Let's Rethink Online Learning

By Bryan Goodwin and Erika Twani

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Research shows that most online learning schools today aren't improving outcomes for their students.

Are there online learning environments that can actually help students flourish? If so, how might these environments differ from what we're currently doing?

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In less than two decades, online learning has expanded from virtually non-existent to nearly three million students in the U.S. taking classes, in whole or in part, online (Gemin, Pape, Vashaw, & Watson, 2015). By any measure, that's a significant shift, representing approximately 6 percent of the U.S. student population.

While some may applaud this shift as evidence that the digital age has finally brought disruptive innovation to staid public education systems, there's just one problem: Outcomes of online schools, on average, have been anemic. A sweeping nationwide study of 65,000 students enrolled in online programs across 18 states conducted by the Center for Research on Education Outcomes (CREDO) at Stanford University (Woodworth et al, 2015) compared the outcomes of online learners with "virtual twins" enrolled in traditional settings and found significantly poorer outcomes for students in online programs—equivalent to, on average, 72 fewer days of learning in reading and 180 fewer days of learning in mathematics over the course of a 180-day school year. As Dr. Macke Raymond, one of the study's co-investigators told reporters, the outcomes in mathematics weren't just *slightly* worse, but "literally as though the student did not go to school for the entire year" (Herold, 2015). Another 2015 report, this one from the National Education Policy Center (NEPC), which looked at numerous studies of online school performance, similarly found "serious questions about the effectiveness of many models of virtual schooling" (Molnar et al, 2015). The NEPC authors noted that a majority of studies to date "have found that full-time online students do not perform as well as their brick-and-mortar counterparts."

Online providers have taken exception to these findings; questioning, for example, whether it's possible to find "statistical twins" of students in online programs (as the CREDO researchers claimed to have done) because many students served through online classes were previously failing in brick-and-mortar schools. Yet that raises the question of whether it is acceptable to place struggling students, especially those who may lack good work habits or meaningful connections with adults, into environments that are even *less structured* and with *less personal connection* to adults.

So we might ask, then, are there online learning environments that can actually improve the outcomes of struggling learners? And if so, how might these environments differ from what we're currently doing in the name of online learning?

Envisioning a new model of online learning

To date, what many online programs seem to be doing is taking what wasn't working for students in face-to-face environments—dry classes with little personalization or meaningful adult interaction—

and putting it online. That's the bad news. The good news is that, as we report later in this paper, emerging research is showing that online learning *can* work for low-achieving students when it offers a true alternative to what they were getting (or perhaps *not* getting) in regular school settings.

That's not always easy to do. With any new technology, the impulse is often to envision it serving much the same purposes as the old technology. Take for example, the early days of the internet. AOL assumed people would want to access the web like television—as neatly packaged "channels" they could "surf." We now know, of course, that Google's simple search bar ultimately blew up that model as autonomous search became the modus operandi for accessing the web, allowing us to follow our whims and vagaries into the wild blue yonder of the internet.

A similar phenomenon may be at work with digital learning. Currently, most of it is packaged into Carnegie-unit courses, such as Algebra II, American Literature, and Physics—the learning equivalent of AOL shrink-wrapping the internet into channels. But what if we conceived of digital learning instead as something more akin to the Google search bar—something that could tap into the power of student curiosity and *launch* them into a world of challenging, personalized learning?

If we could do that effectively—recast online learning as a vehicle for personalization—what else might change?

Unleashing the true potential of online learning with personalization

For starters, it's quite possible that the entire enterprise of online learning could become far more effective. Some new studies are finding that personalized learning environments—those that use data to create student profiles and set personal learning goals, offering students multiple pathways to demonstrate learning, and provide flexible spaces for learning—are generating positive results, especially for low-income and minority students (Pane, Steiner, Baird, & Hamilton, 2015; Friedlaender et al, 2014; Ready, 2014). Just as the internet led to a proliferation of entertainment choices—we no longer have to listen to songs chosen by a radio programmer or sit down in front of the TV at an appointed hour to watch shows on a handful of networks—the real promise of digital learning may be in providing a platform for offering students real choices about what and how they learn and, in so doing, making learning more meaningful and relevant to them.

