

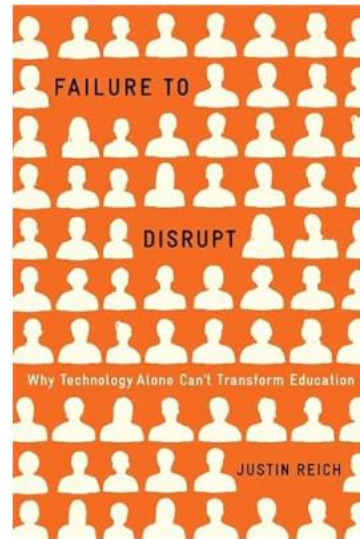
Reich, J. (2022). *Failure to disrupt: Why technology alone can't transform education.* Harvard University Press.

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Reviewed by Michael S. Jones
Illinois State University
United States

Educational technology, or edtech, has long been heralded as the equalizer of public education with the hopes of increasing students' learning and promoting equity and inclusion. Reich argues that edtech is simply the latest innovation to struggle with “basic obstacles that time and time again have tripped up the introduction of large-scale learning systems” (p. 6). *Failure to Disrupt: Why Technology Alone Can't Transform Education* differs from what might be considered a traditional edtech review. Instead, it criticizes our educational system and the remnants of its collision over different stakeholders' visions and goals. It asks the reader, if edtech is a tool, can it repair what is broken in our educational system? Many themes of this book can be summarized by his use of Ellen Lagemann's quote, “One cannot understand the history of education in the United States during the twentieth century unless one realizes that Edward L. Thorndike won and John Dewey lost” (p. 24). In contrast to Dewey's social constructivism, Reich argues that current educational policy embraces Thorndike's “instructionism” approach, which uses best practices and standardized testing to “fill the pails” of our students through the science of learning.



The common theme of disruptive technologies is examined at various scales and in different timeframes. If we are to enact meaningful education reform, what components need to be disrupted to challenge the status quo? While it is easy to associate disruption with only hardware innovations, such as interactive whiteboards, with low-cost 1:1 devices, progress in education has never been achieved only by purchasing shiny, new technology toys without professional development. Shifts in curriculum and assessment practices require meaningful changes. *Failure to Disrupt*, is separated into two distinct themes. At first, the reader is introduced to the concept of learning at scale, or how a system educates not just a school or district but potentially hundreds of thousands of learners. It is the role of those who monitor the learner's progress to define these three models of learning at

scale from an instructor, an algorithm, or the learner themselves. The later section focuses on dilemmas that can occur within these disruptive initiatives. Reich immediately dives in by introducing the reader to massive open online courses, or MOOCs. Over the past decade, these programs have been socially elevated by their uses in elite higher education institutions, such as MIT and Harvard, providing free to low-cost global access to their curriculum. These classes are carefully designed paths relying on learning management systems and the use of storefronts and autograders to enroll and track students' progress. MOOCs hold the illusion of addressing inequities by providing a standardized curriculum path, neglecting potential individuals' needs and funds of knowledge. This savior approach would have made Thorndike proud as the science of learning is featured as students move through a defined, linear path to progress toward the class objectives through standardized testing. This approach does not answer the question of what values and visions of learning are being standardized throughout their global use.

The second disruptive technology to learning at scale focused on algorithmic-based learning. Human instructors are no longer needed as this approach replaces flesh and blood with a mathematical formula using student data, from assessment scores and time on specific tasks, to promote or remediate curriculum individually. While MOOCs could be represented as a linear track as students progress through the curriculum, algorithmic-based learning is similar to an airplane's autopilot, making minor course corrections throughout the learner's journey to land safely at the final academic destination. This approach is more aligned with Thorndike's instructions as data is used to manipulate the learner's progression. In contrast, algorithmic-based learning can feel automated at scale like some modern healthcare trends where remedies can mindlessly be applied due to a set of parameters rather than a complete ailment diagnosis.

Algorithmic-based learning fails when it comes to two critical issues: uniqueness and depth of knowledge, as this model of instruction traditionally focuses more on rote content rather than deeper, higher-order thinking skills. While algorithms are designed around the average user attending the average school, equity concerns should be questioned as if the learner is only a digit in the learning algorithm. Is the learner a valid variable with their complexity of identity and knowledge? Or are these learning equations based on elements of whitewashing the curriculum for the average white learner? Reich reminds the reader, "No school district is average, and they are all unique in their way" (p. 74). While this approach has been the target for many Edtech innovations, such as game-based learning, Reich argues that studies have shown no dramatic increase in student learning.

