EXHIBIT D2

Adequacy Study 2024

Resource Allocation: School-level Resources

Prepared for the House and Senate Committees on Education

March 11, 2024

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Introduction

The second section of the matrix the legislature has used to determine funding for adequacy since 2003 is composed of the school-level resources deemed necessary to educate students to proficient – or adequate – levels of learning. This report will examine the funding and spending levels of each school-level resource represented in the matrix and, when possible, provide comparisons to use and cost of these resources in other states, best practices identified in education research, and survey responses from Arkansas educators.

School-Level Resources

Technology

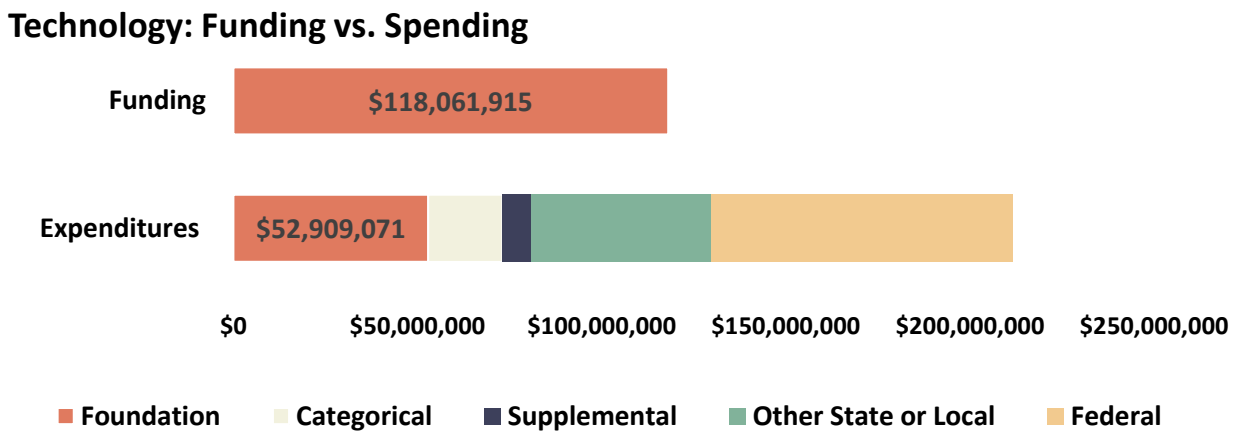
Funding

2023 /2024 / 2025 Per Pupil	2023 Total
$250 / $250 / $250	$118,061,915

In 2023, funding for technology accounted for 3.4% of foundation dollars. The $250 in the matrix for technology has remained at the same level since 2017, and provided $118 million in total funding in FY2023.

Spending

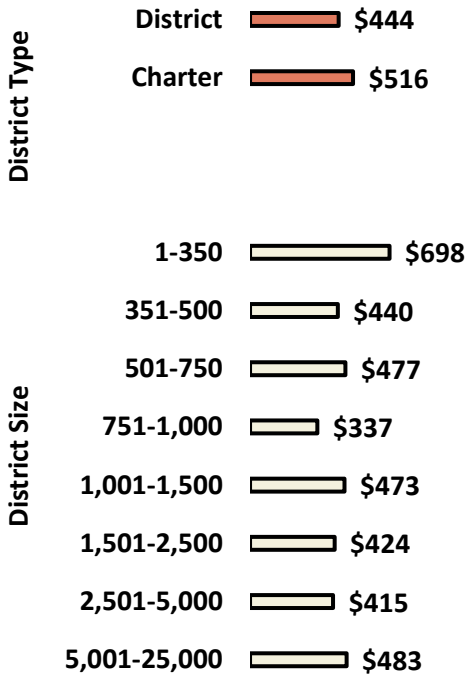
In 2023, public school districts and charter systems in Arkansas spent $211.6 million or $447 per student on technology, which was not quite twice the amount they received in foundation funding, with stand-alone preschool spending accounting for $247,232 of the total. Federal funds were the largest fund source for technology expenditures accounting for $82 million or 39% of the total (none were coded as one-time Elementary and Secondary School Emergency Relief (ESSER) funds).

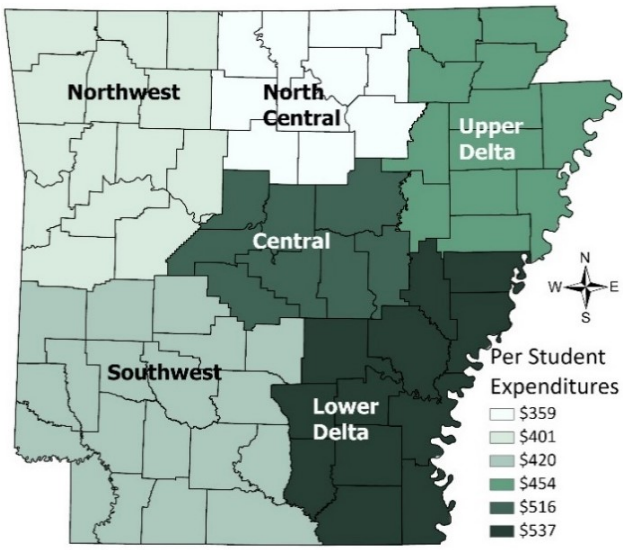


In terms of what was purchased, the largest amount of technology expenditures -- $34.6 million – were spent on a category of items labeled District Defined, with about a third of this expenditure assigned an Arkansas Public School Computer Network (APSCN) function code of instruction-related technology.

The next largest amount – $32.2 million – went toward Technology Related Hardware, which was followed by $30 million for Software. Because many technology expenses are coded to the district offices rather than to individual school buildings, the following charts make comparisons among districts only and not among school types.

The Lower Delta region spent the most on technology, spending $537 per student and the North Central region spent the least per student, spending $359 per student.





Map prepared by the Bureau of Legislative Research, Policy Analysis & Research Section School District and County Boundaries from the GIS Office integrated the Arkansas Spatial Data.

Research and Best Practices

In their latest evidence-based study,[1] Odden and Picus kept the $250-per-student technology funding amount they had recommended for more than a decade, with the following breakdown: $71 for computer hardware; $72 for operating systems, productivity and non-instructional software; $55 for network equipment, printers and copiers; and $52 for instructional software and additional classroom hardware. The recommendation for $250 is for school districts and charter systems to equip schools at a 1:3 computer-student ratio. Odden and Picus recommend $400 per student when a 1:1 ratio is in effect, and the districts are using Google or Chromebook-based computers. While Odden and Picus remain neutral on the educational benefit of 1:1, they do point out that increased online standardized testing, especially as it more frequently occurs in lower grades, makes it more necessary for students to feel comfortable learning and testing in a digital environment. They also point out a 1:1 computer-to-student ratio and digital learning depends greatly on students' ability to access the Internet while at home.