We know, in fact, from years of research that the power of student choice fosters motivation (Patall, Cooper, & Robinson, 2008) and accelerated learning (Hattie, 2009). And, contrary to what one might think, when we let students choose the level of difficulty for their learning, if they have ownership of their learning, they tend to opt for more, not less, challenging content (Kohn, 1999).

However, to date, personalization of learning has tended to focus only on one dimension of choice: *content*, and not *learning process*. As a result, we've been missing half of the picture—and perhaps most of the benefits—of personalized learning.

We might think of it this way: In non-personalized classrooms, students have few choices about *what* they will learn; every student learns pretty much the same *content* at the same time as other students in the class (e.g., the French Revolution, verb conjugations, trigonometry) and engages in the same

learning process at the same time (e.g., working problems, reading a chapter, writing a book report) and are often all assessed in the same way (e.g., an end-of-unit test).

Content personalization gives students choices over *what* to learn and *when*—allowing them, for example, to learn at their own pace or select a topic of interest related to the core curriculum. Nonetheless, assignments and demonstration of mastery tend to be similar—a research paper, a science project, an oral presentation.

Learning process personalization, on the other hand, lets students decide how to develop and demonstrate mastery of what they are learning (for example, what resources they will use to research, whether they will conduct a field study and write a report, conduct a scientific experiment, use a 3D printer to design a new product) and, most important, how they will use what they have learned in their lives, as shown in the table below.

Table 1: A continuum of personalization

	No personalization	Content personalization	+ Learning process personalization
Learning goals	Uniformly assigned to students regardless of progress	Assigned to students by teachers according to progress	Developed by students with guidance from educators
Content	Selected by teacher & assigned to students	Selected by students from content identified by teacher	Largely acquired by students through inquiry process
Teaching & learning	Mostly whole-group learning with some individual work	Students work independently, guided by teachers	Students guide learning with support from educators
Feedback & assessment	Uniform assessment of learning	Uniform testing & grading of completed assignments	Performance assessments with personalized criteria

It's worth noting that personalizing content and the learning process need not result in every student randomly pursuing their own interests with no regard to agreed-upon standards or high expectations for learning. Nor does it remove accountability from the learning process. Far from it. Standards still serve as the platform for personalization and teachers serve as important guides for learning. Indeed, learning begins with the standards in mind. But instead of providing students with only one path for learning and mastering standards, multiple paths become available to them. We might think of this as the 21st century approach to standards. Whereas the 20th century approach to standardization led Henry Ford to quip that customers could have cars in any color they liked so long as it was black, standardization in the 21st century—consider the common programming platforms of Android or iPhone—has led to a proliferation of choices.

Getting from here to there

Making this transition, like any disruptive change, isn't without challenges—starting with imagining a different kind of learning and developing teachers' abilities to deliver a different kind of instruction and student readiness to engage in more self-directed study. The experience of the Learning One to One Foundation, which has supported personalized and autonomous approaches to learning (in both face-to-face and virtual environments) for thousands of students in Colombia, Chile, Costa Rica, Mexico, Spain, and the U.S., is that making this transition isn't as difficult as one might think.

Typically, in a matter of months, educators and students begin to grasp the new personalized and autonomous ways of learning and, as they do, they increasingly view themselves as learners and grow more motivated and passionate about their learning. Soon, everything else gets easier—from behavior, to learning and guidance, to achievement. Often, after just a few months of adopting the new methods, students and teachers arrive at a better, deeper and more joyful way of learning.

