Can’t be askedEffort, not ability, may explain the gap between American and Chinese pupils

When greenbacks are on offer, American schoolchildren seem to try harder

WHETHER a teenager grasps calculus is not obviously an issue of geopolitical importance. Yet since the first Programme for International Student Assessment (PISA) in 2000, the poor performance of American pupils in the global test has worried policymakers. Not least since Chinese pupils, or at least residents of Shanghai, are at or near the top of the class.

Some of Shanghai’s prowess is overstated. Children of poorer migrants to the city are not properly sampled, for example. America does a bit better in other international tests. Yet, on average, American teenagers trail their peers (see chart), especially maths whizzes from East Asia. Of the 69 other parts of the world whose 15-year-olds took the PISA maths test in 2015, 36 scored higher than America, 28 lower and five did about the same. “We can quibble,” said Arne Duncan, Barack Obama’s first education secretary, after a batch of scores came out in 2010, “or we can face the brutal truth that we’re being out-educated.”

These concerns have a long history. In 1983, “A Nation at Risk”, a report commissioned by Ronald Reagan, warned of “a rising tide of mediocrity that threatens our very future as a Nation and a people.” In letting others surpass its educational achievements, it continued, America had been “committing an act of unthinking, unilateral educational disarmament”. Though the cold-war hysteria has subsided, the worry that the youngest generation of Americans is losing an educational arms race endures. Broadly, American pupils have made little progress in average PISA scores since the first of the triennial tests was taken in 2000.

Many reasons have been given for the results, including both policies and parents. Books have been written contrasting diligent Asian kids with feckless Americans. But what if the alarm is partly just a result of American pupils not trying as hard on a test that does not
matter to them? That is the suggestion of a forthcoming paper by Sally Sadoff of the University of California San Diego and five other economists from American and Chinese universities.

Last year the researchers conducted an experiment in secondary schools in Shanghai and America. In each place pupils were split into two groups. The first answered 25 maths questions that had appeared in PISA. The second took the same test, but before the pupils did so, they were presented with an envelope with 25 dollar bills or the equivalent in yuan. The teens were told that for every wrong answer they would be docked a dollar.

Ms Sadoff and her colleagues found that the ploy boosted scores among American students relative to their compatriots without a cash incentive, but not among the Chinese ones. According to some rough calculations, if extrapolated to the main PISA test, the improvement in performance would have moved America from 36th to 19th in the ranking, in which Shanghai came top. The biggest gains were registered among normally average-scoring pupils and among boys.

The study looks at results in just five schools and has yet to be peer-reviewed. Americans still lag behind their east Asian peers, even after greenbacks are introduced. Yet one implication from the new study is that results on comparative tests such as PISA do not simply reflect differences in ability. If scores can be boosted by the lure of a few dollars, then the potential of American pupils is greater than policymakers often assume.