



Making it Happen Gazette

Trends in Educational Technology: Turning Data into Informed Instruction

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The current education climate places an increased emphasis on the need for data and the ability to interpret that data to make informed instructional decisions that positively affect student achievement. Some of the largest challenges facing educators today, such as closing the achievement gap, ensuring student mastery of standards, and preparing students for proficiency on mandated exams, all require data to identify areas of strength and areas of concern, allowing classroom time to be maximized on the instruction each student needs most.

As a result of No Child Left Behind guidelines, the amount of data gathered on students, teachers, and administrators has dramatically increased. The challenge has now become: “How can the data best be used to drive what is happening in the district, in the classroom, or in the home?”

A shift is taking place in educational technology to deliver tools that address this concern. The release of software platforms that automate nearly every instructional activity that affects students, teachers, and administrators can help to turn the data into real results.

Greene County Schools in North Carolina has implemented this type of technology to meet their academic needs and initiate school reform. Using data to determine how they were going to arrive at the goal of “being the best rural school system in the nation,” Greene County educators categorized their programs into areas of success and areas of need. The district then established instructional priorities to address the areas of need and used technology as the means to deliver high-quality, student-centered instruction.

The Greene County team agreed that the best way to encourage change through technology was to ensure the alignment of all tools to the North Carolina Standard Course of Study. Many of the new instructional technology platforms have the alignment to curriculum and standards at their core. Data tied to standards can be used to identify:

- (1) whether the student mastered the standard
- (2) whether instruction is directed and guided by the standard
- (3) whether the content truly matches the intent of the objective
- (4) the need for additional resources that address the standard
- (5) which subgroups are lagging behind.

With integrated alignment, technology becomes the tool that links the data and standards with instructional activities—from creating assessments, locating standards and instructional materials, building courses, assigning and scaffolding instruction, updating standards-based grade books, and generating progress reports. Through technology, Greene County built a connected education system, promoting a systems framework of all instructional activities across the district.

Within this connected system, assessment, instruction, professional development, curriculum development, and communication tools “speak” to one another, providing educators with real-time data that can be interpreted and applied to affect learning on a daily basis. No longer do educators have to wait for end-of-year test results to see if their students have mastered the standards or are struggling in a specific area. It is too late to intervene if the end-of-year test results indicate an area of concern, identify a standard the student didn’t master, or uncover standards that weren’t taught in the classroom. The students are already at the next grade level, and the opportunity for teaching or remediating the skill has passed.

The technology-aided education environment instead has provided access to real-time data, allowing teachers to quickly and easily personalize learning and reach students with the instruction they need most, when they need it. Greene County has found that learning has become much more individualized with more dynamic lessons and more up-to-date information shared in the classroom and with parents and administrators. The end result is a student body more prepared to meet standards requirements and perform proficiently on high-stakes exams.

Education requirements are now demanding more data and more accountability. Educational technology has begun to address this movement by providing specific data that helps district administrators, principals, teachers, parents, and students focus teaching and learning on the critical areas that need improvement; state agencies and district officials make adjustments to resource allocations and professional development programs. This new technology environment helps to ensure that data is actionable and informs instruction to positively affect achievement results.

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ISTE's CEO, Don Knezek, represents ISTE members from the ISTE Washington, D.C., office. He has a distinguished career in educational technology, and he has been involved with ISTE for many years. Since 1999, he has served as director of the organization's National Center for Preparing Tomorrow's Teachers to Use Technology (NCPT³). In that role, he created, established, directed, and sustained the center and its programs, designed to improve the technology preparation of new teachers. Since 1989, he has served on ISTE's Accreditation and Professional Standards Committee; he has also held positions on ISTE's Board and Executive Board and on the organization's Conference Committee.

Knezek earned his PhD in educational administration from the University of Texas at Austin, where he was a fellow in the Cooperative Superintendency Program. He did graduate study in computer science at the University of North Texas and holds an MA in mathematics from the

University of Hawaii. He graduated cum laude with a BA in mathematics from Dartmouth College. He holds certificates in public school administration at the superintendent, mid-management, and supervisor levels and as a teacher of mathematics, physics, and computer science.

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