



Failure to Disrupt: Why Technology Alone Can't Transform Education

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Volume 16, Number 1, 2022

URI: <https://id.erudit.org/iderudit/1088957ar>

DOI: <https://doi.org/10.22329/jtl.v16i1.7033>

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Publisher(s)

University of Windsor

ISSN

1492-1154 (print)

1911-8279 (digital)

[Explore this journal](#)

Cite this review

Johnson, L. (2022). Review of [Failure to Disrupt: Why Technology Alone Can't Transform Education]. *Journal of Teaching and Learning*, 16(1), 101–103.
<https://doi.org/10.22329/jtl.v16i1.7033>

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Book Review:

Failure to Disrupt: Why Technology Alone Can't Transform Education

By Justin Reich

Cambridge, MA, USA: Harvard University Press, 2020, 336 pages

ISBN: 978-0-0674-24966-0 (EPUB)

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Failure to Disrupt: Why Technology Alone Can't Transform Education (2020), written by Justin Reich, examines the relationship between technology and education. Reich frames this examination within different types of learning at scale and their challenges and lays the book out in two sections. In the first section, Reich defines learning at scale as an instructional environment where the ratio of learners to experts is such that there are many learners and few experts or instructors (Reich, 2020). Learning at scale is the most common learning environment in both K-12 and post-secondary educational settings and occurs anytime that there is not a one-to-one ratio of instructor to learner. Reich outlines the four different methods of learning at scale using technology: instructor-guided massive open online courses; algorithm-guided learning at scale; peer-guided learning at scale; and what he refers to as testing the genres of learning at scale—learning games. The second section of the book deconstructs the dilemmas related to learning at scale, which include the pace of change in education and equity issues related to technology. Reich also identifies that each learner has a different level of technical literacy; thus, it is challenging to develop technology-mediated learning without a standard set of competencies. Reich's research focuses primarily on new technologies entering the field of education that are marketed as being able to increase efficiency and improve learning, and his research lab at MIT studies technologies in learning-at-scale environments. The book has a distinctly North American lens. Moreover, although some information is partially transferable to a Canadian context, the work and research are primarily based on American schools. *Failure to Disrupt* is well organized and easy to read and follow at 336 pages.

Each of the four sections in the first part of the book examines a different Educational Technologies (EdTech) theme:

1. Instructor-Guided Learning at Scale: Massive Open Online Courses
2. Algorithm-Guided Learning at Scale: Adaptive Tutors and Computer Assisted Instruction

3. Peer-Guided Learning at Scale: Networked Learning Communities
4. Testing the Genres of Learning at Scale: Learning Games.

The themes are presented and then connected to their origins and history. Reich does a good job of positioning each of the themes within an American educational setting and describes their over-proposed and over-promised impacts on education. Reich joins other EdTech researchers who are critical of EdTech vendors, labeling them as “evangelists” (Reich, 2020). He uses this term throughout the book to denote vendors, manufactures, and advocates for technology who often proclaim that their technology will be responsible for a fundamental shift in education, which, as noted by Cuban (2001), has yet to happen.

Reich explores the historical implications of each of the four themes in the first section and uses a guiding question of “What is new here?” to determine if the method of learning at scale has brought something new to education or if it is simply a change in the type of tool being used to facilitate education. This part of the book is dedicated to identifying the trends in learning at scale and connecting contemporary trends to the history of learning and technology while articulating the complexity of the education systems in which these tools are deployed, all while building a case for the complexity of education. For example, Massive Open Online Courses (MOOCs) are likened to radio and television. Reich argues that access to knowledge is not going to cause a fundamental shift in the way we teach and learn. MOOCs, like television and radio, provide access but do not provide community and connections or bidirectional communication, the latter of which he contends is needed for learning to flourish. This analogy is extended to examine adaptive tutors as well as peer-guided learning at scale. These examples, while attempting to expedite education, fail to capture the real essence of teaching and learning as defined by Reich, which at its core is experiential and community-based, with interactions among and between learners and instructors. Reich argues that these EdTech examples are just the current tools of education, which are always evolving. For him, many tools that have come and gone in education have not resulted in any major shifts in the ways we teach and learn. He offers more nuance by separating science, technology, engineering, and math from the humanities in his analysis, concluding in the first part of the book that in the humanities in particular, technology cannot replace a teacher for pace, assessment, and guidance when it comes to teaching and learning. However, he concedes that EdTech may have the potential for a slightly broader impact where there are distinctly right and wrong answers that are more readily assessable by a computer, though he posits criticisms later in the book for EdTech in these fields as well.

In the second part of the book, Reich breaks down the four reasons why the methods of learning at scale identified in the first part do not make a significant impact on education despite the benefits touted by EdTech vendors. This argument is structured around the complexity of education and how intertwined the systems can be among teachers, administrators, learners, and tools. As the dilemmas are examined, it is evident, according to Reich, that learning at scale with technology will not disrupt education, as is often touted by the vendors and manufactures who have vested financial interests in the success of their products. The dilemmas examined are as follows:

1. The Curse of the Familiar
2. The EdTech Matthew Effect
3. The Trap of Routine Assessment
4. The Toxic Power of Data and Experiments.

Each of these four sections clearly states and explains what the dilemma is and provides clear examples, linking the dilemma to the genres of learning at scale presented in part one of the

book. Reich identifies “the curse of the familiar” as a new way of doing the same thing, and the “Matthew effect” as new innovation primarily benefiting those who are already privileged in some way. The “trap of routine assessment” is related to the inability of a computer to accurately assess learning that does not have an explicitly right or wrong answer, and the “toxic power of data and experiments” is of concern because many of the EdTech vendors are harvesting large amounts of data from these products.

Reich states that these dilemmas are impediments to change in education when the agent of change is technology. He does a good job of identifying and breaking down each of the four impediments and supporting his position with research data. He argues that education is a staunchly slow sector to adapt to change and that anything truly revolutionary will experience pockets of success, while small changes may occur. However, technology that is revolutionary will not be widely adopted unless it fits into the system teachers are already using without significant investments in change for the teachers. For example, the Matthew effect stipulates that when it comes to teaching and learning with technology, those who excel in this area are the first and most impacted by new technologies. In effect, the rich get richer.

In the first part of the book, Reich criticized computers as unable to replace humans for assessment tasks related to the humanities. Here he goes further to explicate the trap of routine assessments, noting computers can be easily tricked, as seen when they provide a positive assessment of a garbled paper. He also tackles head-on the challenges associated with a computer’s inability to conduct many forms of assessment in science, technology, engineering, and math. He acknowledges that computers can replace teachers for some tasks that involve assessing questions that have a quantifiable, computational, singular correct response, but he finds this limiting due to the ways computers lack in bidirectional communication. Reich finishes by discussing the challenges associated with the massive amounts of data collected through technology and who has access to it. How that access is governed as well as what the data should be used for pose significant concerns.

The book concludes with a prophecy that teaching and learning will very much continue to happen the way they always have and that educators are often cautious of change. It is not that change will not happen, but it will not happen quickly; change happens slowly in these complex systems. For these reasons, Reich argues quite successfully that technology alone cannot disrupt education and, in fact, education may not be in need of the disruption technology continues to promise. I contend that Reich’s argument is well supported. His analysis and in-depth look at these learning-at-scale models make a solid case for his position that tools come and go in education but the fundamentals remain grounded in personal relationships. Disruptions will continue to occur in education, and their impact may create a ripple effect that over time changes the way we teach and learn with EdTech, but it is unlikely that a new product or service will make an immediately significant impact to the complex system of education.

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