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Technical Documentation for the Fourth American School District Panel Survey

The RAND American Educator Panels (AEP) consist of three standing panels of educators: the American Teacher Panel, the American School Leader Panel, and the American School District Panel (ASDP). A survey panel consists of individuals who agree to take a series of surveys over time. The AEP began in 2014 and expanded significantly during the 2016–2017 and 2017–2018 school years (Robbins and Grant, 2020).

The newest panel in the AEP, the ASDP, includes more than 950 school districts as of December 2021. The American Teacher Panel, meanwhile, includes more than 25,000 teachers, and the American School Leader Panel includes more than 7,000 school principals.

We recruit AEP members using probabilistic sampling methods from the most-comprehensive lists of teachers, principals, and school districts available. This sampling method allows us to weight survey results to generalize to the national populations of these educators and school districts. The panels are designed to generate samples of sufficient size to facilitate national-level analyses, including analyses of prevalent subgroups. Sampling for each panel is done independently, so although there might be overlap between districts, schools, and teachers in the AEP, it is incidental.

About the American School District Panel

The ASDP sample consists of traditional K–12 public school districts and charter management organizations (CMOs). We send the initial invitation to enroll in the ASDP to district superintendents or CMO directors. As part of the enrollment process, respondents have the opportunity to designate a point of contact for the district to receive future survey requests.

Of the 3,864 districts and CMOs that we invited to join the ASDP between fall 2020 and fall 2021, 987 agreed to become members, which is a recruitment rate of 25.5 percent. The 987 ASDP members consist of 891 traditional public school districts and 96 CMOs, which are located across the 50 states and the District of Columbia. More information about how we recruited ASDP members is available on the ASDP website (RAND Corporation, undated).

Survey Sample and Administration

We developed the fourth ASDP survey in consultation with our sponsor, the Bill & Melinda Gates Foundation, and our four project partners: the Center on Reinventing Public Education, Chiefs for Change, the Council of the Great City Schools, and Kitamba. The sponsor provided feedback on the survey; however, we maintained final editorial control of the survey items. The survey had an approximate administration time of ten minutes. We fielded it online from October 25, 2021, through December 10, 2021.

Participation in ASDP surveys, including this November 2021 survey, is limited to ASDP member districts and CMOs. Survey requests were emailed to the district's point of contact (most commonly the superintendent), who might share the survey with others to determine the most appropriate person(s) to complete the survey on behalf of the district or CMO.

As in previous ASDP survey cycles, we invited those districts and CMOs in our sample that had not yet enrolled in the ASDP to do so. For those districts, after a district superintendent or their designee consented and completed the ASDP enrollment process, we immediately requested that they complete the November 2021 survey. We do not use incentives to encourage districts to complete the surveys or join the panel.[1]

Of the 987 districts and CMOs that have enrolled in the panel between fall 2020 and fall 2021, 359 participated in this survey, for a survey completion rate of 36.4 percent.[2] Among the responders, 103 were newly enrolled districts, while 256 had previously enrolled and participated in one or more ASDP surveys. Eighty-three percent of surveys were completed by superintendents or executive directors, 4 percent were completed by assistant or associate superintendents, 8 percent were completed by the district's research director, and 5 percent were completed by people with other job titles.

Table 1 provides weighted descriptive statistics for survey respondents. The weights, which we describe in the next section, are intended to ensure that the sample reflects the national population of school districts and CMOs.

To see the full set of the November 2021 survey responses disaggregated by several different characteristics, including district type (traditional public school district versus CMO), locale (urban, suburban, and rural), student racial and ethnic composition (majority white versus majority students of color), and district poverty level (high poverty versus low poverty), please visit our interactive Survey Results tool at www.americanschooldistrictpanel.org/survey-results (RAND Corporation, 2022).

Method for Creating the Sample and Survey Weights

We created weights to produce estimates that reflect the national population of public school districts and CMOs in the United States. The weighting process accounts for the probability of selection of districts sampled for the survey and for the probability that a district or CMO responded to the survey after receiving our invitation.

To create the weights, we multiplied the selection and participation probabilities and calibrated them to reproduce the population distribution of public school districts and CMOs in the United States. The nonresponse adjustment is important to eliminate known sources of bias and ensure that the weighted sample matches the characteristics of districts and CMOs nationally. This weighting approach is widely used for probability sample surveys (Deville and Särndal, 1992), including U.S. Department of Education surveys, such as the Teacher Follow-Up Survey (Goldring, Taie, and Riddles, 2014), and to adjust for nonresponse (Kott, 2006). The main analysis weights are the product of the following two interim weights:

1. **the sample selection weight:** This is the inverse probability of selection into this survey sample using a comprehensive list of K–12 public school districts. Large urban districts were oversampled because we included member districts of the Council of the Great City Schools and CMOs, which tend to be located in urban areas.
2. **the survey response weight:** This is the inverse of the modeled probability of a district or CMO completing this survey.

