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Rewarding Excellence with Annual Redirected Dollars is Heedless

The Colorado State Senate proposes Bill SB17-200, the "Reward Act". Under the Bill, the

Department of Education (DOE) would identify "peer school districts" based on geographic and

demographic characteristics. The DOE would then rank student performance amongst peer school

districts and award the top 20 performing school districts excellence funding. The Bill includes

public school districts and the state charter school institute (institute) in its definition of "school

district".

The Bill states that 1% of the State's current public school funding would be used for

excellence funding. Excellence funding would be awarded to the 10 highest-performing rural

school districts and 10 highest-performing non-rural school districts. The DOE would distribute

35% of excellence funding equally among awarded school districts and 65% of excellence funding

on a per-pupil basis.

High school graduation rates in Colorado are ~4 percent points below the national average,

at 78.9% in 2016.[1] Additionally, the education achievement gap in Colorado is significantly larger

than most other States. The education achievement gap specifically addressed by the Bill is the

White-Latino achievement gap; the Bill fails to mention that Colorado also has the 12th highest

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[1]

poverty achievement gap[2]. The Bill is suggesting excellence funding as a "creative" way to close the achievement gap and boost graduation rates.

A good education policy would maximize the economic benefits on an individual and collective level. For individuals, two of the primary economic benefits commonly associated with investment in education are higher individual earnings and increased productivity. Societally, healthier citizens, improved human capital, and lower levels of unemployment are all positive externalities of education. For instance, if an education policy reduces the amount of unhealthy citizens, then the associated reduction in health care costs is shared across society. The Reward Act lacks consideration of the socially optimal allocation of public school funding in terms of economic benefits.

At first glance the Reward Act's proposed "tournament" setting appears to encourage competition among school districts. However, tournament theory establishes an inefficiency result given a discrepancy in ability between competitors[4]. The environment in which the Reward Act would operate is marked exactly by such a discrepancy. Because students, teachers, and faculty at high-performing schools need to exert relatively less additional effort than those in low-performing schools to receive the determined "excellence funding", the Bill's incentives are far more attractive for high-performing school districts. The reward, then, inefficiently incentivizes competition through its disproportionate influence on high-performing school districts.

[2]http://www.ucdenver.edu/academics/colleges/SPA/researchandoutreach/Buechner%20Institute%20for%20Governance/Centers/CEPA/Publications/Documents/CEPA%20achievementgap.pdf

[4] http://0-www.dictionaryofeconomics.com.libraries.colorado.edu/article?id=pde2009_T000250&edition=current&q=tournament%20theory&topicid=&result_number=2

The Reward Act redirects public school funding to the highest preforming school districts. There is evidence that the highest preforming school districts are also the wealthiest school districts, and that the lowest preforming school districts are also the poorest school districts. For instance, Battistich et al. find that poverty is negatively related to student performance on standardized tests[5]. It then appears that the proposed Reward Act is just redistribution in favor of the rich.

Another issue with awarding excellence funding to high performing schools is that there are diminishing returns to investment in education. In this context, diminishing returns means that an increase in funding would have a greater impact on low performing schools than high performing schools.

There is substantial evidence of diminishing returns to investment in education in literature. For example, a 2014 report from the National Bureau of Economic Research found that a 20% increase per-pupil spending for poor children lead to "about 0.9 more completed years of education, 25 percent higher earnings, and a 20 percentage-point reduction in the annual incidence of adult poverty"[6]. No effects were found for children from wealthy families. The Reward Act is likely to increase per-pupil spending for children from wealthy families, and therefore is not socially optimal.

If properly structured, monetary incentives have the potential to raise achievement in schools. Monetary incentives can be either input (effort) incentives or output (outcome) incentives. Economic theory suggests that output incentives may be more effective and efficient. The

[5] http://journals.sagepub.com/doi/pdf/10.3102/00028312032003627

[6] http://socrates.berkeley.edu/~ruckerj/Jackson_Johnson_Persico_SFR_LRImpacts.pdf

reasoning is that input incentives are "costly to monitor, rewarding inputs may lead to misallocation, agents are heterogeneous, and production functions may not be observed"[7]. However, empirical evidence suggests that input incentives are ex post more effective than input incentives.

In a 2011 empirical study,[8] Allan and Fryer investigate the impact monetary incentives, for students, teachers, and schools, have on student achievement. In all cases they find input incentives to be more effective than output incentives. One explanation for this is that even if agents are properly motivated, they may not be properly equipped to increase performance. Another explanation is that output incentives lack immediate reward, and agents lack the discipline needed to achieve rewards later. The excellence funding proposed in the Bill is an output incentive. The Bill does not specify how school districts ought to use excellence funding. However, it appears that output incentives are ineffective regardless of how they are distributed.

The peer ranking structure of the Reward Act is also ineffective. Research suggests incentive programs are ineffective when school performance is based on the distribution of the performance of other schools. This is because ranking school performance based on the relative success of their peers diminishes the control schools feel they have on their own performance rankings[9].

A better designed output incentive program would award funding to schools with high levels of internal improvement. For instance, if a school exhibits an increase in standardized testing

[7] http://economics.ucr.edu/repec/ucr/wpaper/201701.pdf

[8] http://scholar.harvard.edu/files/fryer/files/092011_incentives_fryer_allen_paper2.pdf

[9] http://scholar.harvard.edu/files/fryer/files/092011_incentives_fryer_allen_paper2.pdf

scores, then they could receive funding. This type of program would eliminate the negative effect that peer ranking puts on output incentives.

The proposed Reward Act is neither socially optimal nor efficient. School districts receiving excellence funding are likely to exhibit small returns to the increased funding. Additionally, the incentive structure is unlikely to be an effective way to motivate school districts to enhance performance. As such, the proposed Bill should not be passed.