One of the few successes at learning at scale has been peer-guided learning, where participants can serve as both learners and mentors by sharing their expertise. The term success might need an asterisk depending upon your alignment on the Thorndike/Dewey scale of education. These constructivist experiences can be seen in online communities focusing on creative tools like *Scratch*. Peer-guided learning focuses on situated learning, often seen in vocational settings, where novices learn through apprenticeship from a more experienced peer. These edtech tools often contain an element of novelty or

whimsy as they are frequently introduced through play. While the instructivist will often criticize the lack of formal structure and learning paths for learners, peer-guided learning showcases Dewey's constructivist vision of empowering learners as active participants. If learners are treated as equal stakeholders in their learning, meaningful disruption can take place.

The second half of *Failure to Disrupt* focuses on the dilemmas in learning at scale. Many of these dilemmas are issues through the educational system, not just in educational technology. Reich examines four areas in education where this system breaks down. In “The Curse of the Familiar,” Reich examines why change does not always happen as people “tend to teach how they were taught” (p. 130). This problem expands past the trap of the digital pencil to shifts in instruction and assessment practices happening at a glacial pace. It leaves the reader considering if past practices have inherent biases and how schools can create meaningful changes to curriculum and assessments to provide a more equitable environment. While time and professional development play a significant role, Reich suggests meaningful change happens through the school's community. This theme is continued through “The Trap of Routine Assessment,” which again pits Thorndike against Dewey as schools showcase their values through how and what they choose to assess throughout their curriculums. The author hints that if the school serves a function of career readiness, then does how we assess our students truly prepare them to compete in the near future workplace against artificial intelligence and automation?

In both “Edtech Matthew Effect” and “The Toxic Power of Data and Experiments,” Reich examines the inequity of our educational system. In this sense, the term toxicity is taken from cybersecurity and refers to the risk of possessing student data to the school and learner. In our current culture of data-driven decision-making and the ease of surveillance tools and assessment data, every student's clicks and keystrokes are often recorded on various company servers. As school policies demand uploading students' data ranging from health, achievement, discipline, and personal family information, are we allowing potential risk to our schools and learners by warehousing so many identifiable data points on each child? Do we feel different about our universities and employers archiving our own data? Can we even identify who has access to student and family data outside the walls of our school? As we think of data as a toxic liability, we should remember that data “privacy is not about something to hide. Privacy is about something to protect” (Zomrodi & Snowden, 2020).

Failure to Disrupt is not a call to action but a retrospective of edtech and the education system. Reich looks at the edtech novice with their hopes and dreams and replies, “been there, done that.” His tone is not of a technology cynic but of a wise grandmaster tutoring his reader to avoid the pitfalls of the past. Not all of the book is dark and grim. Reich acknowledges that the need is vast, but “when online learning works, it is beautiful” (p. 13). There are deep and meaningful learning practices that can only be done with technology, from allowing all students access to materials in a method they can consume to experiencing a global connection. Reich

reminds the reader, “While technology alone will not disrupt systems, technology can abet system change” (pp. 13–14).

Failure to Disrupt leaves the reader hungry for more of Reich's analysis of other educational aspects peripheral to technology. What would Reich's commentary on teacher evaluations and the increased use of technology to collect data on their performances? Is there a historical lens to examine educational policies on using artificial intelligence? What are, if any, the successes of edtech in early childhood education?

There is a sense of irony that the phrase “disruptive technology” originates from the business world, not education. Disruptive technology was first used to identify new markets for sales opportunities (Bower & Christensen, 2023). Sadly, educational technology is shifting away from universities and open-source initiatives to sales opportunities for the private sector. These companies are happy to fill the void, offering the next innovative quick fix from instruction to assessment. They frequently create a market to sell their tools to cure symptoms of unseen alignments while possibly neglecting the disease itself. School leaders with purchasing power need to heed the lessons throughout Reich's history of education throughout this book. Just as these arguments about the vision and goals of public education have been debated for over a century, leadership should still ask themselves if disruptive innovations are attempting to “fill pails or kindle flames” in our students (p. 233).

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About the Reviewer

Michael S. Jones teaches and learns at Thomas Metcalf Laboratory School at Illinois State University as a middle school science teacher. He was honored as Illinois's 2017 STEM Teacher of the Year by the Illinois Science Teachers Association. Michael received his BS in middle level education at the Illinois State University, focusing on science and mathematics education. He also holds two master's degrees, one in curriculum and instruction and one in educational administration and foundations. Currently, he is pursuing his doctorate, with a focus on middle school science education and identity.





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