\$92.09	\$129.94

Supporting Information

Matrix funding for the technology line item has varied significantly since the original technology funding was set at \$250 in FY2004-05. For FY 2010-11, technology funding was \$209.10. Between FY2004-05 and FY2010-11 the technology line item has experienced three years in which reductions were made. For example, in FY 2008-09, technology funding was reduced to \$201 per pupil due to a decline in the price index for that sector. The following graph shows the changes from year to year.



The level of foundation or matrix funding needed to adequately provide for educational technology purposes is complicated by the fact that districts receive significant technology funding from other sources. Non-foundation funding for technology includes other state-funded technology programs, such as distance learning, and portions of National School Lunch Act (NSLA) categorical funding. A few districts have mills dedicated for capital outlay that are used for technology. Federal sources and support include Title I, Title IID, and the E-Rate Program. In FY2010 and FY2011, districts used the American Recovery and Reinvestment Act funding extensively for educational technology, which should reduce equipment needs for some time.

INSTRUCTIONAL MATERIALS

Definition

The instructional materials line item includes the following items:

- Textbooks
- Workbooks, worksheets and other consumables
- Pedagogical aides such as math manipulatives and science supplies
- Library materials including books, other instructional materials and/or services such as subscriptions to electronic databases
- \$500 per elementary teacher for instructional materials, books and supplies to reimburse teachers for out-of-pocket expenses.

Expenditures

In 2011, districts statewide spent \$60.6 million on instructional materials. This equates to approximately \$132.50 per student. The matrix funded \$169.80 per student for instructional materials for FY 2010-11. The expenditure per student for all students equates to 2.23% of the overall matrix, rather than 2.82% of the matrix provided funding.

2010-11 Instructional Materials Funding and Expenditures Per Student			
Matrix Funding Amount	Foundation Expenditures Per Student	Amount More or Less Than Matrix	All Expenditures From Salary & Operating Funds
\$169.80	\$132.50	-\$37.30	\$145.37

Supporting Information

The 2003 consultants' report stated, "Based on recommendations in other states, the Committee recommends that each school be provided with \$250 per-pupil for instructional materials and supplies." (Odden, Picus, & Fermanich, 2003, p. 40). In 2006, the consultants recommended \$160 per student for instructional materials, basing the reduced amount on pricing for these same materials in other states (Odden, Picus, & Goetz, 2006, p. 44). While the consultants' 2003 recommendation for this matrix line item was based on one lump sum, \$250, their 2006 recommendation examined the cost of needed instructional materials as a calculation of costs in three areas: library collections, textbooks and other instructional materials. The 2006 calculation included a recommendation of \$25 for formative assessments, but that item was not included in the matrix. The funding for library collections, according to the consultants, was at that time above the national average. The textbook amount is based on an assumption that one textbook per student would be purchased each year under a six-year adoption cycle. Finally, elementary schools included an additional \$20 per student to cover the costs of the elementary teacher fund. This fund provides \$500 for each elementary school teacher for the purchase of instructional materials.

TEXTBOOKS

The requirements for purchasing textbooks are contained in A.C.A. 6-21-401 et seq. Schools must provide all textbooks and other instructional materials to students in grades K-12 without cost. Districts may select their own textbooks, or they may select books from the state-approved list. ADE reports that no district has been cited for violations concerning instructional materials in the last two years. The State Board of Education has been charged in statute A.C.A. 6-21-404 (a)(3) to "Do whatever else may be necessary for the general welfare of the public school textbook and instructional materials system in order to acquire the items at the lowest possible cost."

LIBRARY MATERIALS

State standards require a minimum of 3,000 volumes or eight books per student, whichever number is larger. According to ADE accreditation reports, no district has been cited for violations concerning libraries in the last two years.

SCIENCE EQUIPMENT AND SUPPLIES

Some elementary schools visited had limited science labs and equipment. The need has increased for science equipment and supplies at all levels but particularly at the elementary level where science was not the focus in the early years of No Child Left Behind. However, in 2007-08 school year, fifth grade students participated in benchmark testing in science for the first time. Additionally, new content standards required that "a minimum of 20% of instructional time must be spent in inquiry and conducting hands-on investigations." In 2011, the 5th and 7th grades participated in science benchmark exams. There was a high school level end-of-course exam for biology also. Only 43% of students across the state were proficient or better on the end-of-course biology exam in FY2012. This was an improvement over the previous two years.

ADDITIONAL INSTRUCTIONAL MATERIALS

Along with textbooks, the instructional materials line item includes workbooks, worksheets, and teaching aides, such as math manipulatives and science supplies. The 2006 consultants' report also included \$20 per pupil for elementary schools to ensure that each elementary teacher had \$500 for the purchase of instructional materials.

FORMATIVE ASSESSMENTS

The 2006 consultants' report also recommended \$25 funding per pupil for formative assessment in the instructional materials line item. A February 21, 2007, Governor's letter requested the removal of this item and read: "Since the original ALC/JBC recommendation was made, it has been determined that formative assessments need to be studied for another biennium prior to participation in the program." In the interim, ADE asked Dr. Margaret Heritage, a national expert, to study the issue. Dr. Heritage met with the House and Senate Interim Committees on Education and then participated in a two-day workshop with district personnel, teachers and ADE staff. Her review emphasized that formative assessments are not just another product for schools to buy. Formative assessment is an educational technique or process for continuous evaluation of students. Dr. Heritage also stated that professional development programs should reflect the view that continuous assessment is a method of teaching, not an add-on. Currently, ADE does not require districts to have formative assessments.

The Arkansas Association of Educational Administrators (AAEA) in its written testimony presented to the committee on April 27, 2010, stated that the association members "recognize the amount presently spent on Formative Assessments does not reach the level recommended by the Odden/Picus study."

EXTRA DUTY FUNDS

Definition

Schools use extra duty funds to pay stipends for teachers who coach and those who supervise after-school clubs or other extracurricular activities.

Expenditures

In 2011, districts spent \$74.2 million statewide on extra duty pay. This equates to \$162.32 per student. The matrix provided \$53 per student in extra duty funding for FY 2010-11. The expenditures are \$109.32 more than the amount provided by the matrix. The following table shows the total and per-student expenditures for 2010-11. The expenditures per student for all students equates to 2.73% of the overall matrix, rather than 0.88% of the matrix provided funding.

2010-11 Extra Duty Funding and Expenditures Per Student			
Matrix Funding Amount	Foundation Expenditures Per Student	Amount More or Less Than Matrix	All Expenditures From Salary & Operating Funds
\$53.00	\$162.32	\$109.32	\$175.52

Supporting Information

In 2008, ADE calculated extra duty expenditures that included regular salaries, coaching salaries, coaching FTEs, and additional benefits. The number of extra duty FTEs reported by the districts are difficult to determine due to the part-time and varied nature of most extracurricular assignments. The extra duty salary data used by ADE included all pay to licensed personnel that was allocated to athletic and non-athletic extracurricular job assignments. This pay normally is in the form of stipends and additional contract days but also would include extracurricular assignments occurring during the school day and compensated in accordance with the teacher salary schedule.

The 2006 consultants' report recommended \$100 per student, but that recommendation was based on an earlier miscalculation in the original matrix, which inflated the actual cost of extra duty pay. The General Assembly corrected the calculation in 2007 by applying the consultants' 2003 recommendation to the FY2005-06 count of elementary, middle and high schools. That calculation resulted in a per-student cost of \$48.84, which was rounded to \$50 for the FY2006-07 matrix level.

