CONTENTS

5 The Vain Quest for a Unified Theory of Learning
   David H. Jonassen

9 Optimizing the Design of Computer Classrooms: The Physical Environment
   Heather B. Huffman et al.

14 Planning for Technology: The Link Between Intentions and Use
   Barry J. Fishman and BaoHui Zhang

19 I Object! Moving Beyond Learning Objects to Learning Components
   Thor A. Anderson

25 Dale's Cone Revisited: Critically Examining the Misapplication of a Nebulous Theory to Guide Practice
   Deepak Prem Subramony

31 Extreme Thinking: Transforming Traditional Student Projects into Effective Learning Environments
   Annette Lamb

41 The Cultural Discourses of Educational Technology: A Canadian Perspective
   Denis Hlynka

46 An Electronic Performance Support System for Learning and Doing Instructional Design Tasks
   Chi-Cheng Chang

52 Supporting and Assessing Online Interactions in Higher Education
   Mark Hawkes and Terry Dennis

57 Developing High-Quality Web-Based Training for Adult Learners
   Paul Giguere and Jennifer Minotti

59 A Conversation with Todd Hoover
   Daniel F. Oswald

62 Reader Comments:
   - No Child Left Behind: More Rhetoric than Reality
   - The Cultural Divide

educational technology®

Volume XLIII Number 4

July–August 2003

About This Issue
A general issue covering varied aspects of educational technology
No Child Left Behind: More Rhetoric than Reality

Chris Dede’s article, “No Cliché Left Behind” (March–April 2003), points out many of the flaws in the No Child Left Behind (NCLB) amendment to ESEA, including disincentives for the use of educationally sound technology-based practices; also, many states and districts are forced to reallocate inadequate federal resources to the creation of an NCLB compliance infrastructure, often at the expense of new learning opportunities. While instructional technology use is encouraged in numerous provisions in the law, it is not a priority of this Administration as reflected in its regulations and other guidance issued thus far. While it is almost impossible to implement some of the accountability and assessment reporting requirements without relying on technology, there do exist some unique opportunities. I believe, to promote educationally sound practices through the use of technology while protecting a district’s “backside.”

One area in which technology can be used to minimize the effects of certain unintended consequences inherent in NCLB is assessments. For example, several states which have proposed to use adaptive computer-based testing (assessing students with instruments closely aligned with their achievement level rather than enrolled grade level) have been told by USED that such assessments violate the Law. (See USED Non-Regulatory Guidance 2003, March 2003.) When a subgroup of student scores includes gifted and talented students, the actual scores for grade level assessments will likely be less than reality because of “ceilings” on the norm-referenced tests. Two sets of scores would likely point out major differences and perhaps justify NCLB policy change.

Technology can also be used to justify alternative ways, beyond the “prescriptive flexibility” included in numerous regulations, and otherwise protect a district’s “backside” when negative results occur. One such case here is to maintain “two sets of books” on LEP students and special education students (i.e., one for state reporting purposes and one for Federal accountability reporting purposes) for those students who “graduate” or “exit” from special education or English acquisition programs. Otherwise, narrowing the achievement gap between these subgroups and other subgroups for adequate yearly progress reporting will be impossible. Only in January, 2003 did USED publicly recognize this problem in a statement in the Federal Register (January 8, 2003). At least one state, Oregon, has proposed to use a “dual accountability” reporting system. Technically, Oregon can do so because it was the first to adopt statewide computer-based assessments and reporting.

Approximately 5,000 schools have been reported by 48 of the 50 states to having been “identified for improvement,” either failing two consecutive years to meet the state’s adequate yearly progress (AYP) proficiency level, or failing for three consecutive years. This number is likely to double or triple next year. A school which has failed for two consecutive years has to use at least 15 percent of its budget for staff development and provide parents options to have their child transferred to another school. Those failing for three consecutive years also have to contract with one or more state approved “supplemental service providers” to provide tutoring and related services, if parents so choose. Several hundred district Title I coordinators, who do not want to have Title I funding paid as a fee to an outside company to provide such tutoring, have decided to apply to the states for the district to become an approved supplemental service provider, which is allowed under the new Title I final regulations published in December. Technology, particularly online instruction, could provide the means for taking advantage of such situations.

Distance learning in certain places may be the only alternative to implement the supplemental services provision in the Law, especially that which provides remediation and instructional intervention strategies which will be critical in rural school districts and those on Indian reservations which have many schools that have been “identified” for improvement. While the Law refers to tutoring by groups in “close proximity to failing schools” as one alternative to meet the “supplemental service” requirements, the Congressional Conference Report and subsequent USED guidance on supplemental services and Title Regulations explicitly state that online instruction is not only allowable but might be the only possible alternative in “identified” rural schools where other alternatives don’t exist.

