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From the issue dated June 12, 2009

**Two Professors Retake the SAT: Is It a Good Test?**

NO

By CHRISTOPHER HARPER

(See "Yes," by Robert J. Vanderbei, below)

Even though I have worked as a college professor for 15 years, I decided last winter to take the SAT and ACT examinations that my students needed to enter the institution where I teach, Temple University. Why? After nearly a year of preparing my daughter for the examinations, I started to wonder if the existing tests actually provided a good guide to assess knowledge.

A commission created by the National Association for College Admission Counseling recommended last September that colleges and universities move away from their reliance on the scores. The commission released its critique after evaluating the effectiveness or lack thereof of standardized tests for more than a year. After taking both tests, I couldn't agree more with the commission's recommendations. I found that the tests emphasized speed and stamina over knowledge, and they failed to provide an adequate measure of what a student might actually understand.

The SAT comprised 10 sections that haphazardly whipsawed the mind from writing to reading to math. I started by writing an essay, then spent the remainder of the test zigzagging back and forth among mathematics, reading, and grammar. Just as I'd fallen into a mathematical groove, it was time to move on to the reading section. A second math section, or perhaps a grammar test, might follow a reading section. Moreover, I had about one minute to answer each question — almost no time for any form of critical analysis or contemplation. What went through my mind? *Keep up the pace.*

The SAT essay question asked, "Is compromise always the best way to resolve a conflict?" The answer: Of course not! Ask African-Americans about the compromise of the U.S. Constitution that left them as slaves. Ask women about the right to vote. Ask the relatives of those who died in World War II at the hands of the Germans after Britain and the Soviet Union initially tried compromise with Hitler. The list goes on and on.

Simply put, the question is inane. Further, it elicits an answer that often fails to include analysis of research and inclusion of data — two key components of critical thinking. This type of question fails into the category of asking a student how he or she feels emotionally about an issue rather than what he or she thinks intellectually.

Moving on to the grammar section of the SAT: I teach writing and journalism, yet I found some questions were written so awkwardly — although they were grammatically correct — that I wanted to take a red pen to them and demand that they be rewritten.

The math section was no less frustrating. Again, I had about one minute to answer each question. Speed was more important than analysis.

While a few of the math questions were relatively straightforward, most of them were so convoluted that they seemed intended to trick me rather than to test my knowledge of arithmetic, algebra, or geometry. As some observers have noted, the section doesn't test a knowledge or understanding of math so much as how well one has learned "SAT math." Dana Mosely, a math teacher who has created a series of DVD's to tutor students for the SAT, has said that in an actual classroom he would never use many of his suggested methods, such as simple guessing by elimination, and plugging in the answers from the choices rather than performing the math to come up with the correct answer. The SAT has even created its own mathematical symbols that can only be anticipated if the student has studied SAT math.

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**BRAIN STORM**

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The ACT, which I took a month later, was different but no more effective as a gauge of students' knowledge. It had four parts: writing, reading, mathematics, and science. The structure eliminated the problem I had with the SAT — that is, having to bounce back and forth from one subject to another. But the required stamina for nearly five hours of testing was difficult. As on the SAT, I had about one minute per answer in math. By the time I reached the final section, science, my mind was nearly numb. Not surprisingly, I scored the lowest on it.

Again, the writing question bordered on the ludicrous. It asked whether sporting events should eliminate scoring in order to de-emphasize winning over perseverance and teamwork. The only way one could answer such a question adequately is to determine statistically how effective such a change would be. Then a critical analysis of the effects could be determined, rather than a series of anecdotal stories, which is all the ACT question could elicit.

A problem I find with many students today is that how they feel about an issue has become more important than what they think about it and how they can support that position with research, data, and analysis. But if even the ACT and SAT emphasize emotion over thought, I can see why my students and their high-school teachers have focused on that approach.