The matrix amount for extra duty pay was developed in FY2006 using the following calculations:

Extra Duty Pay				
School/Grade	FY06 Enrollment	% of Total	Unit Price	Weighted Cost
Elementary	224,241	48.34%	\$0	\$0
Middle	101,739	21.93%	\$60	\$13.16
Secondary	137,942	29.73%	\$120	\$35.68
Totals	463,922	100%		\$48.84

An alternate method of calculating the matrix value of extra duty was considered but rejected. That methodology used teacher salary data to determine the cost of extra duty. According to a 2006 ADE

report, districts formerly reported extra-duty pay with teacher salaries. When it was removed from teacher salaries, the average teacher salary went down \$196 or .46% (from \$42,960 to \$42,869) for the 2004-05 school year. If the amount of \$196 per teacher is used and benefits equal to 22% are added, the average extra-duty cost per teacher amounts to \$239. Assuming a school of 500 students is funded for 33.665 teachers the total extra duty cost would be \$8,046 or \$16.09 per student. The methodology providing more funding to districts was selected.

SUPERVISORY AIDES

Definition

In the 2006 report, the consultants describe supervisory aides as "individuals hired to help students get on and off buses in the morning and afternoons, and to supervise lunch and recess periods".

Expenditures

In FY2010-11, districts spent \$4.1 million statewide on supervisory aides. This equates to approximately \$8.87 per student compared with \$53.60 funded in the matrix. This is \$43.63 less than the amount provided by the matrix. The following table shows total expenditures and per-student expenditures for 2010-11. The expenditures per student for all students equate to 0.15% of the overall matrix, rather than 0.87% of the matrix provided funding.

2010-11 Supervisory Aide Funding and Expenditures Per Student			
Matrix Funding Amount	Foundation Expenditures Per Student	Amount More or Less Than Matrix	All Expenditures From Salary & Operating Funds
\$53.60	\$8.87	-\$43.63	\$9.80

Supporting Information

In the 2006 report, the consultants recommended \$98.70 per student for supervisory aides. That amount was intended to cover the cost of two aides at a salary of \$24,676 each. However, when the matrix was developed that year, the General Assembly determined that one aide was sufficient and slightly increased funding for the supervisory aide over the 2005 matrix funding level for supervisory aides. The state standards do not require any aides.

During school site visits, principals were asked to discuss their use of supervisory aides. Most indicated that they do not pay for additional time but rather work within the 60 minutes of duty in teacher contracts, filling in with other classified personnel when needed. Many of the administrators felt the 60-minute statutory restriction was not enough time for management of their school.

The need for supervisory aides is reduced significantly by the amount of supervisory time provided by teachers under their contract pay. A 2006 ADE report discusses the amount of supervisory duty being provided by certified teachers within the allowable 60 minutes per week for non-instructional duties. That time would be covered under the teacher's contract and covered under the matrix in the teacher line items. The provision for teachers non-instructional duties follows:

6-17-117. Noninstructional duties.

Statute text

(a) (1) The purpose of this section is to provide additional time for instructional purposes and to reduce the amount of time for noninstructional duties.

(2) Any teacher assigned more than sixty (60) minutes of noninstructional duties per week shall be contracted in accordance with § 6-17-807(g).

(b) As used in this section, “noninstructional duties” means the supervision of students before or after the instructional day begins or ends for students or for the supervision of students during breakfasts, lunches, recesses, or scheduled breaks.

(c) As used in this section, “instructional purposes” means activities initiated by the teacher related to teaching duties, including, but not limited to, contacting parents, assessing student performance, documenting student performance, organizing the classroom, preparing instructional materials, and other teaching responsibilities related to instructional planning and the direct instruction of students.

A 2006 ADE report summarizes data from districts that were asked to submit the total hours spent for these duties and the cost of those hours. That data indicated that the average hours per day per student equals .01742. A school with 500 students would be using 8.71 hours per day. The average salary and benefit cost of this time is \$87.21 per hour.

Surveys and Site Visits

Districts were asked to report FTE of persons employed as non-instructional aides for the purpose of supervising students before or after school or during breakfasts, lunches, recesses, and at scheduled breaks. These responses do not include teachers providing supervision through their contracts or through a stipend. Supervision for school-administered programs before or after school is not included here. Para-professionals may be included for supervision activities outside their classroom support duties.

FTE Employees	SIZE			NSLA STATUS			ACHIEVEMENT			STATE AVERAGE
	SMALL	MED	LARGE	HIGH%	MID%	LOW%	HIGH	MID	LOW	
# of FTE Per 500 Employed as Non-instructional Aides	1.37	2.15	1.52	2.45	1.17	3.18	1.27	1.01	2.96	1.63

SUBSTITUTES

Definition

The matrix calculation was based on an average of 10 days of substitute time per classroom teacher. It is not intended to cover substitutes for other school personnel. The numbers used for the expenditure calculation below are for classroom teachers only. Districts at times pay for substitutes for other certified or classified personnel such as counselors, school secretaries, custodians, and teaching aides. This is not a common practice in the governmental or business sectors, nor is it required by state standards.

Expenditures

In FY2010-11, districts spent \$21.4 million statewide on substitute pay. This equates to approximately \$46.85 per student compared with \$61.40 funded in the matrix. This is \$14.55 less than the amount provided by the matrix. The following table shows total and per-student

expenditures for 2010-11. The expenditures per student for all students equates to 0.79% of the overall matrix rather than 1.02% of the matrix provided funding.

2010-11 Substitute Funding and Expenditures Per Student			
Matrix Funding Amount	Foundation Expenditures Per Student	Amount More or Less Than Matrix	All Expenditures From Salary & Operating Funds
\$61.40	\$46.85	-\$14.55	\$51.69

Supporting Information

State law requires a substitute who teaches more than 30 days to have a bachelor's degree or be licensed to teach. The only requirement for all other substitutes is a high school diploma or Graduate Equivalent Degree (GED). The state law addressing these requirements follows:

A.C.A. 6-15-1004

(e) (1) No class of students shall be under the instruction of a substitute teacher or teachers for more than thirty (30) consecutive school days in the same class during a school year unless the substitute teacher or teachers instructing the class have a bachelor's degree awarded by an accredited college or university or have been licensed to teach by the State of Arkansas.

(2) A substitute teacher or teachers possessing a bachelor's degree shall continue to teach the class from at least the thirty-first consecutive day after the regular teacher is absent from the class until the return of the regular teacher to that class.

Surveys and Site Visits

Districts reported on substitute pay by the type of degree. In the second table below, they also reported the number of substitutes that taught for more than 30 days.

Substitute Pay	Certified Teacher	Degree Without Certification	No Degree
Serving 30 or Fewer Days			
Lowest Daily Pay Avg.	\$66.26	\$59.71	\$57.30
Range Among Districts	\$188.00 - \$20.00	\$100.00 - \$20.00	\$75.00 - \$20.00
Highest Daily Pay Avg.	\$76.47	\$64.05	\$60.75
Range Among Districts	\$264.21 - \$50.00	\$172.00 - 50.00	\$172.00 - \$45.00
Serving More Than 30 Days			
Lowest Daily Pay Avg.	\$111.26	\$79.04	\$67.44
Range Among Districts	\$293.10 - \$22.00	\$222.00 - \$20.00	\$186.32 - \$20.00
Highest Daily Pay Avg.	\$137.16	\$85.64	\$71.34
Range Among Districts	\$307.76 - \$50.00	\$256.00 - \$50.00	\$186.32 - \$45.00

Substitutes	SIZE			NSLA STATUS			ACHIEVEMENT			STATE AVERAGE
	SMALL	MED	LARGE	HIGH%	MID%	LOW%	HIGH	MID	LOW	
Substitutes Per 500 Teaching More Than 30 Days	0.66	0.65	0.79	1.41	0.79	0.61	0.94	0.61	0.75	0.76

DISTRICT-LEVEL RESOURCES

District-level expenditures include operations and maintenance, central office expenses, and district transportation expenses. This section of the report also addresses expenditures of foundation funding that are not readily attributable to a matrix line item. Examples of these types of expenditures and other uses include instructional aides and transfers of current year foundation funds from salary matrix and operating matrix funds.

