

## Naked Independence VS. Performance Support

In the September 2006 issue of *L&L*, we featured an article ("Failure Is Not an Option," pp. 20–23) that touched on the concept of using technology as a performance support tool. We were intrigued by the idea that technology might be used the way some people use eyeglasses, and asked **Dave Edyburn**, professor of Exceptional Education at the University of Wisconsin-Milwaukee, and his colleague **David Davis**, director of the Florida Instructional Technology Training Resource Unit, to discuss the issues associated with technology as a performance support tool.



### David Davis:

Examples of performance support technology include the bar code scanner used by the FedEx and UPS delivery person, the use of a computer-assisted drawing system by a product designer, software that calculates the cost of refinancing a 15-year mortgage with just a couple of clicks, software that solves mathematical word problems, and copy machines that have diagnostic troubleshooting features with step-by-step directions for unclogging a paper jam. By themselves, the tools have little value; their real value is the exponential increase in the productivity of the person who knows how to use each tool well.



### Dave Edyburn:

Is there a difference in thinking about technology as a performance support tool versus using technology to enhance learning?

**DD:** The use of technology as a performance support tool and the use of technology to enhance learning can be viewed either as extremely different paradigms or as related paradigms, depending on the simplicity or purity, if you will, of the viewpoint.

In its most basic state, performance support is not concerned with learning. In fact, the more quickly successful performance can be achieved without learning—or without learning an extensive set of prerequisite skills—the

more elegant the performance support solution. Part of the rationale for performance support technologies is to alter the ratio of costs associated with training and lost productivity because of participation in training.

At the other end of the spectrum, a learning purist may use technology as a tool to support learning, but the elegance of learning is demonstrated by the absence of technology during performance or when tested. Skills such as being able to recall information instantly from memory, perform mental calculations, and organize information on the fly are highly valued in our society; something our television quiz shows attest to. Many people believe that fluency in a wide range of “prerequisite” skills is necessary before a student can perform meaningful problem solving.

**DE:** It seems that there is general confusion about the role of technology in education. The computer-assisted instruction paradigm was all about a transmission purpose of education. That is, using the computer to help students acquire skills and basic content knowledge that was deemed important. Later emphasis on technology as a tool altered the focus from technology as an electronic workbook to technology as a gateway for citizenship in a global digital society.

I doubt many people would argue against teaching students how to use a search engine. Presently, years of schooling are devoted to basic content knowledge and prerequisite skills that can now be instantly retrieved

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using Google. It seems to me that the historical purpose of education was to produce knowledge and performance that was not tool dependent—naked independence. This raises an interesting question about what it means to “know” something. Is it really the same thing if I know something in my head or whether I retrieve it using Google?

**DD:** I believe the concept of 21<sup>st</sup>-century skills includes a basic acceptance of performance technology that enables students to focus less on rote memory and more on real-world problem solving, with a move toward learning how to use performance technologies in a global society. And this is not really new; it’s how we have used libraries and encyclopedias. So we are accustomed to not having to “know” something. The difference now is that information access is almost instantaneous. Search engines are certainly performance support technology.

**DE:** Viewing technology as a tool that can enhance performance seems to have important implications for individuals with disabilities and struggling students. Much the way society provides eyeglasses to individuals with vision problems, I wonder if we should start looking more closely at technology as a tool for enhancing cognitive performance?

**DD:** Performance support tools are very important for these students, especially if they are currently experiencing failure. We can either tell them that they cannot meet expected levels of performance or we can provide technology tools to help them be successful.

**DE:** Historically, schools have focused on building content knowledge in students so that they could carry a knowledge base around and solve problems anywhere. However, if

technology can be provided that enhances the performance of struggling students, doesn’t that mean we can provide struggling students with access to opportunities for higher-level thinking and problem solving?

**DD:** Well, in many cases there are basic barriers that prevent struggling students from participating in higher-order problem solving. The initial areas of Daggett’s rigor and relevance framework deal with basic knowledge acquisition and information organization, skills that can be difficult for students with learning disabilities. Performance support tools can help these students move past the basics as well as support them in working on analysis, synthesis, and evaluation processes. In addition, the real-world activities addressed in this framework are perfect for performance support tools. All have important implications for classroom instruction.

**DE:** I suppose we could make some of these changes in classroom practices, but wouldn’t we still have problems because performance support technologies will not be allowed in assessment environments?

**DD:** Assessment procedures are recognizing accommodations to various degrees, but they do not recognize performance technologies. How do you “test” a student on social studies if that student can use Google during the test? I think one dynamic is the various levels of technology use in different environments. Performance support tools are often ubiquitous in some environments and absent in others. Norm-reference testing may require testing using least common denominator or universal tools, but we should be careful that we don’t end up rejecting technology tools that

could increase student performance just to maintain the psychometric properties of norm-referenced tests.

**DE:** I find it interesting that we fully accept the role of performance support tools in the workplace and our personal lives but we find it difficult to allow these tools in school. For example, when a driver uses cruise control we still call it driving (or should it be called “steering”?) but when a student listens to a book read by a computer we are adamant that he is not really “reading.”

**DD:** Reading researchers often state that a primary objective of reading is to understand, or travel with, an author. In practice what they usually mean is to understand an author through a process based on decoding print. Yet students with print disabilities can use text-to-speech or audio tools to understand, or travel with, an author without decoding printed text. They achieve the objective of reading while being labeled non-readers.

**DE:** If we expect students to use tools outside of school to navigate, manipulate, and manage information, it seems to me that we need a great deal more dialogue about the role of technology in augmenting human performance.

## Resources

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