

ARKANSAS 2004-05 SCHOOL DISTRICT RANKINGS

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INTRODUCTION

The failure of various Arkansas education proposals is underscored by two Arkansas Supreme Court decisions since 2002. The Court, in both decisions, found the state's K-12 public school system unconstitutional.¹ The Court's first ruling led to reforms including Public Act 35 of 2003 (Second Extraordinary Session), sponsored by state Sen. Steven Bryles, D-Blytheville. The Act requires transparency for every Arkansas public school district in the areas of academic and fiscal performance but does not require a letter grade for districts. PA 35 and other legislative measures are significant steps on the road to education reform. But the Court still ruled that Arkansas' K-12 system is unconstitutional.

This study's purpose is to create a letter grade for each district, and to discuss policy options for those on Alert (D grade) or in Distress (F grade). Eight years ago, in 1998, the Murphy Commission, a Policy Foundation project, recommended establishment of a K-12 school district academic ratings and triggers system using the following criteria:

Academic Success: Majority of Students scoring 10 or more percentage points above the 50th percentile on a national reading/comprehension/writing and mathematics test.

Academic Competence: Majority of Students scoring at or above the 50th percentile on a national reading/comprehension/writing and mathematics test.

Academic Weak: Majority of Students scoring between the 40th and 49th percentile on a national reading/comprehension/writing and mathematics test.

Academic Alert: Majority of Students scoring between the 30th and 39th percentile on a national reading/comprehension/writing and mathematics test. If improvement does not occur in one year, the district is placed on Academic Distress.

Academic Distress: Majority of Students scoring below the 30th percentile on a national reading/comprehension/writing and mathematics test. Director,

Mark Witkowski has a B.S. (1973) from the U.S. Air Force Academy, and an M.B.A. (1979) from the Univ. of Texas at San Antonio. He is an economist, and lives with his wife and family in Little Rock. The author wishes to thank three anonymous referees.

Department of Education, must intervene after two years of no improvement.²

Economists have long recognized education's importance to economic prosperity and a higher standard of living. Dallas Federal Reserve Vice President Dr. Michael Cox, a graduate of Little Rock Central High School, has noted the likelihood of Americans achieving upward income mobility and a rising standard of living is dependent on educational achievement ("*What D'Ya Know? Lifetime Learning in Pursuit of the American Dream*").³ Dr. Cox notes individuals in the 25-to-34 age group with a bachelor's degree earn 63 percent more than someone with a high school education and 100 percent more than a high school dropout. The same individual with a graduate degree would earn 90 percent more than a high school graduate and 140 percent more than the high school dropout. These differences in earnings increase as individuals age.

Lower unemployment rates are another benefit associated with higher levels of educational achievement. Dr. Cox notes, "Jobless rates are also lower for workers with more years of schooling, largely because they're more in demand." As our world becomes more and more driven by technological advances the importance of a quality and advanced education will become even more crucial. How well Arkansas' schools, in particular its public schools, perform the task of educating our children so they are equipped with the skills, knowledge and aptitude necessary for successfully completing four years or more of college studies, is of critical importance.

The Policy Foundation recommended in 1998 that the legislature adopt education reforms including transparency and accountability. Several of these recommendations have been enacted by the legislature and signed into law by Gov. Mike Huckabee. They create school districts that are more accountable, transparent, and that provide additional options for public school students and their parents.⁴ The Policy Foundation discussed some of these ideas in two *amicus* briefs it filed with the Arkansas Supreme Court in the *Lake View* case. These measures are important first steps toward addressing the constitutional deficiencies identified in Supreme Court rulings. Additional educational reforms are necessary if the goal is to create a constitutional public school system. This paper creates a letter grade for each Arkansas K-12 school district. It concludes with a brief review of other education reforms proposed in 1998.

EVALUATION/GRADING METHODOLOGY

This study relies on Spring 2005 testing data derived from students taking the Iowa Tests of Basic Skills (ITBS) to evaluate performance in the 254 Arkansas school districts in existence in 2004-05. The tests were administered to students in kindergarten through ninth grade. The school and district test scores are reported in three different formats: (1), the Standard Scores (SSs),⁵ the Normal Curve Equivalent scores (NCE) and percentile schools. Standard Scores (SSs) are utilized for purposes of this study.

Percentile scores do not provide statistically meaningful measures such as the standard deviation, or mean. This study does not use percentile scores. NCE scores, derived from SS scores, can be used in a statistical manner such as averaging. However, since SS scores are the basic building block from which NCE and percentile scores are derived it is logical to use them for purposes of this study.

One consideration, in determining which school districts have been successful, is whether to use a district score which included all students taking the ITBS, one based on a subset of grade levels or a single grade level. All grade levels are important in the development of a child's education, whether it be first grade or twelfth grade. However, in determining which school districts are or are not preparing their students for economic prosperity once they leave their district, the most appropriate grade level or levels would be those closest to graduation, preferably one of the high school years. Ninth grade was the highest grade level at which the ITBS was administered in 2004-2005 to Arkansas' public school students so ninth grade SS scores are used to evaluate the performance of Arkansas districts. In the same manner in which students are graded with As, Bs, Cs, Ds, and Fs this study also grades 254 school districts. Twenty districts received grades of A or A-; 102 districts earned grades of B+, B, or B-; 97 districts received grades of C+, C, and C-; and 26 districts earned grades of D+, D, D-, and nine districts earned Fs.⁶

Page 51 of Iowa Forms A and B, Levels 15 – 17/18 notes a ninth grade norm SS score of 260. Arkansas public schools took the ITBS exams⁷ in 2004-2005. This is slightly earlier than the time period associated with the national norm/mean score of 260. The appropriate norm/mean score to evaluate Arkansas districts is a ninth grade norm SS score of 259. The mean ninth grade verbal SS score average for the 254 districts in existence in 2004-2005 was 259.4 as calculated.⁸ The composite ninth grade math SS score for districts was 262.9. For the composite ninth grade verbal exam 148 districts scored higher than the national norm/mean and 106 scored below the norm/mean. For the composite ninth grade math exam, 171 school districts scored above the national norm/mean, one at the national norm/mean and 82 scored below the national norm/mean.