CARRY-FORWARD TRANSITION

The original matrix had a line item called "carry-forward" that represented what might be best described as miscellaneous expenditures that are not otherwise identified in the matrix. In the 2003 report, the consultants recommended line items and funding for many school costs that would be included in the "carry-forward" line item.

With these assumptions and methods, we began to calculate the additional costs. To do so, we took total expenditures of school districts (minus expenditures for debt and expenditures supported by federal source) and divided them into two parts. The first were those expenditures that would be "carried forward" unchanged, and included such things as fiscal services, board and legal services, executive administration (superintendent), athletics, facilities and capital other than debt, community services, food services, and other non-instructional services, operations and maintenance, transportation, technology services, certain instructional support such as drug and crime prevention and tuition paid to other local school districts (Odden et al., 2003 p. 61).

Identifying and quantifying those expenditures more precisely was one of the primary purposes of the 2006 consultants' report. The consultants separated the carry-forward amount into three line items that included: operations and maintenance, central office expenses, and transportation expenses. In FY 2006-07 the matrix amount for the carry-forward was \$1,206. In 2007-08, the first year this line item was broken into three, the total funding for all three of the new line items was \$1,243. This results in a 3.1% increase in the first fiscal year of the biennium, even after one clerical position was relocated to the school-level staff. The increase was the result of additional needs identified in the process of further defining carry forward expenditures. That amount was increased to \$1,250.50 in FY2008-09 and to \$1,301 in FY2010-11.

OPERATIONS AND MAINTENANCE

Definition

Act 1426 of 2005 known as the Arkansas Public School Academic Facilities Program Act established within the state's foundation funding a dedicated 9% of foundation funding for the purposes of paying utilities; custodial, maintenance, repair, and renovation activities; and related personnel costs. The Act also included language that directed unspent funds from this 9% of foundation to be transferred into an academic facilities escrow account to be released only upon approval of the Division of Public School Academic Facilities and Transportation for local academic facilities projects.

Expenditures

In FY2010-11, districts spent \$343.3 million statewide on operations and maintenance. This equates to approximately \$750.72 per student, compared with \$604.50 funded in the matrix. This is \$146.22 more than the amount provided by the matrix. The following table shows per-student

expenditures for 2010-11. The expenditure per student level for all students equates to 12.62% of the overall matrix, rather than 10.04% of the matrix provided funding.

2010-11 Operations and Maintenance Funding and Expenditures Per Student			
Matrix Funding Amount	Foundation Expenditures Per Student	Amount More or Less Than Matrix	All Expenditures From Salary & Operating Funds
\$604.50	\$750.72	\$146.22	\$823.99

Supporting Information

The funding stream for operations and maintenance, in its current form, is based on the 2004 Statewide Educational Facilities Assessment report to the Joint Committee on Educational Facilities (2004). This report established the criteria of funding operations and maintenance through the foundation funding formula at 9% of the total foundation funding. The determination to use 9% of foundation funds was based on the 32nd Annual Maintenance and Operations Study conducted by American School and University Magazine (2003). That report estimated the cost to address the custodial/maintenance procedures in Arkansas as approximately 9% of the state's educational budget.

Based on the final report and recommendations of the 2006 Adequacy Study Oversight Subcommittee, the initial amount for operations and maintenance for the 2008 fiscal year was set at \$581 per ADM. This amount consisted of 9% of the consultant's recommendation for foundation funding (\$554 per ADM) and an additional \$27 per ADM for property insurance (2006). The amount for property insurance was derived through a calculation made in January 2007, when ADE analyzed the total state school district expenditures for property insurance. The total was \$12,350,868, which was divided by 456,648.56 ADM with the result being \$27.

Act 19 of 2006 amended the code related to the dedicated 9% for operations and maintenance. It allowed districts to use funds from their public school facilities escrow account in any fiscal year for payment of utilities and costs of custodial, maintenance, repair, and renovation activities, and related personnel costs for public school facilities.

The table below presents the operations and maintenance funding history for each year since the recalibration of the matrix in 2006.

History of Matrix Foundation Funding for Operations & Maintenance

Fiscal Year	Matrix Funding for O & M per ADM	Percent of Foundation Funding
2008	\$581.00	10.16%
2009	\$581.00	10.04%
2010	\$592.60	10.04%
2011	\$604.50	10.04%

The 2008 matrix level for operations and maintenance (\$554 + \$27) was set at 9% of an amount that exceeded the foundation funding. When the General Assembly established the operations and maintenance funding level, the overall foundation funding level had not been finalized. The legislature used an amount they knew would exceed the final foundation level to make sure the operations and maintenance funding level would be adequate. The result is that the amount for 2007-08 is 10.16% of the total matrix for that year and 10.04% of the total matrix for 2008-09.

With current procedures, it is not possible to tell from the data maintained in the state data warehouse if the increased costs in operations and maintenance are due to additional consumption

of utilities or higher utility costs. If districts want to document the source of increased utility expenditures, they could be required to add one or two fields to the accounting records that indicate the fuel or water consumption level and the rate so that the information is not difficult to retrieve when needed.

Surveys and Site Visits

Districts were asked to indicate the means used to monitor and address utility consumption from year to year. Multiple responses were possible. They were also asked if they had made adjustments to their current practices as a result of that monitoring. Districts were divided into groups by size, NSLA status, and the district's AYP percent proficient and advanced provided by NORMES.

OPERATIONS AND MAINTENANCE	
# of Districts That Use School Dude*	26
# of Districts That Use Other Maintenance Software	12
# of Districts That Use In-house Computer Records	103
# of Districts That Use Paper Files	95
# of Districts That Use Other Means	14
# of Districts That Have Made Adjustments to Current Practices	153

* Statute requires school districts to use the state-selected computerized maintenance management system (CMMS) to track their maintenance and preventative maintenance requirements as part of the districts' master plans. SchoolDude was the CMMS selected in the initial procurement process. The division provides and pays for the required CMMS modules for all districts.

In addition to utility costs, the cost for broadband services are paid from this line item. In 2012, the Arkansas Association Educational Administrators (AAEA) testified:

An issue of ever increasing importance to students and teachers is the availability of adequate bandwidth, both for instructional purposes and on-line professional development. Districts have been able to purchase smartboards, netbooks, and iPads but are limited in their instructional use because of inadequate bandwidth. Also, there are instances of districts willing and able to purchase additional bandwidth in their community but unable to find a vendor willing to bid on the project. Looming on the horizon is the Common Core initiative and on-line assessments. Arkansas students will not be able to assess student learning unless this issue is addressed.

AAEA also reported the results of a survey of superintendents and co-op directors.

- 75.6% indicated that their district experienced problems with bandwidth in the past year
- 45.5% have had computer problems when submitting required ADE reports
- 70.9% indicated that there are technology initiatives they would like to implement but can't due to bandwidth limitations
- 74.9% have restricted use of educationally relevant internet sites due to lack of bandwidth
- 62.8% have purchased additional bandwidth.

Their testimony was echoed by the Arkansas School Boards Association and the Arkansas Rural Educators Association.

CENTRAL OFFICE

Definition

The central office line item for district-level administrative expenses includes classified and clerical salaries and benefits coded as central office, excluding expenses coded as principal's office. The central office line item also includes expenditures other than salaries and benefits coded as central office.

