Six reasons why differentiating instruction with technology works

By Heather Ellwood

If you ask Bruce White, differentiated instruction is just good teaching. White is a learning technology coordinator based in London, Ontario, who supports 33 schools in the Thames Valley School District. Much of his time is spent encouraging and assisting teachers to differentiate their instruction by making full use of the technology tools in their classrooms.

“Differentiated instruction is making sure that every student is engaged. It means that as a teacher you look at the needs of your students and you try to modify your course and your instruction to match those needs,” White says.

Grace Smith and Stephanie Throne are former teachers and authors of the book Differentiating Instruction with Technology in K–5 Classrooms. They also created the insightful website Everything DI. Smith, now a district-level technology coordinator, and Throne, an education consultant, believe most teachers are well on their way to creating a differentiated landscape within their classrooms. Differentiated instruction, or DI, they say, has been practiced since the days of the one-room school house, when a teacher taught every subject to students from every grade level.

“What DI really means is you as a teacher are making adjustments in your teaching to help students learn,” says Smith.

Linda Rush, a technology teacher at the Notre Dame School for developmentally challenged students aged 6 to 22, in Dallas, Texas, is also an advocate of differentiating instruction. Her students come to the computer lab with a wide variety of special education needs and learning challenges, and each of them tackles the coursework from a different level of skill. Technology, she explains, “makes learning more accessible for our students.”

On this point, Throne and Smith agree. It’s something they witness again and again when they visit classrooms across North America. Coming from their different perspectives of technology coordinator and teacher, White and Rush are also both strong proponents of the role technology products, such as the SMART Board™ interactive whiteboard, play in the differentiated learning environment. Like Throne and Smith, they advocate using technology to reach all their students and meet all their needs. Here are six reasons that explain why.

Accommodating learning styles

One of the basic tenets of differentiated instruction is to start with the interests of the student, and then move through content and curriculum in the way best suited to that learner. Teachers who differentiate instruction take careful note of a particular student’s learning style and then create opportunities that exploit that style. It doesn’t matter if the learning style is auditory, visual or kinesthetic – technology helps a teacher reach them all, say Throne and Smith.
White has these learning styles in mind when he helps teachers use the SMART Board interactive whiteboard to differentiate instruction.

“With the SMART Board, different types of instruction are readily available to me. I can use a graphic organizer in SMART Ideas™ software, and we can organize what we’ve learned for those visual learners. Or I could type something up in Word – then I have a worksheet for those students who need to read the text. And if a student needs more hands-on work, I can easily build some practice exercises for them to work through on the interactive whiteboard. It accommodates everyone’s learning styles and teaching styles,” he explains.

Many of Rush’s students are kinesthetic learners who need to manipulate and touch in order to learn. The SMART Board interactive whiteboard plays a key role in her instruction, as it enables the students to physically manipulate learning objects, images, symbols and other tools.

“The SMART Board gives me the ability to allow my students to do a hands-on learning task over and over again, until they reach mastery. The more they practice something, the more it becomes integrated. That’s why the SMART Board has made such a difference for my students. It reaches them and how they learn,” says Rush.

**Technology motivates**

Today’s students have grown up with technology. Every aspect of their lives is infused with it. Throne and Smith believe that technology should also infuse the DI classroom, giving teachers more ways to reach students who aren’t motivated by traditional classrooms and traditional instruction.

“What we’ve learned in our research is that students, because they seem to be wired differently now than decades ago, feel they have to disengage from their preferred mode of learning when they enter their schools…. Many of the students say they have to decelerate from the pace they are used to once they enter their classroom. The instruction, the learning and the classroom itself are not formatted in the way they would prefer,” says Throne.

Simply using technology, perhaps even the technology the average middle school student has in a pocket, like a cell phone or an iPod MP3 player, helps teachers gain the interest of students. Rush found this out when she began using the Senteo™ interactive response system with her classes.

“Every student I’ve ever met knows how to use a remote control, and the Senteo is based on the principles of the remote. No matter the disability, each of my students loves using the Senteo and has no problem at all. In fact, they get so excited when I bring them out for a lesson,” she explains.
More tools for teachers

From digital cameras to laptop computers, software applications to education websites, the amount of learning-enhancing technology now available is a boon to the teacher who differentiates instruction. White finds that products such as SMART Notebook software allow the teachers in his district to take existing lessons and content and tweak them so they become more differentiated. They don’t have to reinvent the wheel. For example, he shows teachers how to create links within SMART Notebook pages to lead students through math problems that have been used in previous years.

