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Temple Sponsored RAND Study: Closing School Achievement Gaps Will Add \$Billions to PA's Economy

Pennsylvania could realize tens of billions of dollars in additional economic growth and move our students to the top of US and world rankings by closing gaps in test scores based on differences in family economic status, students' race and ethnicity, and students' parental education, according to a groundbreaking RAND Corporation study commissioned by Temple University's Center on Regional Politics (CORP) and released today (July 13, 2015).

The study, entitled *The Economic Impact of Achievement Gaps in Pennsylvania's Public Schools*, estimates that the state's gross domestic product would be as much as \$44 billion higher if student achievement gaps had been eliminated 10 years ago. "The economic costs of failing to close gaps in the past are indicative of the kinds of gains that could be realized by working to eliminate the gaps going forward," said Joseph P. McLaughlin, Jr., director of the Temple center.

The RAND report also projects that going forward, each cohort of Pennsylvania students could gain up to \$5.1 billion in the present value of their lifetime income earnings and overall benefit to society if gaps in graduation rates could be closed.

Temple commissioned the study with the support of business leaders to encourage the General Assembly, policymakers, school officials, and teachers to aim for ambitious, long run student performance gains while they are addressing the immediate shortfalls and inequities in school funding, according to McLaughlin. It is believed to be the first of its kind at the state level.

"The recent recommendations of the General Assembly's bipartisan Basic Education Funding Commission that the state invest more resources in educating economically disadvantaged students are supported by the study," McLaughlin said. "That's where the greatest economic payoff is." He noted that RAND previewed its research in a symposium for legislators, business and labor leaders, and education policymakers and advocates in May and for the commission's staff in April.

McLaughlin also noted that the study shows that although school districts with lower proportions of African American and Latino students and economically disadvantaged students generally outperform districts with larger proportions, demographics are not always determinative. Some districts with similar demographic profiles outperform others, and he suggested that these higher performing districts might offer useful lessons to the others.

Authored by Lynn Karoly, RAND senior economist, the study documents the magnitude of gaps in student performance based on race-ethnicity, family economic status, and parent education and then estimates the economic consequences of the gaps in terms of lost economic growth or, alternatively, potential economic gains if the gaps could be closed. Gains in educational achievement (based on test scores) and attainment (graduation rates) would boost the Pennsylvania economy through higher wages, faster rates of state GDP growth, and in the case of graduation rates, reduced costs to society (e.g., crime and welfare programs), according to the study.

For measures of student achievement, the study relies on standardized tests of reading and math administered in eighth grade as part of the Pennsylvania System of School Achievement (PSSA); data on reading and math assessments in eighth grade from the 2013 National Assessment of Educational Progress (NAEP) to compare Pennsylvania students with those in other states, and results from the 2012 Programme for International Students Assessment (PISA) of 15-year-olds in reading and math to determine how Pennsylvania students are likely to compare with students in other developed countries. Student attainment is measured by the four-year adjusted cohort graduation rate (ACGR) for Pennsylvania and all other states.

Measuring gaps based on differences in the percentages of groups judged proficient in test score performance, the study finds:

- Pennsylvania ranks relatively high among the states in average student performance (while the US as a whole ranks relatively low among developed countries), but Pennsylvania's gaps based on test scores and graduation rates are among the largest of the states;

- African American and Latino students, about one-fourth of all eighth grade public school students, are behind their white counterparts in proficiency on average by as much as 24 to 38 percentage points depending on the assessment and subject, or the equivalent of about three years of learning, according to NAEP achievement test scores;

- Students from economically disadvantaged families, about 40 percent of all eighth grade public school students, are behind in proficiency by 20 to 26 percentage points on average, or two to three years in learning, compared to students from families who are not economically disadvantaged, according to NAEP scores;

- Students from families whose parents do not have a high school degree are as much as 26 percentage points in proficiency behind students with one or both parents having a college degree; and

- Gaps in four-year-graduation rates reach 17 to 19 percentage points by race-ethnicity and 14 percentage points by family economic status.

The study calculates how much higher average statewide PSSA or NAEP test scores would be if subgroup differences by race-ethnicity or socioeconomic status were eliminated by bringing low performing groups up to the level of proficiency or test score average of the higher performing group. These

calculations show the biggest gains from closing economic status gaps compared to closing race-ethnic groups, with parental education gaps in between. For example,

--Closing the gap in graduation rates between poor and wealthier students would result in a 5 percentage-point gain in statewide graduation rates, from 86 to 91 percent;

--Closing the gap between white students and their African-American and Latino peers would increase average statewide reading scores on the National Assessment of Educational Progress (NAEP) exam by 6 scale points, from 272 to 278, or close to the level of Massachusetts, the top performing state. Massachusetts is also close to the top of world rankings on international tests.

--RAND projects that Pennsylvania would likely rank in the top 10 of developed countries in both reading and math PISA test scores if racial-ethnic and economic status gaps were closed.

The RAND study estimates that if race-ethnic academic achievement gaps had been closed in 2003, the base year, Pennsylvania GDP would have been higher one year later by \$1 billion to \$2 billion, or 0.2 to 0.4 percent of actual 2004 GDP. Ten years after the base year, with the compounded effect on economic growth, GDP in 2013 would have been \$12 billion to \$27 billion, or 2 to 4 percent, higher than actual GDP in that year. If gaps due to family economic status had been closed in 2003, the study projects that GDP 10 years later would have been \$22 to \$44 billion, or 3 to 7 percent, higher than actual 2013 GDP.

Eliminating race-ethnic achievement gaps going forward would result in the present value of annual lifetime earnings gains of \$1.4 to \$3.4 billion for each cohort of students. RAND estimates that closing gaps in graduation rates would represent a gain to each cohort over their lifetime of between \$2.8 to \$5.1 billion in present value benefits to society, including income growth and reduced social costs such as for crime and welfare.

Although recommending steps to close achievement gaps was not within the scope of the study, Karoly noted that current research supports investments in early childhood programs, after school and summer programs that extend the learning day and stem summer learning loss, and youth development programs designed to prevent school dropout.

RAND's estimates of the economic impacts of Pennsylvania's school performance are grounded in methodologies developed by leading economists and used in previous studies of the U.S. achievement gaps, including a 2009 report by McKinsey & Company: *The Economic Impact of Achievement Gaps in America's Public Schools*. The RAND study was supported by Temple University, the William Penn Foundation, and the Greater Philadelphia Chamber of Commerce Regional Foundation, but the opinions expressed in the report are those of the authors and do not necessarily reflect those of the sponsors.

The achievement gap study is among a series of papers and policy briefs published by Temple under the banner of The University Consortium to Improve Public School Finance and Promote Economic Growth. In addition to CORP, consortium members include Penn State's College of Education, the University of Pittsburgh's Center for Metropolitan Studies, and political scientists, law professors, and policy researchers at 18 other public and private universities in the Commonwealth.