Expenditures

In FY2010-11, districts spent \$128.7 million statewide on expenses that have been attributed to the central office matrix line item. This equates to approximately \$281.33 per student compared with \$399.00 funded in the matrix. This is \$117.67 less than the amount provided by the matrix. The following table shows total and per-student expenditures for 2010-11. The expenditure per student level for all students equates to 4.73% of the overall matrix rather than 6.62% of the matrix provided funding.

2010-11 Central Office Funding and Expenditures Per Student			
Matrix Funding Amount	Foundation Expenditures Per Student	Amount More or Less Than Matrix	All Expenditures From Salary & Operating Funds
\$399.00	\$281.33	-\$117.67	\$309.51

Supporting Information

The 2007-08 matrix amount was derived by modifying the personnel levels recommended in the 2006 consultants' report. The recommendation was based on a prototypical district of 3,500 students, but in Arkansas in 2006, only 26 of the districts, or 11%, had 3,500 or more students. To test the appropriateness of the resulting funding level, ADE ran data on FY2005-06 central office expenditures and personnel counts for districts with an ADM between 3,000 and 4,000. The average number of personnel was 17.82. The average total central office cost was \$395 per ADM, which is higher than \$376 funded in the matrix for central office in FY2008.

The following chart shows how the 17 positions allocated to the central office line item in the 2006 consultants' report were adjusted to a unit size of 500. The chart also shows the amount included for additional non-personnel central office expenses.

Central Office				
Superintendent's Office	Positions	Costs	Per-Pupil	Associated Salary
Superintendent	0.14	\$16,964	\$34	\$118,748
Asst. Superintendent	0.14	\$15,778	\$32	\$110,516
Senior Secretary	0.14	\$4,964	\$10	\$34,751
Senior Secretary	0.14	\$4,964	\$10	\$34,751
Business Office				
Business Manager	0.14	\$7,848	\$16	\$54,940
Human Resources Manager	0.14	\$15,788	\$32	\$110,516
Senior Secretary	0.14	\$4,964	\$10	\$34,751
Payroll Clerk	0.14	\$4,964	\$10	\$34,751
Accounts Payable Clerk	0.14	\$4,964	\$10	\$34,751
Curriculum and Support				
Director of Pupil Services	0.14	\$15,788	\$32	\$110,516
Director of SPED	0.14	\$15,788	\$32	\$110,516
Senior Secretary	0.14	\$4,964	\$10	\$34,751
Senior Secretary	0.14	\$4,964	\$10	\$34,751
Secretary	0.14	\$4,964	\$10	\$34,751
Technology				
Director of Technology	0.14	\$15,788	\$32	\$110,516
Operations & Maintenance				
Director of M&O	0.14	\$15,788	\$32	\$110,516
Secretary	0.14	\$4,964	\$10	\$34,751
Subtotal *	2.38	\$164,206	\$332	
Misc Per-Pupil Expenses*		\$131,513	\$259	
Total Central Office		\$295,719	\$591	

TRANSPORTATION

Definition

Transportation expenditures include school bus and district vehicle operations and maintenance, transportation personnel, insurance and equipment costs. They also include bus purchases and non-academic transportation.

Expenditures

In FY2010-11, districts spent \$125.5 million statewide on transportation expenses. This equates to approximately \$274.41 per student compared with \$297.50 funded in the matrix. This is \$23.09 less than the amount provided by the matrix. The following table shows per student expenditures for 2010-11. The per-student expenditure equates to 4.61% of the overall matrix, rather than 4.94% of the matrix provided funding.

2010-11 Transportation Funding and Expenditures Per Student			
Matrix Funding Amount	Foundation Expenditures Per Student	Amount More or Less Than Matrix	All Expenditures From Salary & Operating Funds
\$297.50	\$274.41	-\$23.09	\$299.35

Supporting Information

Act 57 of the Second Extraordinary Session of 2003 includes the following requirement for the adequacy study: "Review and continue to evaluate the costs of an adequate education for all students in Arkansas, taking into account cost of living variances, diseconomies of scale, transportation variability, demographics, school districts with a disproportionate number of students who are economically disadvantaged or have educational disabilities, and other factors as deemed relevant, and recommend any necessary changes."(emphasis added),

Transportation has been part of the matrix since its inception in 2004. The consultants, in both reports, addressed transportation funding as part of the matrix, and it has been included in both legislative interim study reports on educational adequacy. However, the consultants and the House and Senate Interim Committees on Education have indicated that the method of financing transportation through the matrix needs further study.

In their 2006 report, the consultants fine-tuned or recalibrated the resources needed for the 2007-08 school year. The consultants stated that they planned "to recommend a different approach to transportation funding. We anticipate proposing a method of funding transportation costs that will vary by district depending on district characteristics (i.e., population density, road conditions, distances and number of students transported, etc.) Because data on pupil transportation are limited, this document utilizes actual transportation expenditures of Arkansas school districts to estimate a state-wide per-pupil figure." In another section, the consultants say, "For the present, we have used existing 2004-05 transportation expenses by district inflated to 2007-08. This 2007-08 estimate averages \$286 per ADM, but varies considerably by district from a low of \$67 to a high of \$695 per pupil."

The difference in matrix expenditures for transportation in FY2010-11 ranges from a low of \$5.33 (Pulaski County Special) to a high of \$786.11(Hillcrest) per pupil. Some transportation funding is provided through other state support, such as desegregation, isolated or special needs isolated funding.

According to the 2011 Summary of Fiscal Legislation, Act 1075 of 2011 provided a new appropriation in the amount of \$500,000 and special language that requires the Department of Education to budget, allocate and commit for expenditure \$500,000 for "Supplemental Transportation." The Act also requires the Department to use this funding to address extraordinary transportation needs of public school districts.

According to BLR staff, ADE spent \$499,999 on Supplemental Transportation in FY2012. None of the \$500,000 appropriated for Supplemental Transportation for FY2013 is budgeted. ADE states that they were to fund Supplemental Transportation only one year (FY12). Further, it was an ADE oversight that they did not request the deletion of the special language that requires ADE to fund Supplemental Transportation (see Section 32 of Act 269 of 2012). The Department does not plan to fund it in FY2013.

Surveys and Site Visits

Districts were asked to indicate the amount of time their students spent on the bus for each one-way trip. The survey asked for the percentage of bus riders whose ride was less than a half hour, between a half hour and an hour, between an hour and 1.5 hours and longer than 1.5 hours. BLR staff then averaged the percentages from each district without weighting by the number of riders.

Length Of Student Bus Rides	
Average % of students riding more than 1.5 hours	2.57
Average % of students riding 1 to 1.5 hours	15.31
Average % of students riding 0.5 to 1 hour	43.30
Average % of students riding Less than 0.5 hours	26.58

OTHER RECONCILING ITEMS

Definition

Districts use foundation funding for purposes not included in the matrix and not considered essential for educational adequacy. Other reconciling items include various items of instructional support and miscellaneous items that have not been assigned to a specific matrix line item in our analysis. These items are as follows:

Description	Expenditures or other uses from foundation funds	Expenditures or other uses from foundation funds per pupil
Supplies and objects other than salaries and benefits in instruction and instructional support not otherwise classified as instructional materials, technology, etc.	\$44,738,154.25	\$97.83
Other instruction and instructional supports such as preschool, summer school, homebound instruction, and selected instructional program coordinators	\$25,835,422.75	\$56.49
Instructional aides and classified library support	\$58,157,361.99	\$127.17
Substitutes related to instruction other than for classroom teacher	\$4,620,973.45	\$10.10
Food service, community outreach, etc,	\$4,262,531.40	\$9.32
Other financing uses such as bonded indebtedness not accounted for in the debt service fund and indirect costs	\$18,419,491.17	\$40.28
Transfers to the Building and Debt Service Funds	\$6,709,640.60	\$14.67
Miscellaneous reconciling items	\$3,892,832.66	\$8.51
Total other reconciling items	\$166,636,408.27	\$364.37

Expenditures

In FY2010-11, districts spent \$166.6 million statewide on expenses not attributable to a matrix line item. This equates to approximately \$364.37 per student. The expenditures per student for all students equates to 6.12% of the overall matrix.

