



AT Outcomes Summit

*Assistive Technology
& Educational Progress
... Charting a New Direction*

Executive Summary

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O'Hare, Chicago, IL**

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Executive Summary

Assistive technology holds tremendous potential to help millions of school-age children with disabilities be more productive and live better lives. Although the field of assistive technology (AT) has promoted an increased use of equipment, software, and strategies in schools, it is becoming increasingly clear that systematic and widespread collection of data regarding the effects of AT on educational outcomes is needed. The *Individuals with Disabilities Education Improvement Act of 2004* and *No Child Left Behind Act of 2002* emphasize the need for accountability *both* in outcomes and in the selection of interventions, i.e., research-based practices.

Two efforts are underway to address the issue of student outcomes. Large scale assessments are attempting to develop the data needed to determine the effects of educational interventions on student progress at the district and state levels. Curriculum-based measurement is attempting to provide teachers with a means of assessing continuous student progress in the classroom. At this time, a critical issue is how to determine the role and effectiveness of AT in relationship to these two on-going efforts; and perhaps more centrally is the question, 'What is the model for determining the effect of AT upon educational outcomes for students with high incidence disabilities?'

To address this broad question, the Special Education Assistive Technology (SEAT) Center at Illinois State University, in partnership with the National Center for Technology Innovation and University of Kansas, and with sponsorship support from AbleNet, Inc., Don Johnston, Inc., Freedom Scientific Learning Systems Group, Illinois State University, Kurzweil Educational Systems, Inc., and Texthelp Systems, Inc., hosted an Assistive Technology Outcomes Summit in Chicago, Illinois, on December 15-16, 2005. Nationally recognized individuals representing vendors, research institutions, state projects, and school district practitioners were invited to participate. Conceptually, the Summit was designed to bring together a cadre of experts from both general and special education to clarify the inherent issues related to the effects of AT on educational outcomes. Targeted outcomes were to examine participant responses to a series of questions with the identification of strategies and recommendations that would serve as a framework for subsequent research, policy development, curricula and professional development activities. Key questions presented to the Summit participants follow, accompanied by themes of discussant conversations and recommendations.

Question 1: What are the current challenges with the use of technology and AT in assessment of educational outcomes?

Professional conversations to date regarding AT outcomes has revolved around access, use, and related topics. Unfortunately, relatively little discussion has focused on the role of AT and its relationship to educational outcomes embedded in the current national emphasis on adequate yearly progress (AYP).

Current Challenges: Themes from Summit Discussions

Participants' discussion clustered around challenges associated with large scale assessments, the integration of technology into educational practice, measuring educational outcomes and technology effectiveness, and professional preparation needs. Each challenge sums up a considerable array of issues related to equity, lack of an AT outcomes research base to guide policy, and the emerging awareness that schools are not effectively preparing students for demands of a 21st century workforce. For example, equity issues include ineffective consideration for and integration of AT into children's individual education programs (IEPs). This problem is compounded by the lack of awareness about AT demonstrated by many general education teachers with whom these children spend a majority of their instructional time. As a result, AT is often not a facet of discussions and policies regarding subsequent statewide assessments across the states.

With regard to the lack of a research base to guide policy, federal support of the use of AT has underemphasized, if not ignored, the need to measure AT educational outcomes. Conversations specific to AT outcomes have often focused on IEP compliance-related issues—not curriculum-based or instructionally focused concerns. This situation is exacerbated by the lack of instrumentation educators could use to make the connection between available data and technology needs.

The net effect of these challenges is disjointed efforts to assess students with special needs: data is not available to inform local and federal policies or for training of professionals in the use of AT to improve instruction.

Question 2: How do these challenges affect the assessment of writing, reading, math, and other content areas?

The lack of research to identify “what works” or what is evidence-based practice results in great challenges associated with integrating technology applications into instruction. If the technology does not have a research base to be considered a critical element in instruction, the question exists whether the field can expect it to be part of the assessment and determining educational outcomes for students with disabilities. A possible solution then is to focus the work of researchers to better understand the instructional power of interventions that enhance performance.

