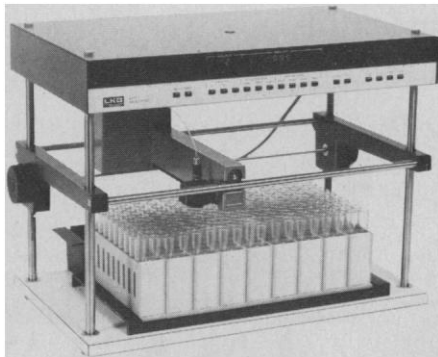


High, wise and handsome



The MultiRac fraction collector

LKB's new MultiRac™ fraction collector is a real space saver. On the opposite page you can see that reservoir, column, pump, monitor and recorder all mount on it easily. And you can keep adding decks to take as much more equipment as you want.

The new LKB fraction collector is bright too. It will collect from microliters to liters, adjust fraction size automatically according to OD, stop all flow as the head traverses, and on command will channel all void volume to waste.

Its good looks go well beneath the surface: solid state electronics, rugged materials of construction and a clear, bright, unambiguous LED display all make for an instrument that's safe, dependable and easy to use.

Contact LKB today for full details.



LKB Instruments Inc.
12221 Parklawn Drive Rockville, MD 20852
301: 881-2510 Telex: 8-9682

58A-311

Circle No. 147 on Readers' Service Card

LETTERS

Testing Issues

R. Jeffrey Smith's article " 'Truth-in-testing' attracts diverse support" (News and Comment, 14 Sept., p. 1110) presents a generally balanced view of a complex and often perplexing situation. Smith's assessment of the issues in the debate over testing legislation is, overall, fair and accurate. There are, however, a few points that warrant further clarification.

First, we at the Educational Testing Service (ETS) have always stressed the limitations of tests. For example, the high school record is usually a better predictor of academic success in college than are Scholastic Aptitude Test (SAT) scores. However, when the two are used together, their joint predictive power is better than either alone—one reason why ETS stresses that SAT scores not be used alone for admissions decisions. We emphasize the same approach for tests at the graduate level, although research has shown that tests such as the Graduate Record Examination (GRE), the Law School Admission Test and the Graduate Management Admission Test are typically somewhat better predictors of graduate academic success than are college grades.

Smith's statement that a 60-point score divergence on a 600-point scale "is considered statistically insignificant" seems to imply that individual scores must differ by more than 60 points in order to warrant consideration. (What Smith is referring to is the concept of the standard error of measurement, a phenomenon common to all measurement, including physical, psychological, and educational.) ETS reports standard errors of measurement to alert test users to the limitations of relatively small score differences rather than to suggest that differences as large as 60 points, which is *twice* the standard error of measurement, be ignored altogether.

In this regard it may be helpful to point out that the available evidence indicates that high school grades have a larger error of measurement as predictors of academic performance than do SAT scores. Other criteria used in the admissions process, such as interviews and recommendations, have still larger errors of measurement and, in addition, are often subject to bias.

On quite another matter, Smith correctly states that the current ETS cost for developing tests is about 7 cents of every test dollar. But that cost must increase in direct proportion to the number of new tests produced. Before the

New York disclosure law was passed, with a limited inventory of test editions a program such as the GRE could offer students an opportunity to take the tests more than 20 times a year. But if test questions and answers must be disclosed after each administration, they cannot be reused without giving an unfair advantage to some students. Increasing the number of new test editions cannot be accomplished by keeping a machine running for more hours each day. The art of test construction requires human judgment and expertise. Test questions must go through comprehensive reviews, edits, tryouts, and analyses. To cut corners is foolhardy and undermines efforts to produce quality tests. The result of the disclosure requirement will be higher costs or reduced services (that is, fewer test administrations).

The 22 percent ETS "profit" Smith reports is simply off the mark. That figure was derived by supporters of the testing legislation from the College Board's published 1978 budget by subtracting expenses from income for the Board's Admissions Testing Program. But it ignores \$11 million in expenses for College Board regional offices, publications, research and development, and administrative costs. In more conventional financial terms, the College Board reported a net income of 1.2 percent or \$605,060 on an income of \$51.8 million in fiscal year 1978. (ETS income during the same period shows a net of 1.7 percent or \$1.3 million on total revenues of \$78.3 million.)