The pandemic also brought sharp focus to the use of technology in instruction. Prior to the pandemic, *Education Week* examined three research projects examining the effectiveness of digital learning. All three found digital learning could be beneficial, allowing students access to topics they might not have in their own school buildings, but the research found, "on average, students do worse in the online setting, and this is particularly true for students with weaker academic backgrounds." Through the examination of these three research studies, however, the author did conclude it is time to "embrace

[1] Odden, A. and Picus, L. (2019). *School finance: A policy* perspective, 6th ed. New York: McGraw-Hill, pages 116-121, 146.

and improve" online instruction and "online courses need a strong curriculum and strong pedagogical practices."[2]

Researchers during the pandemic noted "while education gaps existed pre-pandemic, the situation worsened during the current global crisis as students, parents, and educators struggled to meet educational goals in the new instructional era (Cottingham et al., 2020; Engzell et al, 2020)."[3] Reasons cited by various researchers for the worsening achievement gap were the lack of or limited access to online resources for many families of low socioeconomic status, lack of involvement or knowledge by some parents, and lack of online teaching expertise and technology-related resources for many teachers. These challenges resulted in districts to use a variety of instructional delivery methods, including synchronous and asynchronous online instruction, alternating half-day student schedules, and the provision of hard copy materials for students to pick up and work on at home. For instance, communities and schools without adequate broadband or enough personal devices had to resort to "packaging hard copy instructional materials for their students/parents to pick up and drop off. This instructional delivery process approach added a lag time when packages were not picked up, completed, or promptly returned."[4]

A January 2021 report published by the International Society for Technology in Education (ISTE), a nonprofit organization working with the education community to accelerate the use of technology in education, noted that while technology, used effectively, can enable all students to be lifelong learners and help to close achievement gaps, "COVID-19 has exposed a deep lack of expertise among educators when it comes to using technology in ways that accelerate learning."[5] ISTE recently created ISTE Standards for Educators, which have been adopted by all 50 states and "provide a roadmap for helping develop students into empowered learners" by calling on educators to serve as a:

- **Learner**. Continuously improve instructional practices by learning from and with others
- **Leader.** Seek leadership opportunities to support student empowerment
- **Citizen.** Inspire students to positively contribute to and responsibly participate in the digital world
- **Collaborator.** Collaborate to share resources and ideas and solve problems
- **Designer.** Design learner-driven activities and environments
- **Facilitator.** Facilitate student achievement of the ISTE Standards for Students
- **Analyst.** Use data to drive instruction and support students in achieving their learning goals[6]

In 2021, ISTE reviewed guidance published by states to evaluate how states' included ISTE Standards, finding many variabilities in how the states were incorporating some or all of the standards. Arkansas was recognized for addressing five of the seven standards – only Leader and Facilitator roles were not addressed.[7]

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[2] Loeb, Susan. "How Effective is Online Learning? What the Research Does and Doesn't Tell Us," Education Week, March 20, 2020.

[3] Ogodo, J.A., Simon, M., Morris, D., Akubo, M. "Examining K-12 Teachers' Digital Competency and Technology Self-Efficacy During COVID-19 Pandemic," Journal of Higher Education Theory and Practice Vol. 21 (11) 2021, pages 15-17. https://doi.org/10.33423/jhetp.v21i11.4660

[4] Ibid.

[5] Culatta, Richard, and Song, Ji Soo, "From Crisis Management to Sustained Change: States Leading with the Future of Learning With the ISTE Standards," International Society for Technology in Education, January 2021, page 4.

[6] Ibid, page 9.

[7] Ibid, pages 11 and 23.

Arkansas Educators' Input

Survey Says: Just less than half – 49% of superintendents - said they had a moderate or extreme need for more funding for technology, while 16% cited no need for additional technology dollars.[8] No detectable patterns emerged when comparing responses from superintendents among the various categories of school districts.

Furthermore, the vast majority of superintendents agreed the broadband in their districts was sufficient most or all of the time in meeting instructional and administrative needs, while only about two-thirds agreed that their community's broadband was sufficient most or all of the time in meeting these same needs.[9] The only statistically significant pattern detected between types of schools is that superintendents in the quintile of school districts with the highest concentrations of free and reduced-price lunch (FRPL) students were less likely to say the community's broadband was sufficient than superintendents in the quintile of school districts with the lowest concentrations of FRL students.

Superintendents also reported that 69% of their districts' students, on average, were allowed to take home a school-owned computer or tablet, while about 45% of students, on average, already had access to a computer or tablet at home (although they may still take home a school-owned device.)[10]

Arkansas principals and teachers were also asked to respond to a series of questions adopted from a National Center for Educational Statistics survey regarding education technology that was posed to a national sample of school administrators in 2021.[11] The results from all three sets of respondents are below (please keep in mind that the state responses were made in 2023, so two years after the national responses). It is worth noting that on almost all of the questions, both national and state administrators were more likely to report that they agreed or strongly agreed with the following statements than were Arkansas teachers responding to the same statements.[12]

[8] See Superintendent Survey Responses, question 4.

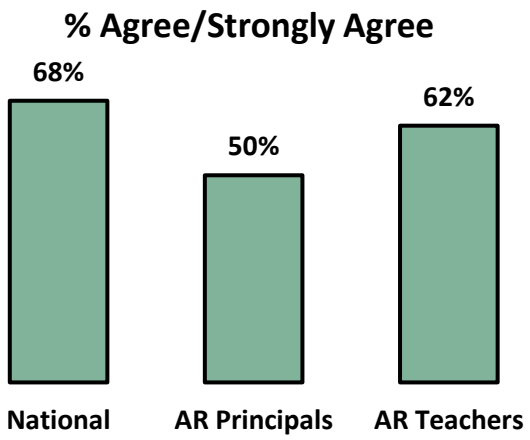
[9] See Superintendents Survey Responses, question 54.

[10] See Superintendents Survey Responses, questions 52 and 53.

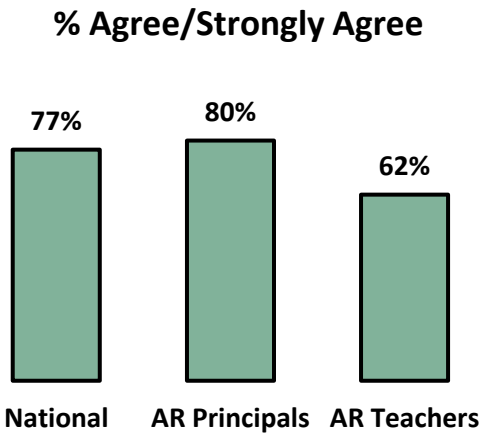
[11] U.S. Department of Education national Center for Education Statistics (NCES) Fast Response Survey system Use of Educational Technology for Instruction Public Use File, 2021.

[12] See Principals Survey Responses, question 63, and Teachers Survey Responses, question 59.

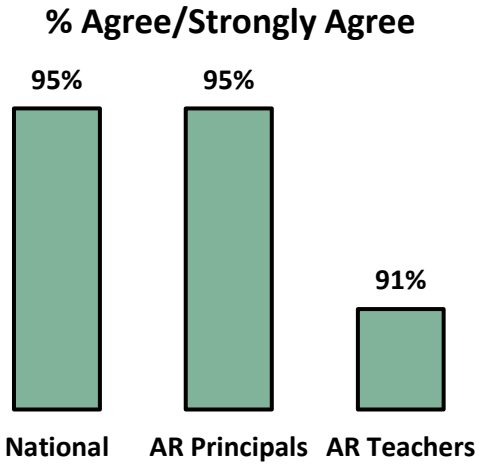
Competing priorities in the classroom adversely affect the use of education technology



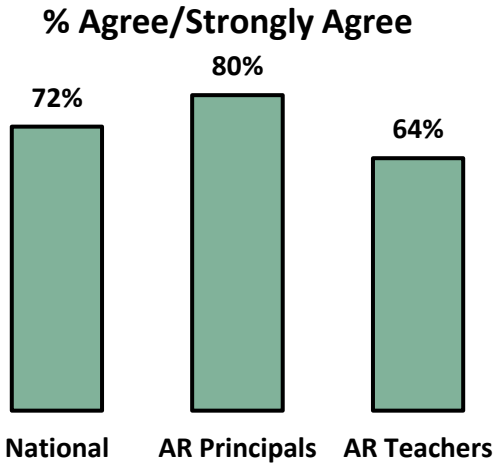
Teachers are sufficiently trained in the mechanics of technology use



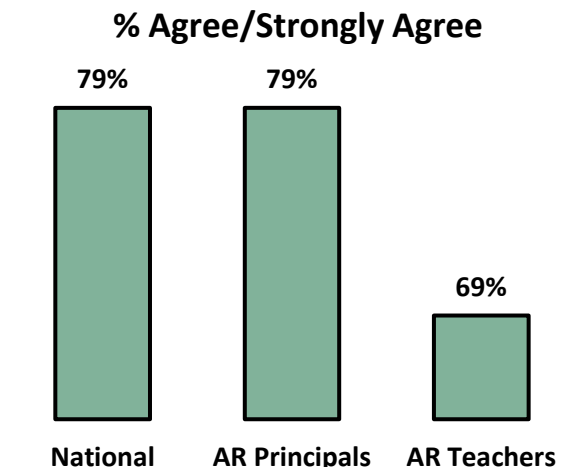
Teachers are interested in using technology in classroom instruction



