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Distance education as disruptive technology

Michael Simonson
Nova Southeastern University, simsmich@nova.edu

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A disruptive technology or disruptive innovation is a technological innovation, product, or service that eventually overturns the existing dominant technology or product in the market. Disruptive innovations can be broadly classified into lower-end and new-market disruptive innovations. A new-market disruptive innovation is often aimed at nonconsumption, whereas a lower-end disruptive innovation is aimed at mainstream customers who were ignored by established companies. Sometimes, a disruptive technology comes to dominate an existing market by either filling a role in a new market that the older technology could not fill … or by successively moving up-market through performance improvements until finally displacing the market incumbents.…

By contrast, "sustaining technology or innovation" improves product performance of established products. Sustaining technologies are often incremental however they can also be radical or discontinuous. (as cited in Wikipedia, in Teets, 2002)

T hus, technological innovations might be categorized along a continuum, from sustaining to disruptive. In education, a sustaining technology might be a SmartBoard, which in most applications is a way to present information dynamically and efficiently—a sustaining upgrade to the chalkboard and overhead projector.

As a matter of fact, most attempts to integrate instructional technology into the traditional classroom are examples of sustaining technologies—computer data projectors, DVD players, e-books—all which "improve product performance of *estab-*
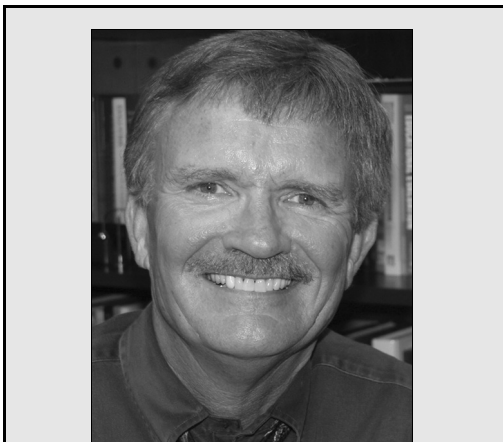
Michael Simonson, Editor, *Distance Learning*, and Program Professor, Programs in Instructional Technology and Distance Education, Fischler School of Education, Nova Southeastern University, 1750 NE 167 St., North Miami Beach, FL 33162. Telephone: (954) 262-8563. E-mail: simsmich@nsu.nova.edu

lished products." Most integrated technologies sustain, and do not disrupt.

On the other hand, distance education is certainly not a sustaining technology. Rather, distance education, virtual schooling, and e-learning are disruptive. For example, distance education is aimed at students (older, working, remotely located learners) who are "ignored by established companies" (traditional schools). Distance education presents a different package of performance attributes that are not valued by existing customers. Distance education has come to "dominate … by filling a role … that the older technology could not fill."

Clayton Christensen (2003; Christensen, Anthony, & Roth, 2004) has written extensively about the concept of disruptive technologies. Christensen's work has been widely embraced in business. His work helps explain why some established industries fail, and others spring up, seemingly from nowhere. No better example is the personal computer. Not a single mini-computer manufacturer has been a successful manufacturer of personal computers; they did not see the power of the new technology until others had captured market share.

Similarly, most in education have ignored the potential of looking at the ideas behind Christensen's theory, and how disruptive technologies might transform education and training.

In Florida, there is a mandate that every public school district must establish a virtual K-8 and K-12 school (Simonson, 2008). Many have wondered why Florida legislators would pass such a sweeping law. Perhaps the answer is disruptive technology. Whatever the reason for Florida to establish virtual schools, it is clear that distance education and virtual schooling are disrupting traditional education, and this may be a good thing. It might be a good idea for educators to become more cognizant of Clayton Christensen's work, and the power of disruptive technologies to change education.

And finally, Christensen likes to say that because of disruptive technologies these are "scary" times for managers in big companies. It is likely that because of distance education the next few years are going to be *very scary* for school superintendents, college presidents, and training directors.

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