Autonomous learning opportunities have long been reserved for gifted and talented students to encourage their creativity and curiosity. Following the Fontan Relational Education (FRE) model, the Learning One to One Foundation has found that nearly all students— regardless of social and economic background, culture, or nationality—are capable of self-directed learning. The FRE model customizes learning paths for students based on their abilities, interests, and preferred learning styles, personalizing both the *content* and *process of learning*. While receiving one-to-one guidance from educators, students develop personalized learning plans that specify how they will develop and demonstrate mastery learning. At all stages of the learning process, educators monitor their progress and deliver feedback.

> The Fontan Relational Education (FRE) is a personalized pedagogy model created by Spanish psychologists Ventura Fontan and Emilia Garcia.
>
> With FRE, each student is assessed on their knowledge, interests, and abilities and given a personalized learning plan based on that assessment. Students plan their daily, weekly, and yearly learning activities. To complete an area of study, students must develop a final project and demonstrate to their educators that they have mastered the content and can "relate" that content to their own lives.

According to data collected by the Learning One to One Foundation, the FRE model has had numerous benefits for students, including:

- greater reading comprehension, with 40 percent improvement in standardized tests of reading;
- accelerated learning, with 37 percent of students finishing an entire grade in just 60 percent of the school year;
- reduced dropout rates (down to 0.15%); and
- greater achievement with an Academic Performance Ratio—a combined measure of curriculum coverage, dropout and repetition rates, and students' learning pace—of 1.039 compared to 0.36 for the traditional education system (Twani & Fontan, 2014).

Powerful potential benefits

As noted above, personalization need not come at the expense of lower standardized achievement results. To the contrary, as students become more engaged in their learning, their achievement increases on standardized tests. Even more important, FRE has been shown to help students develop key "soft skills" needed for a global economy, including:

- **Self-directivity and planning**. As students learn to plan their own learning, including hourly and daily schedules, they become more autonomous and organized.
- **Real-world, problem-solving skills**. As all learning activities are designed around driving questions, students become proficient at seeking out and solving real problems for themselves and their communities.
- **Responsibility and accountability**. As students must demonstrate mastery of learning through their projects and work, they learn to accept the consequences of their own decisions and that sub-standard work is never "good enough."
- **Collaboration and teamwork**. As students develop their own expertise and mastery of key knowledge and skills, they also learn to seek out expertise from peers and teachers, and learn to work together to demonstrate mastery of their learning.
- **Critical thinking and curiosity**. As students ask and pursue driving questions, they become more adept at critical thinking and place greater value on their own curiosity.

This final benefit—helping students to become more inquisitive and curious about the world around them—may be the most important of all, as curiosity has been shown to have positive impacts on achievement, job performance, life fulfillment, relationships, longevity, and leadership potential (Goodwin, 2014).

Learn fast and fail forward

Over the years, many seemingly good ideas have come and gone, heralded with much fanfare only to wind up on the trash heap of history. Technology itself has produced, at best, only mixed results for learning. So it's understandable that some might view personalized online learning with some skepticism. Yet persisting with the current model of online learning, given its dismal results to date, could well be seen as the colloquial definition of insanity: doing the same thing over and over again yet expecting different results each time. Before we do further harm to hundreds of thousands of students, it's time we press the pause button on online learning, or find an entirely new way to deliver it.

We propose something akin to the latter. Personalized online learning seems to offer a plausible way forward. However, because of its newness, it lacks a proper evidence base. Gathering conclusive data about this (or any other innovation, for that matter) could take years, so how might we move ahead, while still exercising cautious optimism about a radically different approach to learning?

One way would be to engage in a process similar to what Silicon Valley companies have perfected—identifying a need, developing a beta solution, testing it, and improving it in iterative cycles. This

different approach to research, called design-based implementation research (DBIR), analyzes data in real-time to support the development of better approaches. Unlike scientifically based research (SBR), which aims to compare the effects of a stable intervention on an experimental group versus a control group, interventions aren't "locked down" for study with DBIR, but, rather, undergo iterative improvements, embracing the "messiness" of real-world contexts, continually finding what works and what doesn't and making real-time adjustments to improve implementation and results.