Teachers are sufficiently trained to integrate technology into classroom instruction



Technical support for educational technology is adequate



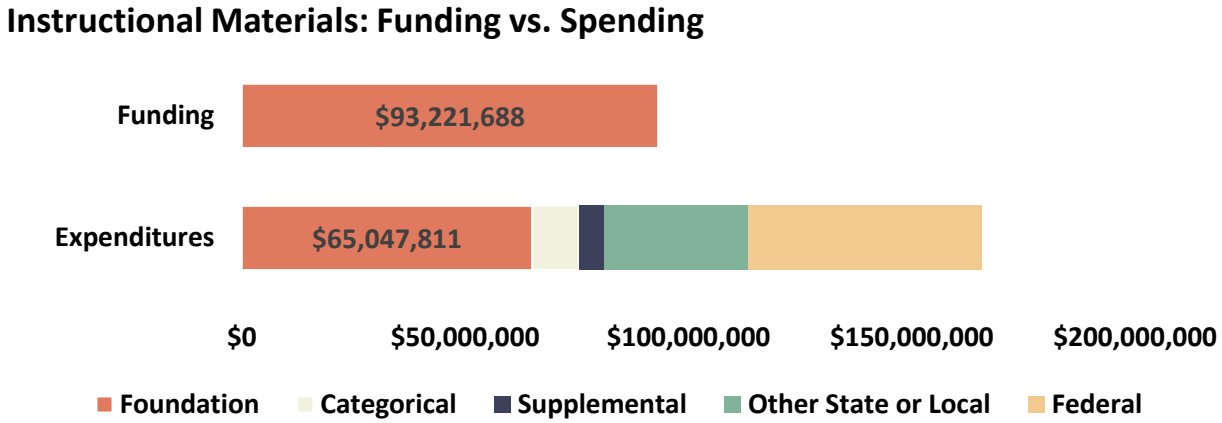
Instructional Materials

Funding

In 2023, the $197 provided per student for instructional materials provided $93 million in total funding and accounted for 2.7% of foundation dollars.

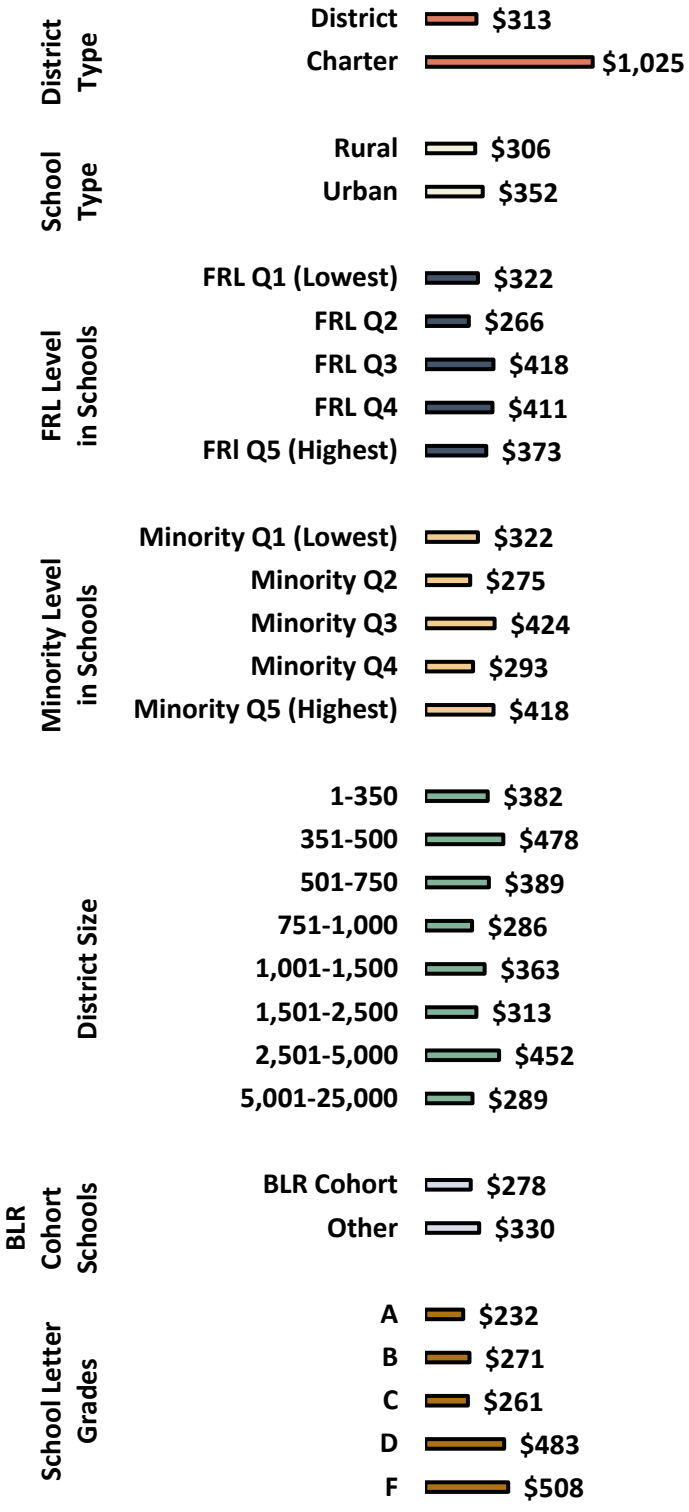
2023 /2024 / 2025 Per Pupil	2023 Total
$197 / $201 / $205	$93,221,688

Spending



On the whole, schools receive more in foundation money for instructional materials than the foundation funds they spent on instructional materials, $93 million versus $65 million. However, when considering all sources of funding used to pay for instructional materials, schools spend nearly $166 million, or $350 per student. Preschool costs account for nearly $242,789 of that total.

Per-Pupil Spending by School Type

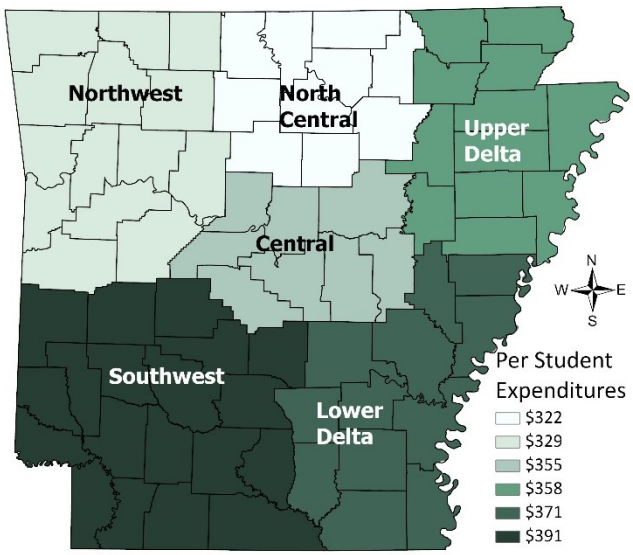


When comparing per-pupil spending levels by category, few patterns emerge except in the comparison between public charter schools and traditional schools, where the charters appear to be spending three times more per pupil than traditional schools spend per pupil.

Higher spending by charters is primarily due to the impact of spending at two virtual charter schools:

Arkansas Virtual Academy spent $3,047 per pupil, with about $8.2 million or $2,159 per student spent on eTextbooks; and Arkansas Connections Academy spent $2,617 per pupil, with $5.1 million, or $1,552 per student spent on eTextbooks. Otherwise, public charter systems ranged from $49 per pupil (Haas Hall) to $931 per pupil (Friendship Aspire Academies) in their expenditures on instructional materials.