2010-11 Other Reconciling Items Expenditures Per Student		
Matrix Funding Amount	Foundation Expenditures Per Student	Amount More or Less than Matrix
\$0.00	\$364.37	\$364.37

Supporting Information

Instructional aides are included in this other reconciling items section of the report because they are not included in the matrix. In their 2008 book, Odden and Picus state that based on class-size research, "a regular class of 24-25 with a teacher and an instructional aide did not produce a discernible positive impact on student achievement" (Odden and Picus, 2008, p.95). They also add that "the research is not supportive of instructional aides." That statement is qualified as follows: "Instructional aides can have an impact, but only if they are selected according to certain educational criteria, trained in a specific tutoring program, deployed to provide tutoring to struggling students and closely supervised" (Odden and Picus, 2008, p. 117). These attributes for instructional aides that can have an impact seems to describe what school districts called paraprofessionals or "para-pros" during site visits. This type of personnel was in use in the majority of schools visited. In many cases, the principal indicated that they were provided through Title I or NSLA funding, rather than through foundation funding. In the 74 schools visited, approximately 25 instructional aides were funded with matrix funding.

DISTRICT COMPARISONS

The variety of needs for different districts and their individual student characteristics make it unlikely that each matrix line item's funding will fit all schools equally well, which is why districts are not required to spend according to the levels established in the matrix. This study reviewed each line item of the matrix in an effort to identify how districts are using these resources. The following charts compare the way districts of different sizes, income levels, and achievement levels use foundation funding to address the needs of their students.

Statewide districts are spending less on teachers, certified staff, school resources such as technology, transportation, and central office than what is provided for in the matrix and more for extra duty, operations and maintenance, and other/reconciling items.

Matrix				Statewide Average					
Line Item	Staffing	Funding	Percent	Staffing	More (or Less) Than Matrix	Percent	Expenditure Per pupil	More (or Less) Than Matrix	Percent
Kindergarten	2	\$232.86	3.87%						
Grades 1-3	5	\$582.15	9.67%						
Grades 4-12*	13.8	\$1,606.75	26.68%						
Subtotal Core Teachers	20.8	\$2,421.76	40.21%						
PAM/Elective Teachers	4.14	\$482.03	8.00%						
Subtotal Classroom Teachers	24.94	\$2,903.79	48.21%	24.19	(0.75)	72.40%	\$2,707.94	(\$195.85)	45.52%
Special Ed Teachers	2.9	\$337.66	5.61%	2.93	0.03	8.77%	\$342.92	\$5.26	5.76%
Instruct.Facilitators (Asst Prin)	2.5	\$291.09	4.83%	0.68	(1.82)	2.04%	\$117.98	(\$173.11)	1.98%
Librarians	0.825	\$96.05	1.59%	0.93	0.11	2.78%	\$115.52	\$19.47	1.94%
Guidance Couns., Nurse, et al.	2.5	\$291.09	4.83%	2.02	(0.48)	6.05%	\$237.58	(\$53.51)	3.99%
Subtotal \$58,214	33.665	\$1,015.89	16.87%	30.75	(2.92)	92.04%	\$3,521.94	\$2,506.05	59.20%
Principal -- \$91,409	1	\$182.83	3.04%	0.99	(0.01)	2.96%	\$187.38	\$4.55	3.15%
Admin Asst -- \$36,845	1	\$73.69	1.22%	1.67	0.67	5.00%	\$101.76	\$28.07	1.71%
Total School-Level Personnel	35.665	\$4,176.20	69.34%	33.41	(2.26)	100.00%	\$3,811.08	(\$365.12)	64.06%
Technology		\$209.10	3.47%				\$117.01	(\$92.09)	1.97%
Instructional Materials		\$169.80	2.82%				\$132.50	(\$37.30)	2.23%
Extra Duty Funds		\$53.00	0.88%				\$162.32	\$109.32	2.73%
Supervisory Aides		\$52.50	0.87%				\$8.87	(\$43.63)	0.15%
Substitutes		\$61.40	1.02%				\$46.85	(\$14.55)	0.79%
Total School-Level Resources		\$545.80	9.06%				\$467.55	(\$78.25)	7.86%
Operations and Maintenance		\$604.50	10.04%				\$750.72	\$146.22	12.62%
Central Office		\$399.00	6.62%				\$281.33	(\$117.67)	4.73%
Transportation		\$297.50	4.94%				\$274.41	(\$23.09)	4.61%
Total Support Costs**		\$1,301.00	21.60%				\$1,306.46	\$5.46	21.96%
Other / Reconciling Items							\$364.37	\$364.37	6.12%
Total Matrix		\$6,023.00	100.00%				\$5,949.46	(\$73.54)	100.00%

Small districts have about the same school-level staff as what is provided by the matrix, while large districts have less. Both types of districts are spending less than what is provided for by the matrix. Small districts are spending more on central office expenditures than larger districts.

Matrix			Size				Size				
Line Item	Staffing	Funding	Districts of 500 or Less				Districts of 5,000 or More				
			Staffing	More (or Less) Than Matrix	Expenditures	More (or Less) Than Matrix	Staffing	More (or Less) Than Matrix	Expenditures	More (or Less) Than Matrix	
Kindergarten	2	\$232.86									
Grades 1-3	5	\$582.15									
Grades 4-12*	13.8	\$1,606.75									
Subtotal Core Teachers	20.8	\$2,421.76									
PAM/Elective Teachers	4.14	\$482.03									
Subtotal Classroom Teachers	24.94	\$2,903.79	26.41	1.47	\$2,602.96	(\$300.83)	22.78	(2.16)	\$2,784.26	(\$119.53)	
Special Ed Teachers	2.9	\$337.66	2.55	(0.35)	\$244.66	(\$93.00)	3.12	0.22	\$407.17	\$69.51	
Instruct.Facilitators (Asst Prin)	2.5	\$291.09	0.12	(2.38)	\$16.03	(\$275.06)	0.85	(1.65)	\$164.44	(\$126.65)	
Librarians	0.825	\$96.05	1.12	0.30	\$118.45	\$22.40	0.78	(0.04)	\$105.72	\$9.67	
Guidance Couns., Nurse, et al.	2.5	\$291.09	1.85	(0.65)	\$170.66	(\$120.43)	2.15	(0.35)	\$280.57	(\$10.52)	
Subtotal \$58,214	33.665	\$1,015.89	32.05	(1.61)	\$3,152.76	\$2,136.87	29.68	(3.99)	\$3,742.16	(\$177.52)	
Principal -- \$91,409	1	\$182.83	1.55	0.55	\$262.71	\$79.88	0.78	(0.22)	\$164.14	(\$18.69)	
Admin Asst -- \$36,845	1	\$73.69	1.80	0.80	\$101.33	\$27.64	1.50	0.50	\$97.16	\$23.47	
Total School-Level Personnel	35.665	\$4,176.20	35.40	(0.27)	\$3,516.80	(\$659.40)	31.96	(3.70)	\$4,003.46	(\$172.74)	
Technology		\$209.10			\$88.11	(\$120.99)			\$119.34	(\$89.76)	
Instructional Materials		\$169.80			\$120.13	(\$49.67)			\$122.97	(\$46.83)	
Extra Duty Funds		\$53.00			\$139.49	\$86.49			\$120.54	\$67.54	
Supervisory Aides		\$52.50			\$4.97	(\$47.53)			\$11.65	(\$40.85)	
Substitutes		\$61.40			\$49.99	(\$11.41)			\$53.79	(\$7.61)	
Total School-Level Resources		\$545.80			\$402.69	(\$143.11)			\$428.29	(\$117.51)	
Operations and Maintenance		\$604.50			\$781.19	\$176.69			\$733.26	\$128.76	
Central Office		\$399.00			\$474.40	\$75.40			\$231.31	(\$167.69)	
Transportation		\$297.50			\$353.53	\$56.03			\$199.17	(\$98.33)	
Total Support Costs**		\$1,301.00			\$1,609.12	\$308.12			\$1,163.74	(\$137.26)	
Other / Reconciling Items					\$365.26	\$365.26			\$411.62	\$411.62	
Total Matrix		\$6,023			\$5,893.87	(\$129.13)			\$6,007.11	\$ (15.89)	

Regardless of the poverty level, districts are spending less than the amount provided through the matrix for classroom teachers. Lower income districts are spending much less for certified personnel. Districts with more students in poverty are spending more than districts with fewer students in poverty for operations and maintenance, central office, as well as for transportation expenses.