In the Content Areas: Themes from Summit Discussions

In some academic areas, such as math, there appear to be tools (e.g., calculators and graphing calculators) that have been identified by professional content organizations, e.g., National Council of Teachers of Mathematics (NCTM). Parents are often expected to provide these tools as part of the curriculum. However, education professionals don't have the same expected tools in writing and reading that have been identified and endorsed by professional organizations.

There is a need to identify the features of technology that are critical to elements of specific tasks in these areas and the profile of the student. Rather than simply talking about what the tools are,

discussants noted how features of technology line up with critical elements of expected tasks in each content area and how those relate to students' abilities, needs, profiles, and characteristics.

The research being conducted should include matching the features of technology to the elements of instruction in the same way that education professionals currently match features of the technology to elements of the task. Related to this is the need to determine the functional things that students need to do, i.e., real world applications and tasks that are expected in content area work, and connect the features of technology to the critical elements.

Question 3: What is needed to measure the impact of AT on educational progress?

While there is a need for instrumentation to assist in the identification of appropriate devices, even more important is the pressing need to develop tools that collect on-going and follow-up data on technology integration and educational outcomes. It is critical that a national vision be developed that includes general test accommodations across the states and a set of shared instruments to assist education professionals with data collection. Only with shared data collection instruments can the field begin to aggregate data in sufficient power to influence policy and practice.

Areas of Need: Themes from Summit Discussions

Six areas of need emerged from the discussions, each highlighting actions that could advance the effort to demonstrate the effectiveness of AT:

- ***Technology Use, Application and Integration***
To better inform all stakeholders and assist both practitioners and policy-makers, there are ongoing needs for basic information regarding multiple facets of the AT service delivery system. This includes demographic data and current AT usage by children in the U.S. There is also a need to redefine AT in relation to instructional technology, productivity, and fundamental AT outcomes. Such a redefinition should occur within the context of existing standards and those needed to prepare students for life in the 21st century.
- ***Research on AT Outcomes and Large Scale Assessments***
There is a need to develop protocols for research that will yield data addressing what works with whom and under what conditions. Of particular importance is research focusing on specific AT strategies, devices, and services and their impact on student learning and enhanced performance. Research is needed on innovative measurement of tests and strategies that currently do not permit differences in technology and accommodations. This research should identify and develop technology-differentiated large scale assessments that permit *all* children to demonstrate their knowledge and skills using technology.
- ***National Evidence Database of AT Effectiveness***
There is a need for a nationally accessible database on effective technology-based practices for teachers, policymakers, vendors, and school personnel. A common source for sharing evidence generated from traditional research sources and from action research addressing school- or district-level defined problems would be of great value to all stakeholders.
- ***Models of Effective Practice***
To reduce the current achievement gap for students with disabilities, there is a need for a new set of technology-based interventions to enhance achievement in less time. Models of

differentiated instruction and assessment strategies are needed that link to fundamental skills necessary for future productivity and which permit students to use appropriate tools that work best for them.

- ***Teacher Preparation and Professional Development***

Changes in the perception of technology and its integration in the curricula must occur at the pre-service level. Professional development partnerships involving university, public school, and vendors can facilitate these needed changes. An immediate need is to focus on faculty and institutions who educate general and special education teachers. Policy changes must occur that communicate the expectation that teachers will be competent in *both* instructional and assistive technology. These policies must also emphasize the integration of these technologies into classroom instructional practices.

- ***Communication of Technology Needs, Effectiveness and Outcomes***

There is an immediate need for a national public awareness campaign to shape perceptions of what AT is and what it does, as well as addressing the power of technology to differentiate instruction. As part of the campaign, specific talking points targeted to specific audiences should be developed to guide the shape the perception of technology as a performance enhancer *for all students*.

Next Steps

This Summit was designed to bring together multiple stakeholders involved in a range of AT outcomes-related activities. However, discussants agreed that numerous other stakeholders should be involved in such conversations that hold substantive policy and practice implications for the AT field. The findings presented herein support and extend the work of numerous groups in recent years, and are viewed as a catalyst for continued discussion and refinement of issues and recommendations. In 2006, a Summit will be conducted that focuses specifically on the academic curricula in the public schools. To support planning for the 2006 Summit, the partners will collaborate with the Assistive Technology Industry Association to publish a special issue of *Assistive Technology Outcomes and Benefits* targeting key themes identified at the 2005 Summit.