Schools in the North Central region spent the least per student on instructional materials, $322, and the Southwest region spent the most at $391 per student.



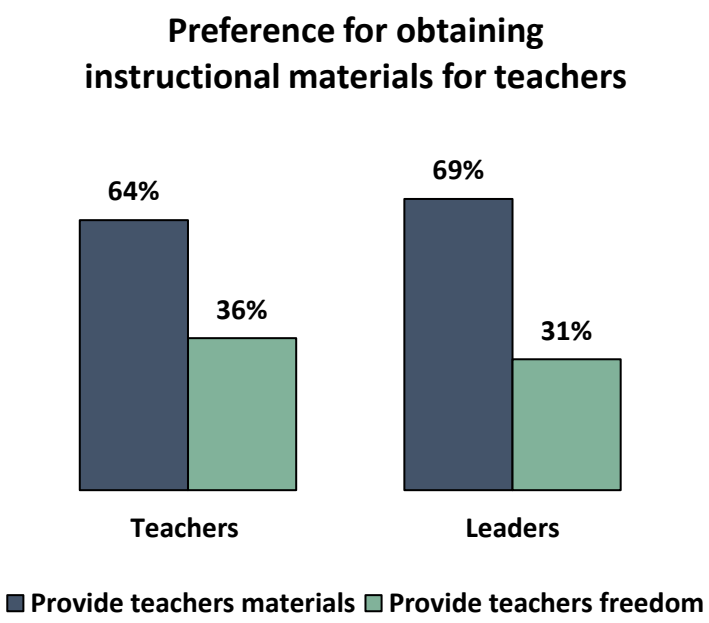
Map prepared by the Bureau of Legislative Research, Policy Analysis & Research Section School District and County Boundaries from the GIS Office integrated the Arkansas Spatial Data.

Research and Best Practices

Odden and Picus emphasize that "up-to-date" instructional materials are paramount." Odden and Picus put the costs of high school textbooks at $80 to $140 per book, and they recommend a six-year review of textbooks to keep curricula up to date. In terms of per-student spending, they recommend $170 per student for instructional materials and $30 per student for library materials, or $200 in total.[13]

A good deal of recent research has focused on the impact of high-quality instructional materials (HQIM), and the National Conference of Chief School Officers (NCCSO) has established the Instructional Materials and Professional Development Network, of which Arkansas was a member during the 2022-23 school year. According to NCCSO, the Network is "dedicated to ensuring that every student, every day, is engaged in meaningful, affirming, grade-level instruction. To realize this vision, research suggests that high-quality, standards-aligned curricula and professional learning connected to that curricula are crucial."[14]

The Center for American Progress, an independent, nonpartisan policy institute, found that the "selection and adoption of high-quality instructional materials is a critical first step to improving student learning."[15]



In a national survey conducted in 2021[16], both teachers and school leaders were more likely to report that the largest help in providing students with a great education would be for teachers to be provided with "better instructional materials, including digital resources, that are aligned to state learning standards" than giving "teachers more freedom to find and use instructional materials of their own choosing."

Several studies cited by both the Center for American Progress and EdReports, an independent, non-profit designed to improve K-12 education, find that high-quality instructional materials cost about the same as other materials and are therefore an efficient way to boost student achievement without increasing financial commitments.[17]

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[13] Odden, A. and Picus, L. (2019). *School finance: A policy* perspective, 6th ed. New York: McGraw-Hill, pages 112-114.

[14] National Conference of Chief School Officers (NCCSO), High-Quality Instructional Materials and Professional Development (IMPD) Network.

[15] Miller, Amanda Fuchs and Partelow, Lisette, "Successful Implementation of High-Quality Instructional Materials: 5 Case Studies," Center for American Progress, September 2019, page 15.

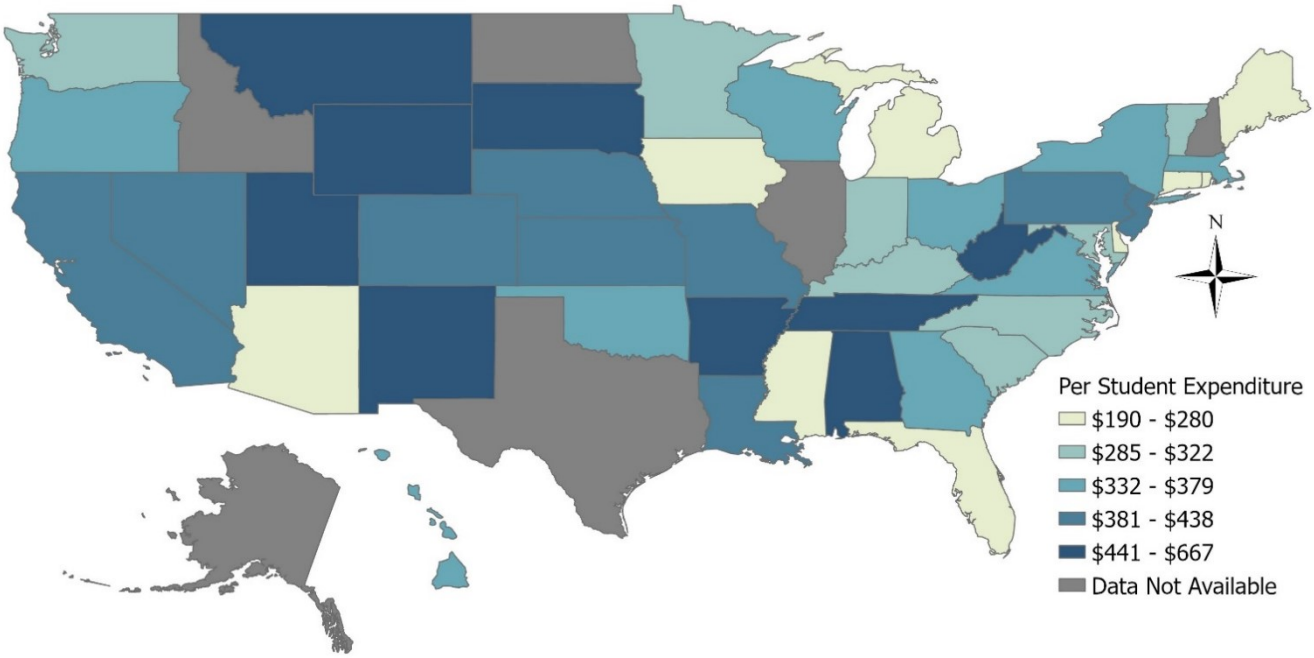
[16] Berenson Strategy Group, a consulting and strategic research firm, online survey supported by the Walton Family Foundation among 600 teachers and 200 school- and district leaders between Dec. 21, 2020, and Jan. 7, 2021, as reported in "Building Pathways to HQIM," Arkansas Division of Elementary and Secondary Education, Arkansas Department of Education, February 2022, page 8.

[17] Boser, Ulrich; Chingos, Matthew; and Straus, Chelsea, "The Hidden Value of Curriculum Reform," Center for American Progress, October 2025, and "Why Materials Matter," EdReports infographic retrieved at

DESE considers HQIM to be "curriculum materials aligned to state academic standards that include evidence-based strategies, inclusive practices, and embedded teacher supports" that "take into account the needs and experiences of diverse learners that are actively literate, critical thinkers, and community engaged."[18]

National Comparison

The map below shows a comparison of states' per-student expenditures for textbooks (classrooms and libraries) and supplies (consumables, copying and replacements of worn out or deteriorated instructional supplies). Note that data was not available for six states: Alaska, Idaho, Illinois, New Hampshire, North Dakota and Texas. Arkansas spent $445 per student. New Mexico spent the highest amount per student, $667, and Rhode Island spent the least, $190.