A good starting point for analysis is whether Arkansas school districts are adequately preparing students at a level above or below a national standard. The degree to which the district is above the national or below the national average is of even greater importance. Of those public school districts measured below the national norm/mean some may be not far below that norm/mean while others are far below. Composite district ninth grade verbal and math SS scores were scored and graded according to basic normal curve statistical properties in order for policymakers to properly assess district performance, in particular for school districts performing below the norm/mean.

The normal bell shaped curve (normal distribution) assumes that the observations in a population or sample are distributed in such a manner that most of the observations are close to the mean and the further the values move from the mean the fewer the observations (scores) there will be. The normal distribution assumes that 50 percent of the observations are above the norm/mean score, which in this case is 259 points for ninth grade students, and 50 percent are below the norm/mean score. In addition to the norm/mean, another common statistic relied upon for evaluating the degree to which an observation varies from the mean is the standard deviation. A national standard deviation value for school districts is unavailable for the ITBS.⁹ Therefore, for purposes of this study school district standard deviations for composite ninth grade verbal and math scores were calculated using Arkansas public school data. The calculated ninth grade verbal standard deviation score is approximately 11.4 and the math standard deviation score is approximately 11.6. Arkansas ninth grade verbal and math standard deviations scores were utilized to determine which of the ninth grade composite verbal and math scores were "close to," "somewhat above" or below the national norm/mean and which scores were close to, "significantly above" or below the national norm/mean.

The normal distribution bell shaped curve, in terms of observation distribution, assumes 50 percent of observations are above some mean value and 50 percent are below that same mean value. The observations describe composite verbal and math SS scores. Sixty-eight percent of observations fall within plus and minus one standard deviation from the mean, 90 percent of observations fall between plus and minus 1.645 standard deviations from the mean, and 95 percent of observations fall within plus and minus 1.96 standard deviations from the mean. A common statistical practice is to use confidence levels of 90 percent or 95 percent for testing whether some measure or value is significantly varies from the norm/mean. The scale for assigning grades was largely based on these properties of the normal distribution bell. Some of the analysis actually increases district grades.¹⁰ In brief, the grades assigned to districts are somewhat more generous than if strict normal curve statistical properties had been employed.

Traditionally, test scores significantly above the mean receive 'A's and scores significantly below the mean receive 'F' grades. Examples occur when scores 90 percent or higher are assigned As, scores between 80 to 90 percent receive Bs,

and so forth. Ideally when using this method the majority of the scores will be near or on the mean. In an attempt to replicate this grading system, which is consistent with the normal bell shaped curve, most of the public school district grades would be Cs if their the state norm/mean score was equal to the national norm/mean. Since Arkansas composite ninth grade verbal and math scores are slightly higher than the national norm/mean it should be assumed that more public school districts would receive grades above C, the norm/mean grade, than below C.

Arkansas public school districts receiving A and A- grades in this study are performing at a level significantly higher than average. Districts receiving B+, B, and B- grades are performing somewhat above average. C grades indicate that districts are performing at an average level. Districts receiving grades of D and lower have significant room for improvement and are not adequately preparing their students. The standard deviation method and factors used for determining the break scores separating A, B, C, D, and F grades for each school district are explained in detail in Appendix One.

The use of Arkansas 2004-05 ninth grade ITBS SS composite verbal and math scores show that 20 districts received grades of either A or A-. Grades of B+, B, or B- were recorded in 102 districts. Grades of C+, C, and C- were recorded in 97 districts. Grades were assigned to the remaining 35 districts on the following basis: 6 earned a D+, 11 received a D grade, nine received a near failing D-grade, and nine received a failing F grade. Most students in these 35 districts are not being adequately prepared for the challenges awaiting them in higher education or the job market.

Two measures supporting the conclusions implicated by the grading of these districts are their student remediation percentiles in math and English and ACT composite scores. Higher than normal remediation percentiles and lower than norm ACT scores would be further evidence that these districts are inadequately preparing students. For the twenty-two districts receiving D and D- grades (pending failures), almost three-fourths of their graduating students were required in 2004 to take either a remedial course in math or English or both.

THE POLICY FOUNDATION'S 1998 RECOMMENDATIONS

The Policy Foundation, in 1998, proposed education reforms for the Arkansas K-12 public school system. The recommendations included *efficiency* measures such as administrative restructuring, *transparency* initiatives such as the adoption of a statewide uniform accounting system and the use of norm-referenced tests as academic achievement indicators. The recommendations also included *accountability* initiatives such as ratings and triggers for acclaim or sanctions, and *choice* measures for students and parents. These recommendations are discussed in the study, "Streamlining And Cost-Saving Opportunities In Arkansas' K-12 Public Education System," issued in September 1998.