The reading section, as on the SAT, included an odd hodgepodge of subjects — a science-fiction space ride, a study of computers, the increase in paper production at the International Monetary Fund. I object to the inane material included in both tests. Many great authors have written many fine works in English over the past few centuries. Why not use passages from them, rather than trendy articles about nothing of particular significance?

My SAT scores improved 195 points overall from when I took them last in 1968. Although my math score fell slightly, I earned 750 out of 800 on the recently added writing section. I missed four questions out of 49, an embarrassment because I teach writing. (I didn't take the ACT in high school, so I have no means of comparison.) Nevertheless, my scores would have qualified me for entrance into most colleges. My daughter received inquiries from more than 200 colleges, and her scores allowed her to enroll in her preferred institution. Yet both of us thought that the tests failed to demonstrate what we really knew.

When I took the SAT in high school, I scored significantly higher in math than in writing. In college I took business administration, calculus, accounting, and statistics my first year. I performed well but found myself far more engaged when I transferred into journalism and English literature — my weakest subjects, according to the SAT. I graduated Phi Beta Kappa with a double major in English literature and journalism and went on to graduate school.

Had I followed the path suggested by my SAT scores, I probably would have become a disgruntled numbers cruncher instead of a satisfied journalist who worked for more than 20 years at the Associated Press, *Newsweek*, and ABC News before joining academe in 1994. I wonder how many students fall into the trap of basing college and career decisions on their standardized-test scores. I am glad I did not.

If the testing companies fail to provide improved tools to assess students' knowledge, then each college should create its own measurement tool, based on what educators think would identify the type of students they would like to see at their institutions. It's too easy to depend on standardized tests because they offer a quantifiable score. Now, however, an estimated 500 colleges, including some prestigious institutions like Smith College and Wake Forest University, have made the ACT and SAT optional. That's a good start toward re-examining whether these tests actually can predict a student's success in college. The academy must continue to question their value.

I have participated in decisions to grant admission and financial aid to undergraduate and graduate students, and those students' standardized-test scores played a significant role in my evaluations. No longer: I will change my approach in the future based on my experience with the ACT and SAT. I hope other educators do the same.

*Christopher Harper is an associate professor and co-director of the Multimedia Urban Reporting Lab in the department of journalism at Temple University.*

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#### YES

By ROBERT J. VANDERBEI

After years of teaching, as well as writing and editing scores of research papers and books, I recently began to wonder if my SAT scores would be good enough to get into Princeton University, where I am now a faculty member. Based on my publication record and citations thereof, and my modest successes in the classroom, I think it is fair to say that the Princeton administration does not regret hiring me and promoting me to full professor. But if I were to apply to attend Princeton today, would I get in?

Without actually submitting an anonymous application, it was a hard question to answer. But I could try to obtain a dispassionate assessment of what my admission profile would look like by retaking the SAT — more than three decades after I first took it in high school. (I didn't apply for admission to Princeton back then, but selected the Rensselaer Polytechnic Institute over the Massachusetts Institute of Technology because RPI offered a better scholarship.)

I initially planned to take the test with a horde of students at the local high school. But that seemed difficult, both logistically and socially. Fortunately, the College Board Web site lets one download practice exams that are presumably equivalent to an actual test, along with instructions on how to administer and grade them.

So, some months ago, I blocked out a morning, cleared off my normally cluttered desk, locked my office door, and began the exam. My office assistant was stationed in the adjoining room and made sure I didn't run over time on any section.

How did I do? The math part of the exam was pretty easy. My Ph.D. is in mathematics, so that's not surprising. Still, there was the chance that I might have been tripped up by a trick question, as I was back in high school. I had already completed a year of trigonometry and calculus before taking the SAT then and was confident I had answered all of the quantitative questions correctly. I was surprised when I got a 780 on the math section.

This time, I did better. I got all those questions correct and scored 800.