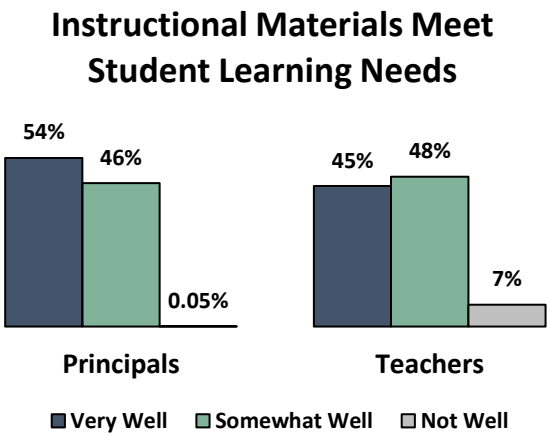
Source: U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD), "National Public Education Financial Survey (State Fiscal)", 2019-20 (FY 2020) v.2a; "State Nonfiscal Public Elementary/Secondary Education Survey", 2019-20 v.1a, 2022-23 v.1a.

https://storage.googleapis.com/edreports-206618.appspot.com/impact/wmm/download/EdReports_WhyMaterialsMatter_100119_LR.pdf, slide 6.

[18] *Ibid,* page 6.

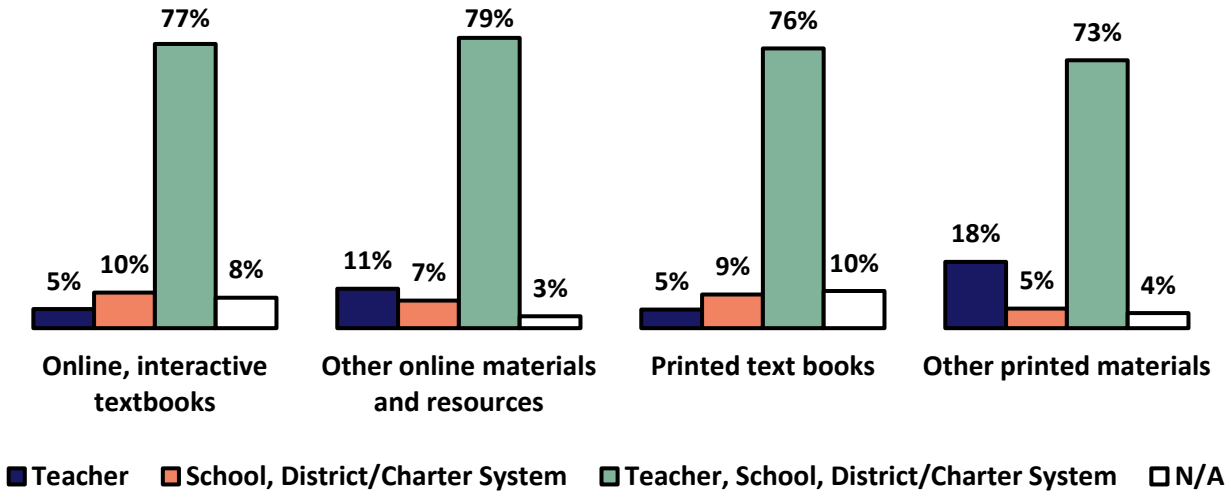
Arkansas Educators' Input

Almost 100% of principals and 93% of teachers believe their instructional materials meet student learning needs either "very well" or "somewhat well".[19]



Principals and teachers were also asked who selects various types of curricula at their schools.[20] Principals tended to see the selection more as a collaborative process in the hands of the school, district and teachers, rather than solely being selected by the teacher or the district or charter system for all types of materials. Teacher responses varied depending on the type of instructional material. For "online, interactive textbooks" and "printed text books", the greatest number of teachers responded their school or district/charter system selected the materials.[21] For the other types of materials, "other online materials and resources" and "other printed materials", the greatest number of teachers reported they make the selections.

Principals: Who selects instructional materials?

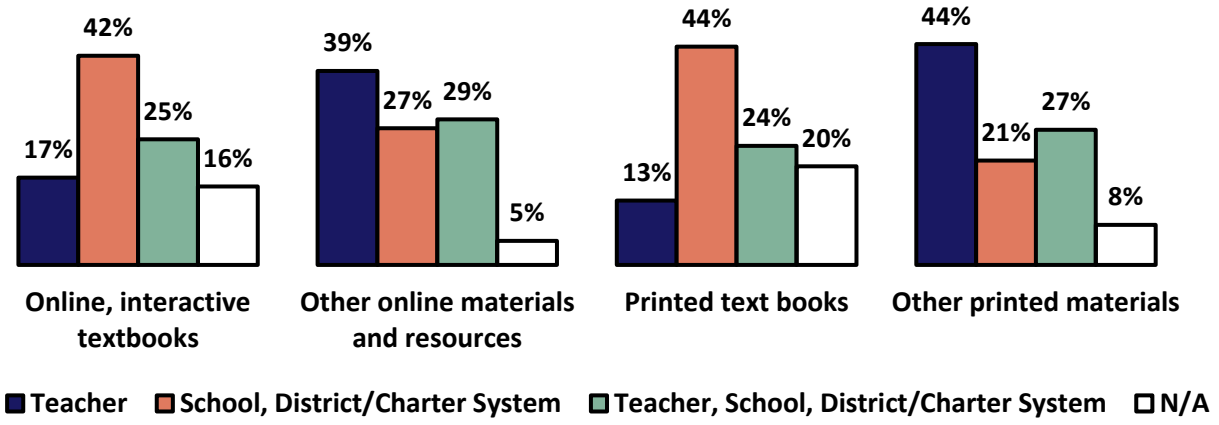


[19] See Principals Survey Responses, question 60, and Teachers Survey Responses, question 54.

[20] See Principals Survey Responses, question 9, and Teachers Survey Responses, question 53.

[21] Please see question 59 of the Principal Survey Responses report and question 53 of the Teacher Survey Responses report.

Teachers: Who selects instructional materials?



Extra Duty Funds

Funding

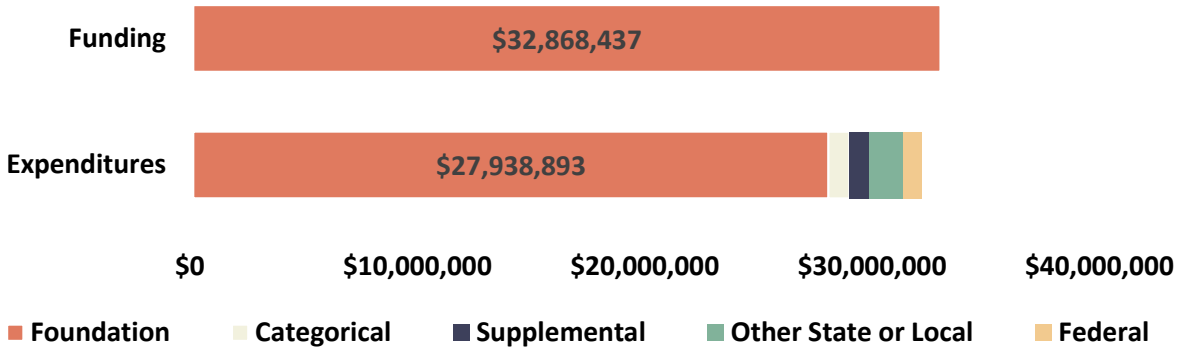
Extra duty funds are funds schools use to pay stipends for teachers who coach athletics and those who supervise after-school clubs or other extracurricular activities. In 2023, funding for extra duty funds accounted for 0.9% of foundation funding.