Matrix			Poverty				Poverty			
Line Item	Staffing	Funding	Districts of 90% NSLA or More				Districts of 40% NSLA or Less			
			Staffing	More (or Less) Than Matrix	Expenditures	More (or Less) Than Matrix	Staffing	More (or Less) Than Matrix	Expenditures	More (or Less) Than Matrix
Kindergarten	2	\$232.86								
Grades 1-3	5	\$582.15								
Grades 4-12*	13.8	\$1,606.75								
Subtotal Core Teachers	20.8	\$2,421.76								
PAM/Elective Teachers	4.14	\$482.03								
Subtotal Classroom Teachers	24.94	\$2,903.79	19.13	(5.81)	\$2,168.60	(735.19)	22.57	(2.37)	\$2,761.75	(142.04)
Special Ed Teachers	2.9	\$337.66	2.61	(0.29)	\$314.33	(23.33)	3.18	0.28	\$403.75	66.09
Instruct.Facilitators (Asst Princ)	2.5	\$291.09	0.59	(1.91)	\$109.39	(181.70)	0.63	(1.87)	\$113.22	(177.87)
Librarians	0.825	\$96.05	1.09	0.27	\$124.69	28.64	0.69	(0.14)	\$97.34	1.29
Guidance Couns., Nurse, et al.	2.5	\$291.09	1.70	(0.80)	\$173.21	(117.88)	2.18	(0.32)	\$274.67	(16.42)
Subtotal \$55,954	33.665	\$1,015.89	25.12	(8.55)	\$2,890.22	(1,029.46)	29.25	(4.42)	\$3,650.73	(268.95)
Principal -- \$87,860	1	\$182.83	1.26	0.26	\$225.94	43.11	0.81	(0.19)	\$165.81	(17.02)
Admin Asst -- \$35,415	1	\$73.69	1.31	0.31	\$76.08	2.39	1.49	0.49	\$101.42	27.73
Total School-Level Personnel	35.665	\$4,176.20	27.69	(7.98)	\$3,192.24	(983.96)	31.55	(4.12)	\$3,917.96	(258.24)
Technology		\$209.10			\$119.94	(89.16)			\$138.00	(71.10)
Instructional Materials		\$169.80			\$95.95	(73.85)			\$142.98	(26.82)
Extra Duty Funds		\$53.00			\$94.78	41.78			\$161.53	108.53
Supervisory Aides		\$52.50			\$0.00	(52.50)			\$5.12	(47.38)
Substitutes		\$61.40			\$39.60	(21.80)			\$48.87	(12.53)
Total School-Level Resources		\$545.80			\$350.27	(195.53)			\$496.50	(49.30)
Operations and Maintenance		\$604.50			\$828.02	223.52			\$676.22	71.72
Central Office		\$399.00			\$437.04	38.04			\$229.16	(169.84)
Transportation		\$297.50			\$372.84	75.34			\$266.99	(30.51)
Total Support Costs		\$1,301.00			\$1,637.90	336.90			\$1,172.37	(128.63)
Other/ Reconciling Items					\$534.24	534.24			\$392.96	392.96
Total Matrix		\$6,023			\$5,714.65	(308.35)			\$5,979.79	(43.21)

Low achieving schools spend over \$300 less per student for classroom teachers than high achieving schools. They spend more on operations and maintenance, and central office.

Matrix			Achievement				Achievement				
Line Item	Staffing	Funding	20 Lowest Performing Districts				20 Highest Performing Districts				
			Staffing	More (or Less) Than Matrix	Expenditures	More (or Less) Than Matrix	Staffing	More (or Less) Than Matrix	Expenditures	More (or Less) Than Matrix	
Kindergarten	2	\$232.86									
Grades 1-3	5	\$582.15									
Grades 4-12*	13.8	\$1,606.75									
Subtotal Core Teachers	20.8	\$2,421.76									
PAM/Elective Teachers	4.14	\$482.03									
Subtotal Classroom Teachers	24.94	\$2,903.79	22.31	(2.63)	\$2,473.18	(\$430.61)	23.47	(1.47)	\$2,783.84	(\$119.95)	
Special Ed Teachers	2.9	\$337.66	2.92	0.02	\$336.78	(\$0.88)	3.02	0.12	\$374.42	\$36.76	
Instruct.Facilitators (Asst Princ)	2.5	\$291.09	0.62	(1.88)	\$104.91	(\$186.18)	0.66	(1.84)	\$122.48	(\$168.61)	
Librarians	0.825	\$96.05	1.00	0.18	\$118.70	\$22.65	0.78	(0.04)	\$104.05	\$8.00	
Guidance Couns., Nurse, etc	2.5	\$291.09	1.82	(0.68)	\$197.06	(\$94.03)	2.19	(0.31)	\$272.98	(\$18.11)	
Subtotal \$55,954	33.665	\$1,015.89	28.67	(5.00)	\$3,230.63	\$2,214.74	30.12	(3.54)	\$3,657.77	\$2,641.88	
Principal -- \$87,860	1	\$182.83	1.13	0.13	\$171.74	(\$11.09)	0.78	(0.22)	\$158.63	(\$24.20)	
Admin Asst -- \$35,415	1	\$73.69	1.78	0.78	\$101.78	\$28.09	1.57	0.57	\$103.21	\$29.52	
Total School-Level Personnel	35.665	\$4,176.20	31.58	(4.09)	\$3,504.15	(\$672.05)	32.47	(3.19)	\$3,919.61	(\$256.59)	
Technology		\$209.10			\$112.34	(\$96.76)			\$132.26	(\$76.84)	
Instructional Materials		\$169.80			\$98.98	(\$70.82)			\$136.05	(\$33.75)	
Extra Duty Funds		\$53.00			\$131.91	\$78.91			\$164.97	\$111.97	
Supervisory Aides		\$52.50			\$0.80	(\$51.70)			\$6.32	(\$46.18)	
Substitutes		\$61.40			\$25.79	(\$35.61)			\$50.22	(\$11.18)	
Total School-Level Resources		\$545.80			\$369.82	(\$175.98)			\$489.82	(\$55.98)	
Operations and Maintenance		\$604.50			\$846.83	\$242.33			\$686.66	\$82.16	
Central Office		\$399.00			\$372.86	(\$26.14)			\$223.40	(\$175.60)	
Transportation		\$297.50			\$336.57	\$39.07			\$287.65	(\$9.85)	
Total Support Costs**		\$1,301.00			\$1,556.26	\$255.26			\$1,197.71	(\$103.29)	
Other/ Reconciling Items					\$407.23	\$407.23			\$343.08	\$343.08	
Total Matrix		\$6,023			\$5,837.46	(\$185.54)			\$5,950.22	(\$72.78)	

ACHIEVEMENT

All of the money and effort spent on Arkansas's public schools is of little value if the academic achievement of the state's students does not continue to improve.