The critical-reading section was harder. I was a slow reader in high school, and I'm a slow reader now. It was tough to pace myself properly. The hardest set of questions involved a pair of page-long essays on the Rev. Martin Luther King Jr. and whether or not a holiday in his honor is a good thing. One question asked something like, What would Author B say about the fourth paragraph in Author A's essay? Sheesh. Questions like that make my head spin. Anyway, I got a 680 on that part, significantly better than my corresponding score from 36 years ago, but probably not that good in the eyes of Princeton admissions officials.

I did better on the writing part, although it is hard to assess because the final score represents a combination of objective multiple-choice questions and a subjective essay. To help grade the essay, the Web site lets you download sample graded essays with which you can compare your own. The highest possible score, from each reader, on the essay is a six.

My essay question asked for one's opinion on privacy in America. Has American society become too open? I have an opinion on that question (openness is good), but I didn't, in the allotted 25 minutes, come up with any compelling anecdote to make my essay especially interesting. What I wrote was grammatically correct, logical, and used appropriate vocabulary. Compared with the sample essays, it wasn't as interesting as the ones that got a score of six, but it seemed logically tighter than those that received a score of five. The sample essays that received a score of four or lower seemed clearly inferior — both to me and to my office assistant. So, if I give myself a five on the essay, then my writing score is 710. If I give myself a six, it jumps up to 740.

What did I learn from the experiment?

For one, the scores seemed to be a good reflection of how I stand in comparison with when I was in high school. (In other words, I think I'm much closer to Princeton students verbally than I was then.) Also, it seems correct to me that I scored lower on the reading part than on the writing part and performed best on the quantitative part. But mainly what I learned is that the SAT is a challenging, well-thought-out exam.

Of course, the test is limited in scope, as it must be given that it requires only a few hours of one's time. It is simply impossible to measure every dimension of a secondary-school education in so short a time. For example, the math portion tests only the most elementary topics of algebra and geometry. With only 54 math questions, it simply can't assess all levels of mastery. Given the limited scope, however, the SAT raises a well-conceived set of questions.

For instance, some questions are really simple, whereas others are more subtle. A subtle question is one for which you can use multiple ways to get to the correct answer — some that are quick and easy, others that are tedious and time consuming. I take pride in my own exams when I come up with such questions. The SAT's math section has some questions like that.

One question, for example, gives several (x,y) pairs and asks which of five functions produces those pairs. You could start plugging x's into the functions to see if the correct y's are produced, but that is the long and tedious approach because two of the five functions are quadratic and one is cubic. The smart way is to graph the five data points, which quickly reveals that the function is linear with a certain obvious slope and intercept. Problem solved.

Many people ask whether the test really tests aptitude or achievement. Clearly, it tests some combination. A person needs to have attained a certain, rather minimal, level of achievement in math to score well on the analytical part, and he or she needs to have a fairly broad vocabulary and an understanding of English grammar to do well on the other two parts. But the exam also tests cleverness. For example, some math questions were nonstandard and required creative thought to determine the answer quickly.

So would I get into Princeton today? My score is probably borderline according to the university's admissions standards. But it is worth noting that admission to Princeton today is not the same as it was 36 years ago. My performance back then was sufficiently skewed to the geek side that I knew I had no chance to get into Princeton, so I didn't even apply. Today, however, my perception is that the admissions office has more geek-friendly policies — certainly we are attracting many brilliant students who in previous decades might have been destined for MIT.

The SAT itself does a fine job at what it sets out to do. The problem is that educators have gotten smart — in addition to educating, they teach to the test. That skews things; some school systems rightly shun that idea of teaching whereas others embrace it. Furthermore, the College Board itself embraces the notion of teaching to the test, evidenced by the fact that it encourages students to take practice tests and even the full SAT multiple times. If secondary-school educators could be kept in the dark about the content of the exam, and if all students were to take the test cold, I'm sure the SAT would provide valuable information to college admissions offices. But that is not the world we live in.

Finally, I have come up with an essay question that SAT test writers should consider for future SAT's: If 30 years from now you have the opportunity to retake the SAT exam, would you do it, and what would you hope to learn?

*Robert J. Vanderbei is a professor in operations research and financial engineering at Princeton University.*

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