2023 / 2024 / 2025 Per Pupil	**2023 Total**
$69.90 / $70.90 / $72.40	$32,868,437

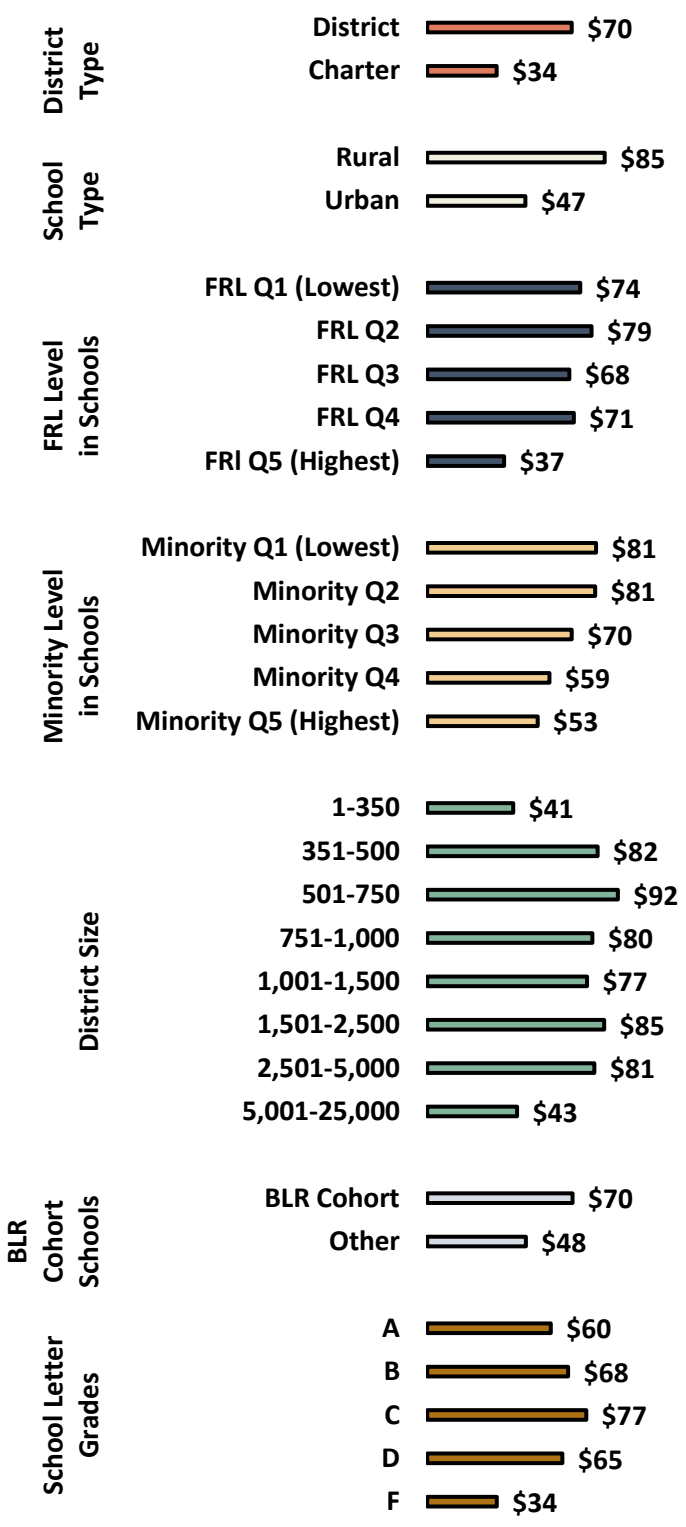
Spending

In 2023, districts received $32,868,437 in extra duty funds, and spent $27,388,893, with an additional $4,096,453 in other funds.

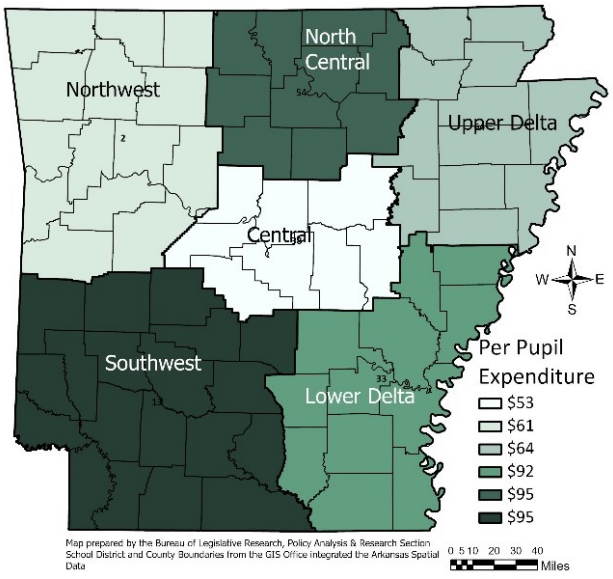
Extra Duty Funds: Funding vs. Spending



Per-Pupil Spending by School Type



When looking at average spending levels within the different types of schools and districts in Arkansas, "F" schools, charter schools, and those with the highest free/reduced lunch populations spent the least on extra duty funds per pupil. Rural districts and districts with 501 to 750 students spent the most, on average, per student on extra duty funds. Spending decreased with higher levels of minority students.



Research and Best Practices

No common model exists for allocating state support for student activities. Neither is there a model that recognizes the higher costs faced by small schools and districts due to longer travel distances.[22] Extracurricular activities have a number of benefits for students, including better academic performance, reduced rates of dropout, positive school perceptions, and high self-esteem. [23] According to Augenblich, Palaich, and Associates' (APA) 2020 Arkansas study, other state adequacy studies have not addressed extra duty funds. In APA's educator panels and stakeholder surveys, participants indicated that the amounts should be revisited in light of minimum wage increases.[24] In 2018, Arkansas voters approved a ballot measure gradually increasing the hourly minimum wage from $8.50 to $11 by 2021.[25]

Arkansas Educators' Input

Survey Says: 57% of superintendents reported that their districts were in moderate or extreme need of more funding for extra duty funds.[26]

Supervisory Aides

Funding

Supervisory aides are staff who help students get on and off buses in the morning and afternoon and who supervise lunch and recess periods. In 2023, funding for supervisory aides accounted for 0.8% of foundation funding.

2023 / 2024 / 2025 Per Pupil	**2023 Total**
$52.60 / $56.80 / $58.00	$26,346,697

Spending

In 2023, districts received $26,346,697 in foundation funding for supervisory aides per the matrix, spent $7,142,190 in foundation funds, and spent an additional $1,918,464 in other funds.

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[22] Odden, A. and Picus, L. (December 2020) "The 2020 Recalibration of Wyoming's Education Resource Block Grant Model Final Report."

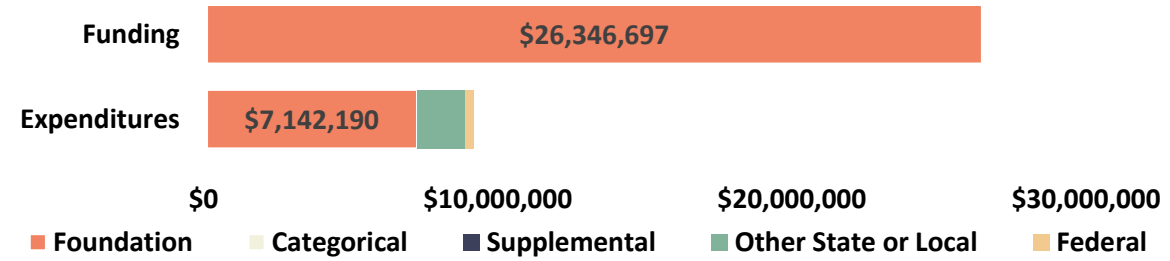
[23] Odden, A. and Picus, L. (December 2020) "The 2020 Recalibration of Wyoming's Education Resource Block Grant Model Final Report;" Feldman, A. and Matjasko, J. (Review of Educational Research, Summer 2005.) "The Role of School-Based Extracurricular Activities in Adolescent Development: A Comprehensive Review and Future Directions;" and Knop, B. and Siebens, J. (U.S. Census Bureau, November 2018). "A Child's Day: Parental Interaction, School Engagement, and Extracurricular Activities: 2014."

