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Measuring Literacy in a World Gone Digital

By **TOM ZELLER Jr.**

There was a time when researching a high school or college term paper was a far simpler thing. A student writing about, say, Count Ferdinand von Zeppelin, might have checked out a book on the history of aviation from the local library or tucked into the family's dog-eared Britannica. An ambitious college freshman might have augmented the research by looking up some old newspaper clips on microfilm or picking up a monograph in the stacks.

Today, in a matter of minutes, students can identify these and thousands of other potential resources on the Internet - and, as any teacher will attest, they are not always adept at sorting the wheat from the chaff.

Now the Educational Testing Service, the nonprofit group behind the SAT, Graduate Record Examination and other college tests, has developed a new test that it says can assess students' ability to make good critical evaluations of the vast amount of material available to them.

The Information and Communications Technology literacy assessment, which will be introduced at about two dozen colleges and universities later this month, is intended to measure students' ability to manage exercises like sorting e-mail messages or manipulating tables and charts, and to assess how well they organize and interpret information from many sources and in myriad forms. About 10,000 undergraduates at schools from the University of California, Los Angeles to Bronx Community College are expected to take the test during the first offering period, which ends March 31.

Still, just what is meant by "information" or even "technological" literacy remains a hotly debated topic in academic circles, and there is no widespread agreement on whether such skills can be taught, much less measured in a test. What seems certain, however, is that a lucrative market is emerging for testing companies that are willing to fill the perceived need.

The initial technology test is aimed at midlevel college students, but the Educational Testing Service says it has also received inquiries from high schools and businesses. And while the new assessment is not a high-stakes requirement for academic advancement like the SAT, it seems inevitable that most students will one day need to prove themselves along these lines.

Part of the problem, many educators say, is that the traditional vetting process for information is now so easily bypassed.

"In an earlier time, information came, really, from only one place: the university library," said Lorie Roth, the assistant vice chancellor of academic programs for the California State University system, one of seven school systems that worked with the testing company over the last two years to develop the test. "Now it is all part of one giant continuum, and often the student is the sole arbiter of what is good information, what is bad information and what all the shades are in between."

But not everyone agrees that measuring information literacy can be done, even with a standardized test.

"There is a basic problem with identifying a single set of skills that could possibly relate to all people," said Stanley Wilder, the associate dean of the River Campus Libraries at the University of Rochester in New York, who wrote a withering assessment of the information literacy movement in *The Chronicle of Higher Education* two weeks ago. "There isn't a serious critique of any of the assumptions that info-literacy makes," Mr. Wilder said in an interview. "They'll tell you that it teaches critical thinking, but there's never been a study that measures whether students are really lacking this, or whether libraries can impact this."

Be that as it may, it is true that the information literacy movement could prove a windfall for companies like the Educational Testing Service.

Developing metrics for measuring how much students know - or how much they have yet to learn - has become a lucrative market. Eduventures, a research firm in Boston, estimated the assessment market for prekindergarten to Grade 12 - excluding the college years and beyond - at \$1.8 billion for 2003. Given President Bush's announcement last Wednesday that he plans to expand the standardized testing mandated under the No Child Left Behind Act - which includes a commitment to "ensuring that every student is technologically literate by the time the student finishes the eighth grade" - the market for assessments is certain to grow.

Beyond the SAT, the Educational Testing Service controls a separate boutique market of higher-level tests like the Graduate Record Examination and the Graduate Management Admission Test. Despite its nonprofit status, it is the world's largest private educational testing and measurement organization. The company administers and scores nearly 25 million tests annually in more than 180 countries, and posted \$825 million in revenues for fiscal year 2004.

In an extensive report, "Tech Tonic: Towards a New Literacy of Technology," published in September, the Alliance for Childhood, a nonprofit group that is often skeptical of technology in schools, was critical of the new test. "For E.T.S., this is part of a broader global plan to develop and promote international technology literacy standards, and then offer countries around the world a chance to buy a full array of assessment products and services that can be used to implement their standards," the report said.

But if critics see this as an unjustified entry into an already littered field of standardized tests, the company argues that the information age - and a new culture of accountability - demand it.

"I think there's always that tension," said Teresa Egan, the project manager who is steering the test's release at the end of this month. "People feel there's too much testing across the board now. Or they ask whether we are focusing so much time on testing that students don't have time for other educational experiences.

"But the public wants accountability. People want to ensure that colleges are actually preparing students for the future - the future being an information society." The technology test will cost colleges around \$25 a student - discounted to \$20 for institutions that sign up during the first testing period. Students will take the Web-based exam in classrooms or instruction labs, logging on with access codes purchased by their schools. Scores in the first round will be aggregated for each institution; the company aims to make scoring for individual students available in 2006.

In 2001, the testing company brought together an international consortium of educators, technology specialists and government representatives to begin defining the core characteristics of information consumption at the college level.

Knowing where and how to find information, they agreed, was just the beginning. Interpreting, sorting, evaluating, manipulating and repackaging information in dozens of forms from thousands of sources - as well as having a fundamental understanding of the legal and ethical uses of digital materials - are also important

components.

"Critical thinking is a central aspect of the new economy," said Robert B. Reich, the secretary of labor in the Clinton administration, who is now a professor of social and economic policy at Brandeis University. Professor Reich is also the author of the 1991 book "Work of Nations: Preparing Ourselves for 21st Century Capitalism," which provided a something of a touchstone for the information literacy movement. "Our high school curricula are locked into an industrial age that may have only a tangential relationship to the information age," he said in an interview.

To the extent that efforts like the new technology test help reshape curriculums along these lines, Mr. Reich said, they probably will help.

According to Ms. Egan of the Educational Testing Service, the test is also fun.

"Can you help me find a good source of products and gifts designed for left-handers?" reads a sample question from a fictitious office manager. "I'd like someplace that offers a wide range of merchandise with product guarantees - also that has an online catalog and online ordering. Discounts would also be a plus."

Fictitious colleagues might then make suggestions via e-mail, and the test taker might also get input by instant message from people using screen names like SkyDiver, JJJunior and TVJunkie. The test taker would be asked to consider the various sources and suggestions, and to rank them by relevance to the original request.

Other parts of the test ask students to do everything from the seemingly mundane (like sorting e-mail messages into appropriate folders) to head-scratching tasks like "reordering a table to maximize efficiency in two tasks with incompatible requirements," according to a brochure.

Asked if she had taken the test herself, Ms. Egan responded, "What a cruel question.

"I took it earlier on, when there was no way to produce a score from it. But I knew myself that there was a lot I needed to learn."