Arkansas is in the process of promulgating rules for the new school accountability system recently approved by the U.S. Department of Education as an alternative to meeting the requirements of the federal No Child Left Behind (NCLB) Act of 2002. NCLB required all students to achieve at grade level on state math and literacy exams by 2013-14.

The new accountability system will require each public school to annually increase the percentages of students who score at proficient levels on the state tests. The goal is to reduce by half the gap between the three-year average of students proficient in 2009-11 and 100 percent proficiency by the end of the 2016-17 school year. For example, if there is a gap of 30 points, the school would need to improve by 15 points before 2017. The improvement would need to be consistent through the six-year period. The annual targets would vary for each school.

Regardless of the details worked out in the final rules, the new accountability system will target districts that need the most academic attention. The efficient and effective use of financial resources in those schools and districts can be scrutinized as well as academic practices, teacher quality, and school and district leadership.

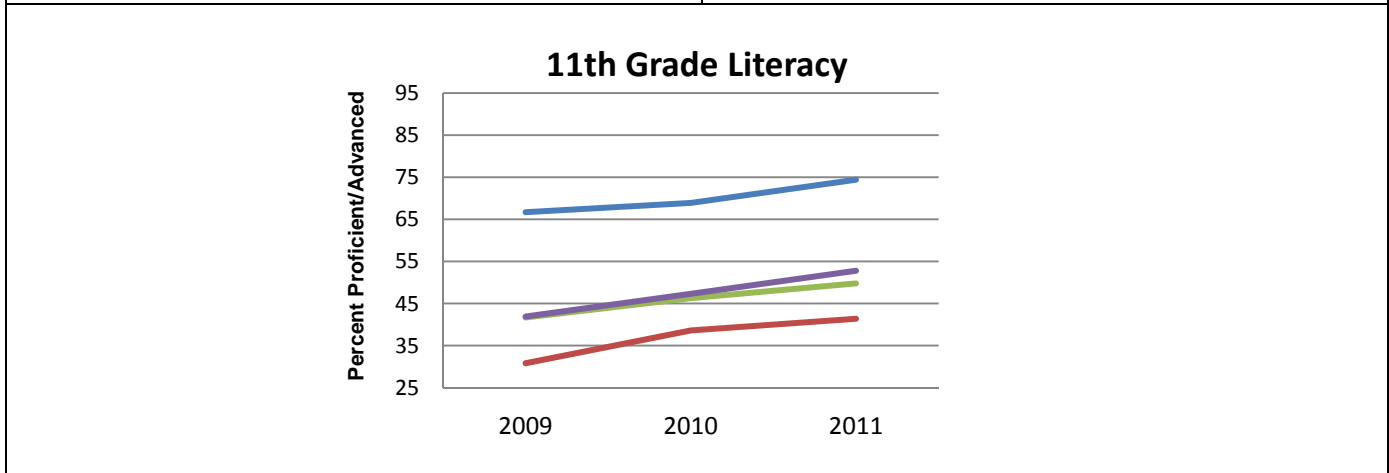
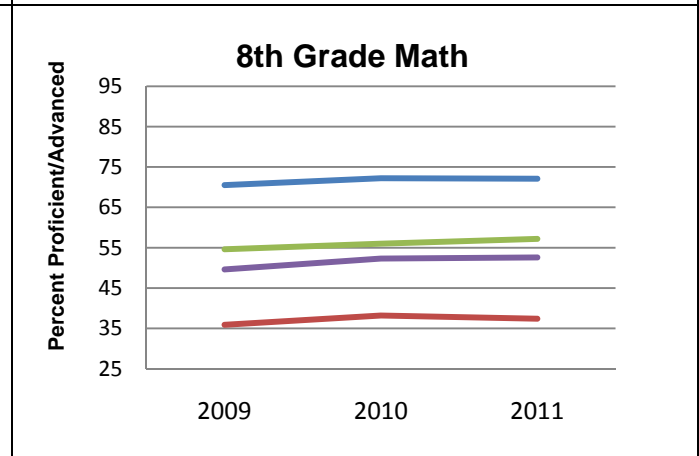
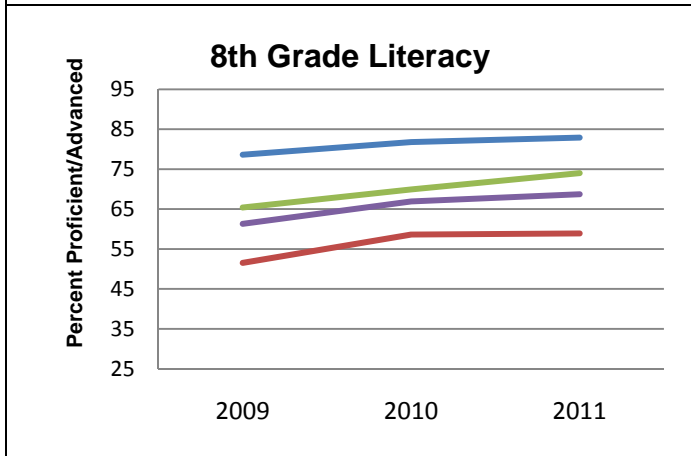
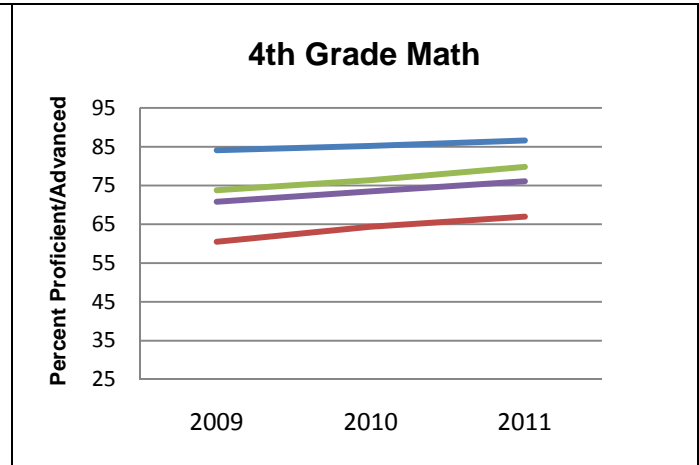
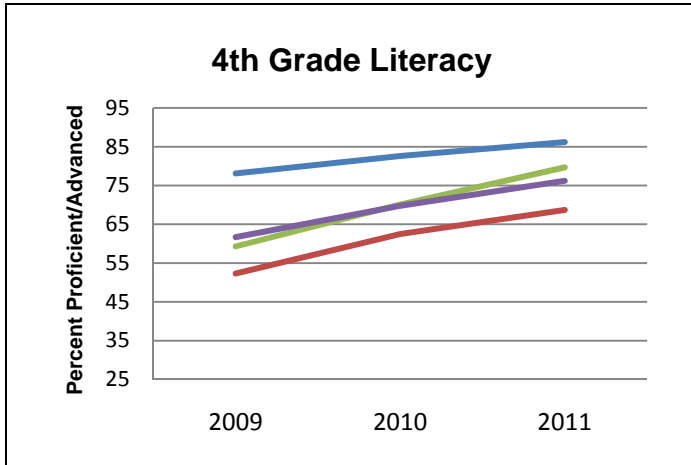
The results of the funding and resources supplied by the state are best considered through examination of the state's achievement data. Typically achievement gap studies use NAEP normative testing data to compare subpopulations. For a different perspective and because the subpopulations of interest are all within the state, this table compares the achievement progress for the Caucasian, African American, Hispanic, and Economically Disadvantaged subpopulations on Arkansas benchmark exams for the past three years in Grade 4, Grade 8, and Literacy (Grade 11).