Finally, far from "harassing" the Federal Trade Commission (FTC), ETS encouraged the Commission to publish its study on the possible effects of coaching on the SAT and urged that the study be accompanied by all of the relevant underlying data.

Moreover, the FTC did not "sit on" the report for 8 months, as Smith states, but instead took the time to reanalyze the data from the Boston study. That reanalysis prompted FTC headquarters in Washington to report that the methodology of its Boston regional office was flawed, making the Boston report unreliable.

A further disclaimer to the report, added by the FTC Washington office, concluded that since the data were nonexperimental, it was impossible to disentangle the effects of coaching and the potentially higher motivation of students wanting to be coached. "Another important qualification," said the FTC, "is that the study could not take account of all possible effects of self-selection—for example, the possibility that people who seek out coaching programs may be es-

pecially motivated to achieve higher test scores in a way the study could not measure."

In conclusion, we, too, look forward to more research on the coaching issue, as well as more understanding of tests and the work conducted here at ETS. We thank *Science* for airing some of the issues.

ROBERT J. SOLOMON
*Educational Testing Service,
Princeton, New Jersey 08541*

Smith inaccurately suggests that the National Consortium on Testing supported testing legislation recently passed in New York. The consortium, a coalition of diverse interests, has *not* taken an official position of advocacy with respect to that or any other legislation. Some consortium members actively supported the New York legislation; some opposed it. As a single entity, the consortium and its research staff have tried to bring responsible analysis to bear on these and other public policy issues concerning testing, but the consortium as a group has taken no public position on these issues.

VITO PERRONE
*National Consortium on Testing,
Post Office Box 9521,
Arlington, Virginia 22209*

The Ebla Tablets

William J. Brôad's article "Syria said to suppress archeological data" (News and Comment, 31 Aug., p. 878) confuses two issues: (i) Are the Syrian authorities improperly attempting to influence scholars to drop the Biblical connections of the Ebla tablets? (ii) If so, are the Syrians having any success in this effort?

The answer to the first question is clearly, yes. For a Syrian government official to request a scholar to make an official disavowal would be unheard of in a free scholarly atmosphere. Such a declaration was requested by the Syrian government and given by Giovanni Pettinato. Moreover, the Syrian government does not hide even now its displeasure at Pettinato's earlier interpretations of the Ebla tablets. As the Syrian ambassador to Washington recently stated in an interview published in *Biblical Archaeology Review*, "Dr. Pettinato tried to give interpretations of the Ebla tablets with a political dimension. This is what we didn't like." When American Biblical archeologists (primarily David Noel Freedman of the University of Michigan and vice president of the American Schools of Oriental Research)

The first microprocessor-controlled fraction collector... LKB's MultiRac™



LKB's MultiRac fraction collector is unlike any other in versatility of function, reliability of operation and simplicity of use.

Just push a few buttons and you can program the unit to collect in any size vessel from test tubes to carboys — by time, drop or LKB's precise volume. The 250 msec switch-over between tubes minimizes dribbling and a "stop" feature can eliminate it entirely.

Microprocessor control conserves test tubes by diverting column void volume to a built-in waste container. Still more tubes are conserved by varying fraction sizes according to OD. During peak elution, small fractions are collected for optimal resolution . . . in the valleys, tubes are filled to capacity. You can start your run and leave for an early dinner, knowing that when you come back the next day, not a single tube will have been wasted.

Non-tipping spring-loaded racks accommodate everything from 8 mm test tubes to 28 mm scintillation vials to funnels feeding carboys. Racks fit in a tray that is removed in one easy movement.

Keeping wet operations below the circuitry and using tough, inert materials make the MultiRac safe and easy to use with all liquids, even aggressive solvents and radioactive solutions. Power interruptions are also tolerated — a memory retains data up to 16 hours. And in the unlikely event that something *should* go wrong, a self-diagnosis function helps you locate the problem.

By the way — fraction collector, pump, column, monitor and recorder all occupy less than two square feet of bench space.

LKB

LKB Instruments Inc.
12221 Parklawn Drive Rockville, MD 20852
301: 881-2510 Telex: 8-9682

Circle No. 148 on Readers' Service Card

57A-310