[24] Odden, A. and Picus, L. (Presentation to the Senate Committee and Education and the House Committee on Education, October 19, 2020.) "Review of the Resource Matrix."

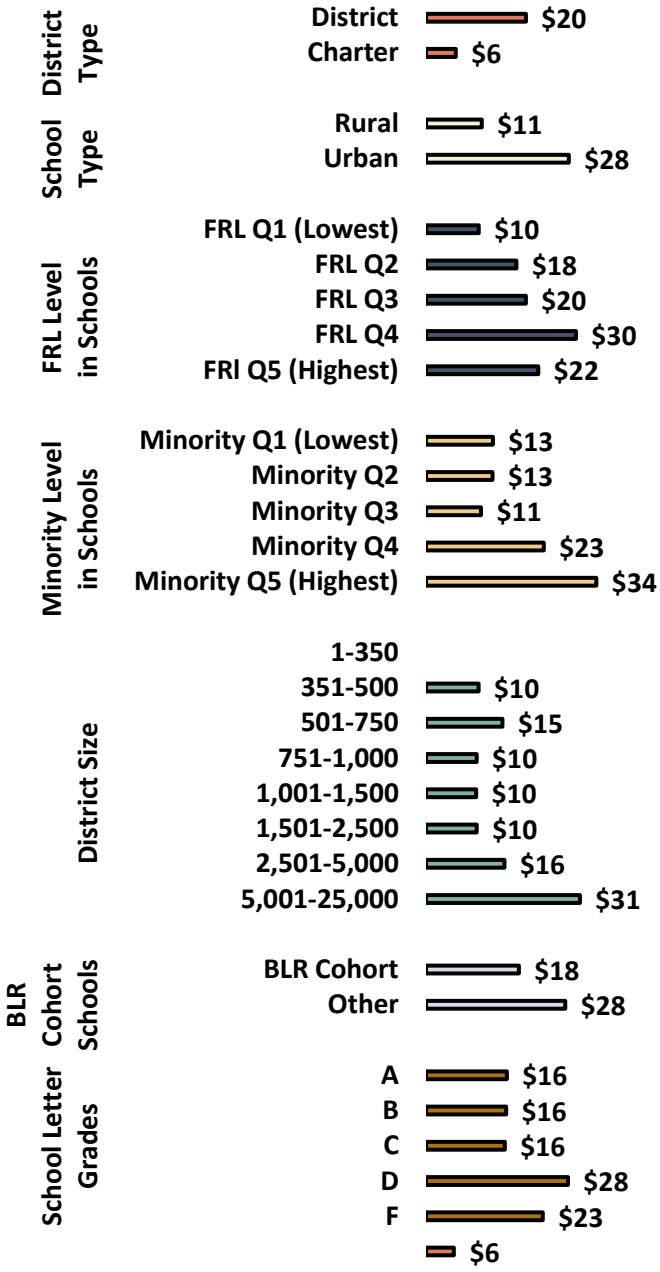
[25] Arkansas Department of Labor and Licensing, "Minimum Wage and Overtime," https://www.labor.arkansas.gov/divisions/labor-standards/minimum-wage-and-overtime/, accessed September 29, 2021.

[26] See Superintendent Survey Responses, question 4.

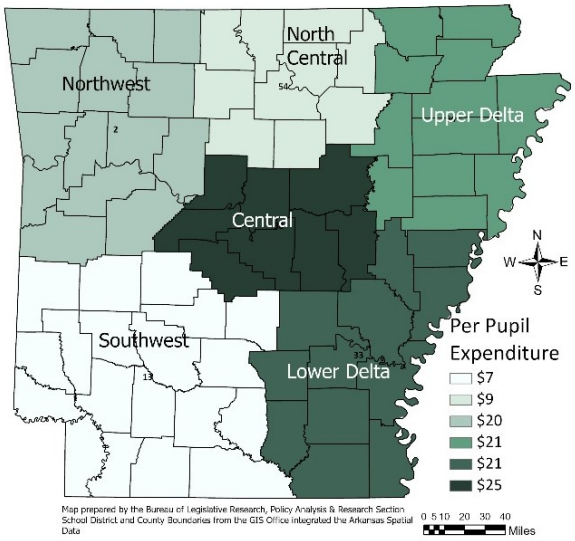
Supervisory Aides: Funding vs. Spending



Per-Pupil Spending by School Type



When looking at different types of schools and districts in Arkansas, charters spent the least amount per pupil on supervisory aides. Districts with more than 5,000 students and those with the highest percentage of minority students spent the most per pupil.



Research and Best Practices

While schools need staff for non-instructional responsibilities like lunch duty, hallway monitoring, before and after school playground supervision, and others, research does not support the use of supervisory aides to be used as general teachers' helpers.[27] These "instructional aides" in a regular-sized classroom do not positively impact student achievement.[28]

According to APA's 2020 Arkansas study, other state adequacy studies have not addressed supervisory aides. In APA's educator panels and stakeholder surveys, participants indicated that the amounts should be revisited in light of minimum wage increases.[29] As noted above, Arkansas's minimum wage increased between 2018 and 20 21 from $8.50 to $11.

Arkansas Educators' Input

Survey Says: 53% of superintendents reported that their districts were in moderate or extreme need of more funding for supervisory aides.[30]

Substitutes

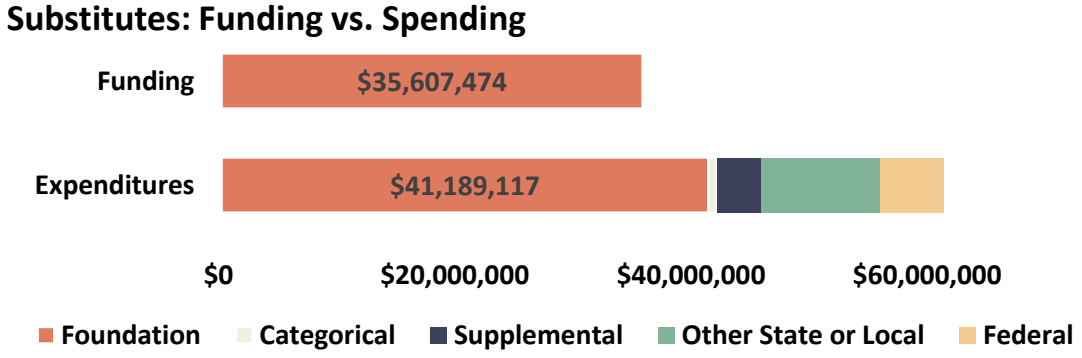
Funding

Many states provide funding for about 10 days for each teacher, similar to companies and government providing one sick day per month for employees.[31] In 2023, funding for substitutes accounted for 1.0% of foundation funding.

2023 / 2024 / 2025 Per Pupil	2023 Total
$69.90 / $70.90 / $72.40	$35,607,474

Spending

In 2023, districts received $35,607,474 in foundation funding for substitutes, spent $41,189,117 in foundation funds, and spent $19,967,187 in other funds.



[27] Odden, A. and Picus, L. (2020). "The 2020 Recalibration of Wyoming's Education Resource Block Grant Model Final Report."

