When Lightning Strikes Twice: Profoundly Gifted, Profoundly Accomplished

Summary of Findings

A study authored by the Duke University Talent Identification Program’s Matthew Makel and Martha Putallaz, the Study of Mathematically Precocious Youth’s (SMPY) David Lubinski and Camilla Benbow, and the Educational Testing Service’s Harrison Kell investigated whether adolescents who earn extremely high test scores go on to earn comparably high accolades later in life. Replicate findings from a 2013 report by the SMPY, “When Lightning Strikes Twice” found the adulthood accomplishments of 259 Talent Identification Program (TIP) participants—all of whom scored in the top .01 percent (1 in 10,000) on above-level tests as adolescents. The study assessed both the magnitude of adulthood accomplishment and whether their ability pattern, as revealed in their adolescent test scores, was associated with what fields their later accomplishments would be in.

Method

Using the same identification and accomplishment criteria as the original SMPY study, Makel and colleagues identified 259 TIP participants who had scored at least 700 on the SAT-Math, 630 on the SAT-Verbal, or both before 1995.

Web-based search engines were then used to collect information about the educational, occupational, and creative accomplishments of the individuals. These accomplishments were defined by broad area (arts and humanities, law, or STEM) and by specific field (e.g., veterinary medicine, finance, English language and literature). They were also assessed for magnitude (e.g., number of patents, amount of grant support, number of executive positions).

Overview of Results

The findings mirrored earlier results from SMPY, showing that students with exceptional test scores in adolescence achieved extraordinary accomplishments in adulthood. For example, although less than 2 percent of the US adult population hold a doctorate, 37 percent of the individuals included in the study had earned a doctorate. In addition, 7.5 percent of the study participants had earned tenure at a university (4.3 percent at research-intensive universities), 9 percent held a patent, and many were high-level leaders in major organizations—all by age 40.

Key Findings

Accomplishments

Not only did the study sample achieve extraordinary levels of accomplishments at much higher rates than the general US population, but these individuals—who were all in the top .01 percent of testers in their adolescence—accomplished these things at significantly higher rates even when compared to the top 1 percent of adolescent test-takers.
Pattern

The study shows not only that high scores (a measure of ability level) matter, but that the specific relative strength of the scores (a measure of ability pattern) matter, too. That is, even though almost all participants’ test scores were higher in both math and verbal than most other PhD recipients, their adulthood accomplishments tended to come in the area they did highest in during adolescence. Those with significant achievements in the arts, humanities, and writing scored much higher on the SAT-Verbal as adolescents, and those with accomplishments in STEM fields scored much higher on the SAT-Math.

Replication

Because these findings closely mirror findings from the earlier SMPY study, this study provides further evidence that the conclusions of the two studies are credible and reproducible.

Conclusion

The findings here indicate that above-level testing at an early age is a helpful tool for identifying individuals with profoundly high ability who have the potential to make great contributions to society in adulthood. Along with other factors (including opportunity, interest, etc.), the results of above-level tests can be used to identify individuals with great academic potential.

For More Information

You can read the full study in Psychological Science. You can also read the previous SMPY study, “Who Rises to the Top? Early Indicators,” also in Psychological Science.