TABLE 1
Weighted Descriptive Statistics for Survey Respondents

Survey Respondent Characteristics	Percentage		
	Sample, Unweighted	Sample, Weighted	Population
District type			
Traditional public school district	93	97	97
CMO	7	3	3
District enrollment size			
Small (fewer than 3,000 students)	45	71	73
Medium (3,000 to 9,999 students)	29	20	19
Large (10,000 or more students)	26	9	7
Locale			
Urban	26	9	9
Suburban	34	25	25
Town	15	18	20
Rural	25	48	46
Region			
Northeast	20	21	21
Midwest	29	37	36
South	27	24	25
West	25	18	18
Percentage of students eligible for a free or reduced-price meal			
0–24 percent	14	18	25
25–49 percent	36	38	36
50–74 percent	36	33	28
75–100 percent	14	11	11
Percentage of white students			
0–24 percent	22	12	12
25–49 percent	21	14	11
50–74 percent	23	20	19
75–100 percent	34	54	59

NOTE: This survey sample consists of 359 survey respondents, while the population sample consists of U.S. public school districts (approximately 13,000 districts) in the original sampling frame for ASDP recruitment. We obtained district and CMO characteristics from the Common Core of Data files; these data are from the 2019–2020 school year (National Center for Education Statistics, 2021). Weighted proportions were calculated using survey weights, which were calibrated to match national averages. Percentages might not sum to 100 because of rounding.

We subsequently recalibrated the products of these weights as necessary. Recalibration ensures that the weights recover the population estimates after selection and nonresponse adjustments are applied. The sampling and weighting approach was designed to ensure a representative sample. We used the inverse of the selection probabilities (p_{si}) as the sample selection weight; the selection probability of the districts was set to be proportional to the square root of the enrollment size of the district. We estimated the response weights by modeling the likelihood (p_{ri}) that a selected district or CMO would respond to the survey, conditional on district- or CMO-level characteristics (including enrollment size, geographic region, locale, district type, and free and reduced-price meal eligibility). For convenience, we used a variable-selection method to choose the model that best fit the data. We estimated the main weight as the product of the sampling selection frame weight ($1/p_{si}$) and the response weight ($1/p_{ri}$), as follows:

$$main\ weight = \frac{1}{p_{si}} x \frac{1}{p_{ri}}$$

Because there is no guarantee that this main weight will sum to the total of the population characteristics, the weight was calibrated again based on district- or CMO-level characteristics to obtain the final weight. If some of these final weights were extreme, we used a trimming process (at the 95th percentile) to reduce the outliers, and the trimmed weights were reallocated for the population totals to remain the same after trimming.

Notes

[1] Financial incentives have consistently been shown to improve response rates, and we provide them in our teacher and principal surveys. We do not use them for the school district panel for a couple of reasons. First, some districts do not allow district staff to receive gifts, and survey incentives could be perceived as a gift. Second, it is not always clear who should receive the incentive because the ASDP survey is not always completed by the same person or potentially is completed by multiple people in the same district.

[2] The completion rate is calculated by dividing the number of completed surveys by the number of panelists invited to complete this survey; the denominator does not include screened-out panelists who were deemed ineligible to participate. Completion rates do not include the recruitment rate when panelists were invited to join the ASDP.

References

Deville, Jean-Claude, and Carl-Erik Särndal, "Calibration Estimators in Survey Sampling," *Journal of the American Statistical Association*, Vol. 87, No. 418, June 1992, pp. 376–382.

Goldring, Rebecca, Soheyla Taie, and Minsun Riddles, *Teacher Attrition and Mobility: Results from the 2012–13 Teacher Follow-Up Survey—First Look*, Washington, D.C.: National Center for Education Statistics, NCES 2014-077, September 2014.

Kott, Phillip S., "Using Calibration Weighting to Adjust for Nonresponse and Coverage Errors," *Survey Methodology*, Vol. 32, No. 2, December 2006, pp. 133–142.

National Center for Education Statistics, "2019–20 Common Core of Data (CCD) Universe Files," data file, NCES 2021-150, March 2021. As of November 19, 2021:
https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2021150

RAND Corporation, "American School District Panel: About the Panel," webpage, undated. As of November 19, 2021:
https://www.americanschooldistrictpanel.org/about.html

RAND Corporation, "American School District Panel: Survey Results," webpage, February 8, 2022. As of February 8, 2022:
https://www.americanschooldistrictpanel.org/survey-results.html

Robbins, Michael W., and David Matthew Grant, *RAND American Educator Panels Technical Description*, Santa Monica, Calif.: RAND Corporation, RR-3104-BMGF, 2020. As of November 19, 2021:
https://www.rand.org/pubs/research_reports/RR3104.html

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About This Report

The American Educator Panels (AEP) are nationally representative samples of teachers, school leaders, and school districts across the country. The American School District Panel (ASDP) is a partnership among the RAND Corporation, the Center on Reinventing Public Education, Chiefs for Change, the Council of the Great City Schools, and Kitamba. For more information, please visit the ASDP website at www.americanschooldistrictpanel.org.

This report provides information about the sample for a survey administered to superintendents and other district leaders in November 2021 via RAND's ASDP. The results are intended to inform policy and education practice related to educators' and students' needs during the coronavirus disease 2019 (COVID-19) pandemic.

RAND Education and Labor

This research was undertaken by RAND Education and Labor, a division of the RAND Corporation that conducts research on early childhood through postsecondary education programs, workforce development, and programs and policies affecting workers, entrepreneurship, and financial literacy and decisionmaking. This report is based on research funded by the Bill & Melinda Gates Foundation. The findings and conclusions presented are those of the authors and do not necessarily reflect positions or policies of the Bill & Melinda Gates Foundation. For more information and research on these and other related topics, please visit gatesfoundation.org.

If you are interested in using AEP data for your own analysis or in reading other AEP-related publications, please email aep@rand.org or visit www.rand.org/aep. More information about RAND can be found at www.rand.org. Questions about this report or about the ASDP should be directed to dgrant@rand.org, and questions about RAND Education and Labor should be directed to educationandlabor@rand.org.

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