As it turns out, case studies of schools that have adopted personalized learning have found that they tend to embrace a fail-forward ethos (Halverson et al, 2015, p. 7). Leaders of so-called "Next Gen" personalized learning schools highlighted in another recent report (Mead, Schneider, Vander Ark, & Vander Ark, 2014) note that personalized learning is often a winding road and that requires experimentation; "The path hasn't always been clear," said one leader. "… we have taken many turns and U-turns, learning hard lessons along the way about what works in personalized learning" (p. 26). Ultimately, the complexity and innovative nature of personalized learning makes it difficult to pin down—or even study precisely—any one way to do it; rather, schools often must knit together borrowed ideas in an approach one leader described as "fail fast, iterate, fix it, keep moving" (p. 37).

Designing learning with users in mind

As Clayton Christensen and Michael Horn (2008) have noted, disruptive technologies typically start as an inferior product sold to the "non-consumers" in a given market. For example, the first customers of personal computers were parents and families who had no need for the enormous or expensive mainframe computers that were the mainstay of the computing industry in the 1970s. Over time, as technology improves (as it did with

Plugging into online personalization

Wondering where to begin with online, personalized learning? Consider these steps.

1. **Clarify your purpose**. Start with *why*— a clear vision for what will be different and *better* for your students with personalized learning and what attributes, such as curiosity and critical thinking, they could develop with better learning experiences.
2. **Build on bright spots**. Schools with effective personalized learning report borrowing heavily from others. Scan the environment (research and nearby districts for what's working) and don't forget the bright spots in your midst— where students are *already* engaged in personalized learning.
3. **Lead with questions**. When it comes to innovation, leaders often must rethink their leadership style by giving fewer orders and asking more questions to encourage experimental thinking and using data to test hypotheses: if we do *x*, then *y* will occur for students.
4. **Support collegial learning**. Personalized learning requires a significant shift for many teachers—from information purveyors to learning coaches. To make this shift, they need to learn from each other's successes and failures. Create time for collegial learning and sharing so everyone can go *farther* by going *together*.
5. **Use a *balanced* scorecard**. Preliminary studies of personalized learning suggest it helps students perform better on standardized achievement tests. Yet personalized can do far more than that; it can also encourage creativity, curiosity, critical thinking, and engagement. So don't forget to identify, measure, and report these valuable outcomes as well.

personal computers), it begins to eclipse the mainstream technology, as personal computers did with mainframe computers in the 1980s.

School systems have a similar group of non-consumers: drop-outs, which as noted earlier, comprise roughly one-fifth of all U.S. high school students. Surveys of these students find that their top reasons for quitting school are not feeling challenged or not seeing the purpose of their learning (Bridgeland, DiIulio, & Morison, 2006). When asked what would keep them in school, 81 percent of them say providing them with real-world learning.

To design a system of schooling to meet the needs of these end users, we shouldn't simply re-create what failed them in the first place. Rather, we should design and develop learning experiences that challenge them, help them see purpose in, and make real-world connections to, what they're learning. In short, we'd provide them with personalized learning opportunities.

But we shouldn't leave it at that. We should also study and continue to improve how to personalize learning, so that ultimately, we can disrupt what has become an outdated system of education and begin to offer *all students* a more effective way to learning—one that nurtures their curiosity, sharpens their critical thinking, and hones their problem-solving skills.

Online learning (at least as currently conceived) appears to be failing many students by replicating what has already failed them—a disengaging approach to learning that does little to spark their curiosity or interest in learning. Yet digital technology makes personalization of learning and tapping into the tremendous power of curiosity possible like never before. It's time we unplug from ineffective approaches to online learning and re-apply these platforms to deliver the kind of learning environments that poorly served students of today (and likely all learners of tomorrow) will need to succeed in an ever-changing world. ■

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