Two training areas in which online instruction will increasingly play a critical role are: (a) training and certification of approximately 400,000 existing paraprofessionals (of the total one million) do not meet the NCLB “highly-qualified” requirements and newly hired aides; and (b) providing online staff development for individuals who are in the process of achieving state teacher certification through alternative routes. Alternative route teacher candidates can be employed before certification only if they participate in ongoing, sustained professional development leading to their certification in the subject area in which they are providing instruction.

In the article, Dede states “the United States could become the first nation in the world where every pre-college child receives the equivalent of a general high school education but no graduating students learn more.
than this.” Later, he emphasizes the types of 21st century work and citizen skills included in the Department of Commerce SCANS report during the early 1990s. Many of the officials attending the invitation-only National Summit on Information and Communication Technology in January pointed to provisions in NCLB to ensure that all students are technology literate by the 8th grade. However, much of the rhetoric in this area does not reflect reality in the form of USED regulations. For example, on May 22, 2002, states were told that in their first consolidated application for funding, they did not have to report annually on how many students at the 8th grade level had achieved technology literacy proficiency, how many teachers had been trained to use technology, and how many students have access to the Internet in the classroom. All three provisions are explicitly stated in the Law, which is one example of this Administration’s use of “selective implementation” of the Law, i.e., actually implementing through the regulatory process only those provisions in the Law which it strongly supports. Moreover, the same regulations actually encourage up to 50 percent of the districts’ formula grants under Title II Technology Enhancement to be transferred to, for example, Title I schoolwide program, while making explicit that Title I schoolwide programs do not have to report how they spent their funds.

A recent GAO report (February 2003) recommended that the “supplement not supplant provision” which had been the backbone of Federal aid to education over the last 35 years be eliminated because it is “unworkable,” i.e., how funds are spent do not have to be reported. If states don’t have to report on how much progress is being made in meeting some of the new technology indicators, Congress is not likely to want to continue providing funding for such programs for which progress is not being measured and reported.

USED lack of priorities is not only reflected in the regulations but also in proposed budgets. In order to win over support from technology advocacy groups before the passage of the NCLB, the Administration on numerous occasions “promised” to support an increase from about $830 million for FY 2001 to $1 billion if the group in turn would support the Administration’s proposal to convert the Technology Literacy Challenge Fund to a state-operated block grant, which in fact occurred. However, in the last two budget proposals, the Administration has proposed to zero fund several technology-related initiatives, such as Preparing Tomorrow’s Teachers for Technology, Star Schools, and Community Technology Centers, while only level funding the basic Title II D programs.

Over time, I hope that policymakers will realize that a more common-sensical and practical implementation of NCLB will be required and, where necessary, changes will be made in the Law or regulations to move more quickly toward what Chris Dede refers to as the “next generation.”

Charles Blaschke
President, Education TURNKEY Systems
Falls Church, Virginia
(e-mail: cblaschke@editurnkey.com)

The Cultural Divide

Ellen Rose’s article (“Boundary Talk: A Cultural Study of the Relationship Between Instructional Design and Education,” November–December, 2002) on the cultural divide between programs in Instructional Design and both K-12 and higher education highlights a phenomenon too many of us can painfully confirm. Whether our departments are called Instructional Design, Instructional Technology, Instructional Science, or like our own Instructional Psychology and Technology, we are all well aware that our departments exist as foreign bodies within the larger school or college of education. I am quite familiar with one department which has been killed off twice in its 32-year history by the larger college, only to be resurrected on both occasions. Ironically, a reason for the attacks is that too many of the graduates of this department were serving industry or government, not the schools.

This cultural divide is not just about Instructional Design. It is about the entire science-based or engineering-like approach to improving education. Measurement and more rigorous forms of evaluation are as culturally unacceptable as is systematic design and the engineering metaphor. If favorite educational methods are shown to produce no effect, or worse, negative effects, there ensues an argument that always includes an attack on the adequacy of the measures used: “These measures cannot capture the subtle values we are achieving,” or worse, “it is impossible to measure what we are accomplishing.” I like Rose’s critique that our position is not neutral, and should be examined and taught for what it is. I do hope that Rose’s recommendations are not meant to imply that standing firm on the values of design, measurement, evaluation, and the quest for a science in education worthy of the name is not ruled out by the need to merge with the other culture.

C. Victor Bunderson
Professor Emeritus, Instructional Psychology & Technology
Brigham Young University
Chairman, EduMetrics Institute, Provo, Utah
(e-mail: vbunderson@edumetrics.org)