He explains, “This is great for our teachers, because students can come up to the SMART Board on their own and work through problems while the other students are working at other learning stations or centers. Students can navigate through the content of a lesson or work through extra practice on a skill. They click on one page and solve a math problem, for example, and if they get it right, they move on to a more difficult one. If they get it wrong, they click on a link that leads them to a less difficult problem for them to work on.” The teachers can monitor student work and step in to help when needed.

When teachers have tools that help students help themselves and that allow them to work at their own pace, say Throne and Smith, it’s another key indication that differentiated instruction is working.

Enable collaborative teamwork

One of the benefits of differentiated instruction is that it helps teachers and students practice 21st-century learning skills, including teamwork and collaboration. Using such tools as blogs, the Google Docs™ program and class websites, students collaborate with their fellow students on content, whether those fellow students are across the hall or across the continent. Technology enables them to connect and communicate with the greater world and for the world to connect with them, on a local, regional or global level.

White has seen teachers break a class into groups before a field trip, distribute digital cameras to the groups and ask them to record the sights of the excursion. Students take photos of each aspect of the trip and make notes in their journals. Upon their return, the images are downloaded onto the teacher’s laptop, imported into SMART Notebook software and displayed for the entire class on the SMART Board interactive whiteboard. Then, taking turns at the board, the students use digital ink to write main ideas, captions or speech bubbles on each image. After that’s complete, the files are saved, printed and bound into a photo and journal record of the field trip.

Group work such as this, explains Smith, plays a huge role in 21st-century learning. It mimics what happens in the work world, where corporations and other organizations expect their employees to collaborate and create together.
Reaching reluctant learners
According to Smith and Throne, technology is the great equalizer. It doesn’t restrict. It doesn’t judge. It exists only to be used – and kids love to use it. Even the most reluctant, challenged or disinterested learner might possess hidden skill when it comes to technology. Throne explains that these students sometimes keep their heads down and their sights low. She advises tapping their tech talents. Ask them to take on the role of peer techie. Or give them a greater technology-based role when it comes to group work. If they have the chance to find their niche, with it will come their success. That’s DI, in action.

“Technology breaks down boundaries,” says Throne. “It takes teachers beyond asking what level their students have attained in terms of content or performance, and even breaks down those student perceptions in terms of who among them is an A student or a C student.”

To that end, White includes students when he does classroom training sessions on how to use the SMART Board interactive whiteboard. Teachers, he believes, have to learn to yield the interactive whiteboard to the students if it is to be used to its fullest potential. He involves students, shows them the ropes and lets them become in-class SMART trainers, who are often relied upon by teachers for their prowess when it comes to troubleshooting and using the SMART Board interactive whiteboard creatively.

Ask educators what sets a tech-infused differentiated instruction classroom apart from the pack, and they’ll tell you it’s the high level of excitement, engagement and eagerness. And that’s on the part of the teachers as well as the students. As is often the case, enthusiastic teachers create enthusiastic learners. When Smith visits DI classes, the first thing she notices is that students are more interested in learning and school than their counterparts in non-DI classes.

Rush believes the combination of differentiated instruction and technology has made a huge difference in her students. “In the two years since I’ve started using a SMART Board, I rarely have any behavior problems because my students are so engaged. My biggest problem is that sometimes the noise level gets high, but that’s because they are so excited about what’s going on.”

This is similar to what White finds when he visits his schools and asks teachers about their experiences using technology to differentiate their instruction. “What I hear again and again is that the students are more engaged, that classroom management is not a problem. The students are focused and interested because technology supports their outcomes.”

And such focus and interest, says both Throne and Smith, is reason enough to use technology to differentiate instruction.

“When students are really involved in learning and are able to pursue their own interests, the climate in the classroom is totally different. There’s no boredom,” explains Smith. “Today’s students are not like the students of 30 years ago, and the teachers shouldn’t be either. We really have to capitalize on the students’ interests, on what’s personal for them.”

Just ask Bruce White. Differentiating instruction with technology has made a huge impact on the students in his district. And, according to him, it’s just good teaching.

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