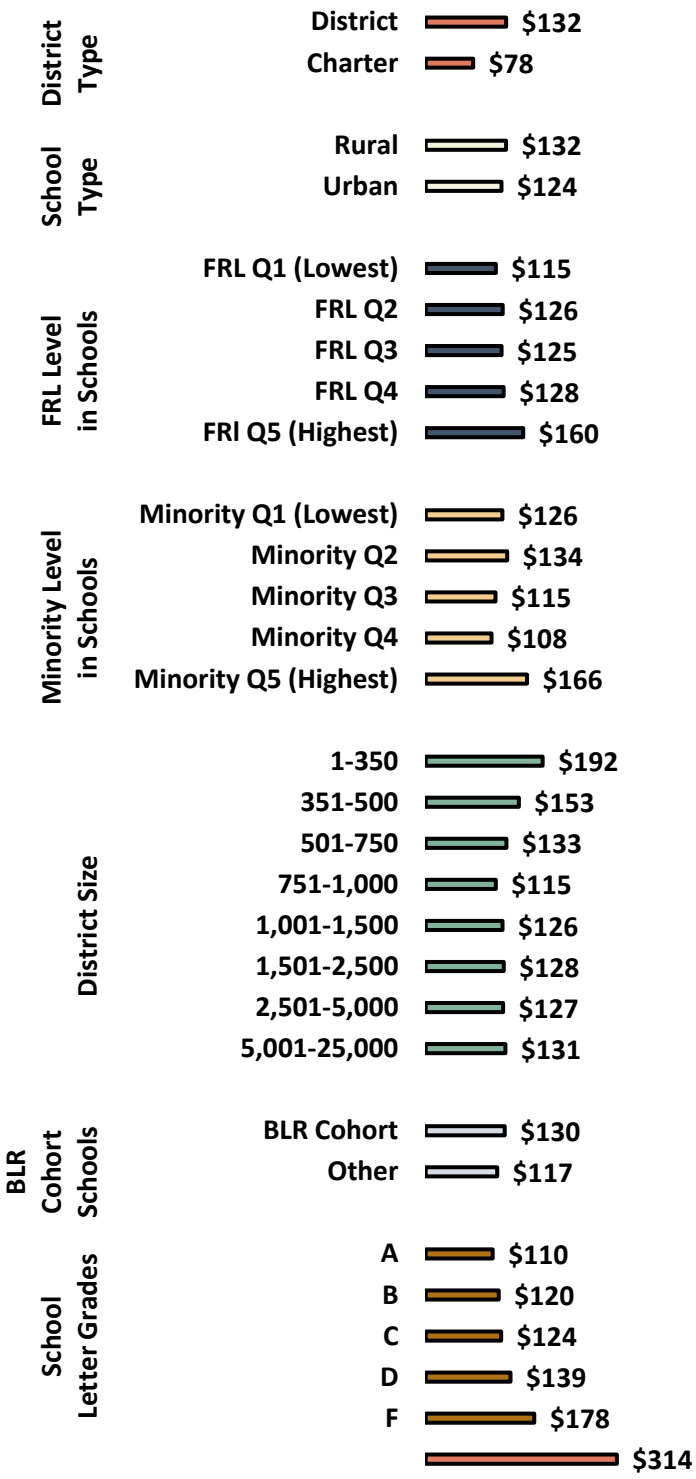
[28] Gerber, S., Finn, J., Achilles, C. and Boyd-Zaharias, J. (Educational Evaluation and Policy Analysis, Summer 2001.) "Teacher Aides and Students' Academic Achievement."

[29] Odden, A. and Picus, L. (Presentation to the Senate Committee and Education and the House Committee on Education, October 19, 2020). "Review of the Resource Matrix."

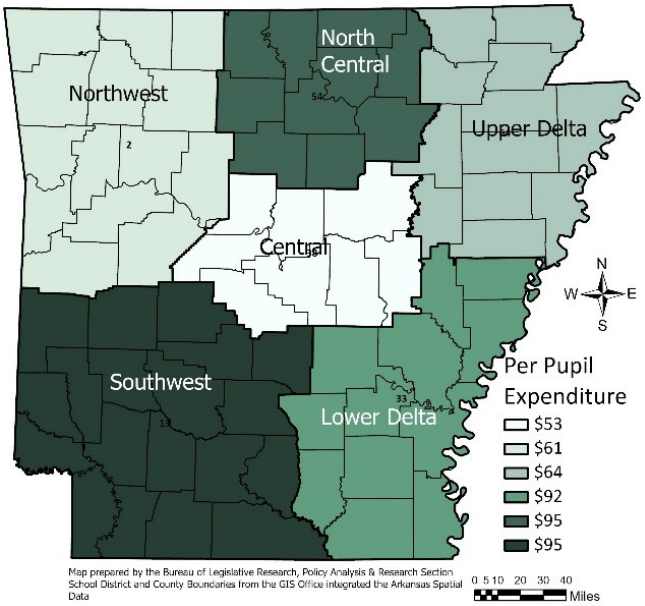
[30] See Superintendent Survey Responses, question 4.

[31] Odden, A. and Picus, L. (2020). "The 2020 Recalibration of Wyoming's Education Resource Block Grant Model Final Report.".

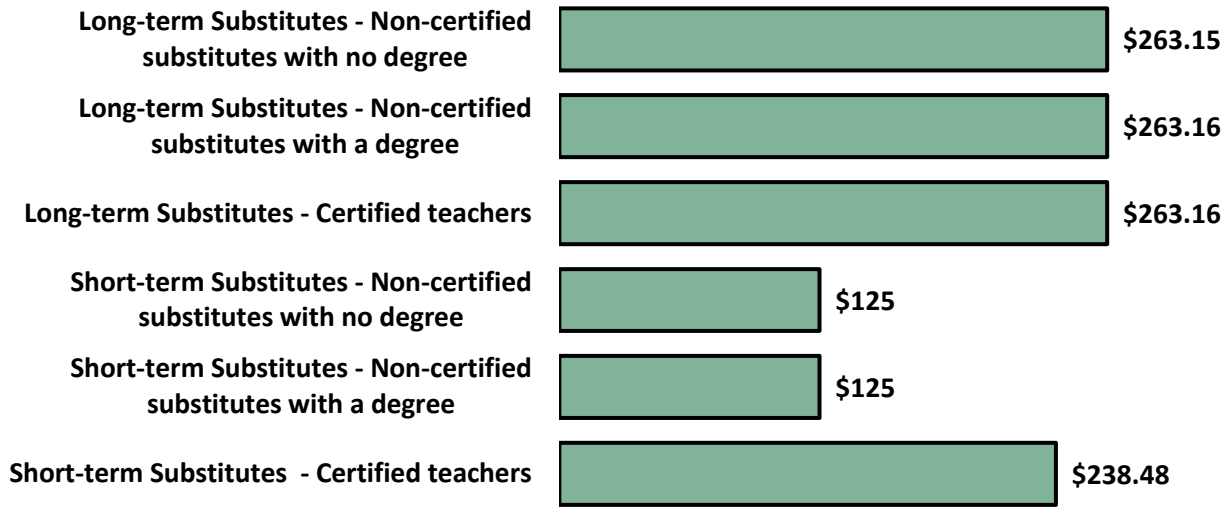
Per-Pupil Spending by School Type



When looking at different types of schools and districts in Arkansas, the smallest districts and "F" schools spent the most per pupil on substitutes. Charter schools spent the least per pupil on substitutes.



Highest Daily Rate of Pay



Research and Best Practices

According to APA's 2020 Arkansas study, other state adequacy studies have not addressed substitutes. In APA's educator panels and stakeholder surveys, participants indicated that the amounts should be revisited in light of minimum wage increases.[32] As noted above, Arkansas's minimum wage increased between 2018 and 2021 from $8.50 to $11.

Arkansas Educators' Input

Survey Says: 70% of superintendents reported that their districts were in moderate or extreme need of more funding for substitutes.[33]

2023 LEGISLATION

Act 372 - Selection, Relocation, and Retention of Materials

The act creates the offense of furnishing harmful items to a minor, eliminates the defense to prosecution for disseminating material that is claimed to be obscene for schools and public libraries, and adds loaning a book from a library to the list of actions that can constitute the offense of possessing, selling, or distributing obscene material. The act also establishes requirements for media centers and public libraries regarding the selection, relocation, and retention of physical materials that are available to the public and provides a process for challenging materials that are available to the public in media centers and public libraries if a person believes the material to be inappropriate. The act also allows libraries to disclose confidential library records to the parent or legal guardian of a library patron who is a minor.

[32] Odden, A. and Picus, L. (Presentation to the Senate Committee and Education and the House Committee on Education, October 19, 2020). "Review of the Resource Matrix."

[33] See Superintendent Survey Responses, question 4.