Caucasian
Proficient/Advanced

African-American
Proficient/Advanced

Economic
Disadvantaged
Proficient/Advanced

Hispanic
Proficient/Advanced



The chart below shows the change (Δ) in the width of the achievement gap for the selected subpopulations. Negative change indicates that the gap is narrowing.

Caucasian/African American			
AR Benchmark Achievement Gap for Percent Proficient and Advanced	Gap in 09	Gap in 11	Δ in Width of the Gap
4 th grade literacy	25.8%	17.5%	-8.3%
4 th grade math	23.6%	19.6%	-4.0%
8 th grade literacy	27.1%	24.0%	-3.1%
8 th grade math	34.6%	34.7%	0.1%
11 th grade literacy	35.9%	33.0%	-2.9%

Caucasian/Hispanic			
AR Benchmark Achievement Gap for Percent Proficient and Advanced	Gap in 09	Gap in 11	Δ in Width of the Gap
4 th grade literacy	18.8%	6.5%	-12.3%
4 th grade math	10.3%	6.8%	-3.5%
8 th grade literacy	13.2%	8.9%	-4.3%
8 th grade math	15.9%	14.9%	-1.0%
11 th grade literacy	25.0%	24.6%	-0.4%

Caucasian/Economic Disadvantaged			
AR Benchmark Achievement Gap for Percent Proficient and Advanced	Gap in 09	Gap in 11	Δ in Width of the Gap
4 th grade literacy	16.4%	10.0%	-6.4%
4 th grade math	13.3%	10.5%	-2.8%
8 th grade literacy	17.3%	14.2%	-3.1%
8 th grade math	20.9%	19.5%	-1.4%
11 th grade literacy	24.8%	21.6%	-3.2%

SUMMARY

The matrix is the basis for determining a level of foundation funding. It was not intended to reimburse schools for actual expenditures but rather to establish a level of funding that is adequate for Arkansas schools to meet standards and to provide a substantially equal opportunity for an adequate education to the state's public school students. Districts bear responsibility for operating in an efficient and effective manner that focuses first on adequate academic instruction for their students. The variety of needs for different districts and their student characteristics make it unlikely that all individual matrix line items will fit all schools equally well, which is why the matrix is not mandated as an expenditure measure. As a result, superintendents are provided the flexibility to utilize these resources as they best see fit, with an assumption of optimal benefit for each school district. This study reviewed each line item of the matrix in an effort to identify how schools are providing for the resources identified in the matrix as necessary for an adequate education.

In FY2011, there was not a precise way to determine how foundation funds are expended for matrix line items because foundation funds are not segregated in the state accounting system. They are combined with other unrestricted funds. This will be simplified greatly in FY2012 through the use of separate funds for foundation funding only.

As in past years, districts spent more on some matrix line items than provided and less on other items. In a statewide context, districts are spending less on teachers and certified staff than what is provided in the matrix and more for the extra duty and operations and maintenance line items. They are also expending or transferring a substantial amount of foundation funds (\$364.37 per student) for items that are not readily assigned to matrix line items, e.g., instructional aides and transfers to other funds.

District expenditures of foundation or matrix funding should be reviewed in the context of the availability of other unrestricted funds and other restricted funds from state sources, such as categorical funding. Categorical funding is designed to address additional needs that exist in districts with large numbers of students in poverty, students at-risk of academic failure, and students who are English language learners. The funding picture as a whole must be considered when determining the adequacy of the state's support for the K-12 education system.

The academic achievement results of that funding system should also be considered. The schools or districts in the state's achieving category document the adequacy of the funding provided to those districts. For other districts that are struggling, the source of the need for improvement should be examined. The efficient and effective use of financial resources in those schools and districts, as well as academic practices, teacher quality, and school and district leadership, can be scrutinized. The ADE faces a weighty task in assessing and addressing districts in need of improvement, particularly those of priority and focus districts.

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APPENDIX A: EXPLANATION OF MATRIX LINE ITEMS

KINDERGARTEN TEACHERS - Generally includes educational activities for students of age 5 or 6.

CLASSROOM TEACHERS (OTHER THAN KINDERGARTEN AND SPECIAL EDUCATION) - Elementary, middle school and high school classroom activities including regular programs, workforce education programs, compensatory education programs, and other classroom instruction such as gifted and talented, art, choir, band or music. This line item does not include adult education and does not include athletics or student activities.

SPECIAL EDUCATION TEACHERS - Instruction services for students with disabilities or special needs.

INSTRUCTIONAL FACILITATORS - Includes Assistant Principals, Curriculum Supervisors, Instructional Facilitators.

LIBRARIAN OR MEDIA SUPPORT - Activities concerned with the operation and effective use of circulating books, reference materials, audio visual materials and other instructional media.

COUNSELORS -- Includes Guidance Counselors, School Nurse, Psychologists, Social workers.

PRINCIPAL - The principal is responsible for directing school activities and operations.

SCHOOL SECRETARY - Secretaries working with principal's office.

TECHNOLOGY - Includes instructional and administrative technology.

INSTRUCTIONAL MATERIALS - General and instructional supplies directly related to the instruction and instructional support functions.

EXTRA DUTY - Generally includes non-classroom duties of certified teachers related to athletics or student activities.

SUPERVISORY AIDES - Non-instructional supervision of students in the lunchroom, playground, etc.

SUBSTITUTES - Persons filling in for certified classroom teachers on a temporary as-need basis.

OPERATIONS AND MAINTENANCE - Activities concerned with maintaining the usefulness, comfort and safety of existing buildings, facilities and grounds. Does not include facilities acquisition and construction services relating to new buildings and facilities. Typical positions include plant supervisor, custodians, electricians, carpenter, crossing guards, etc.

CENTRAL OFFICE - Includes district level support such as superintendent, fiscal operations and purchasing.

TRANSPORTATION - activities relating to student transportation. Expenditures include bus maintenance, bus purchases, bus drivers, fuel and similar costs.

APPENDIX B: STANDARDS OF ACCREDITATION

9.03.4 GRADES 9-12

9.03.4.1 Language Arts - 6 units

4 units English

1 unit oral communications or 1/2 unit oral communications and 1/2 unit drama

1 unit journalism

(Other options as approved by the Department)

9.03.4.2 Science - 5 units (Active student participation in laboratory experience is required for a minimum of 20% of instructional time.)

1 unit biology

1 unit chemistry

1 unit physics

(Other options as approved by the Department)

9.03.4.3 Mathematics - 6 units

1 unit Algebra I

1 unit geometry

1 unit Algebra II

1 unit pre-calculus mathematics to include trigonometry

(Other options as approved by the Department)

9.03.4.4 Foreign Languages - 2 units of the same language

9.03.4.5 Fine Arts - 3 ½ units

1 unit art

1 unit instrumental music

1 unit vocal music

½ unit survey of fine arts or an advanced art or an advanced music course

9.03.4.6 Computer Applications with emphasis on current applications-1 unit

9.03.4.7 Social Studies - 4 units

1 unit American history with emphasis on 20th Century America

1 unit world history

½ unit civics

½ unit of Arkansas history if not taught in grade 7 or 8

(Other options as approved by the Department)

9.03.4.8 Economics - ½ unit

The Economics course must be taught by a teacher appropriately licensed in either Social Studies or Business Education.

9.03.4.9 Health and Safety Education and Physical Education - 1½ units

1 unit physical education

½ unit health and safety education

9.03.4.10 Career and Technical Education - 9 units of sequenced career and technical education courses (programs of study) representing three (3) occupational areas.