The Great Distraction
Technology and AI in Education

Kentaro Toyama
University of Michigan School of Information

Albert Shanker Institute
Artificial Intelligence in Education:
Is There A Silver Lining in the Dystopian Storm Clouds?
Washington, D.C. – February 12, 2020

“One long-term trend that’s working in our favor is technology. It seems to me that, in the internet age, the tendency to equate ‘education’ with ‘specific school buildings’ is going to be greatly diminished.”

“Technology is... a game-changer we desperately need to both improve achievement for all and increase equity.”

— Former Secretary of Education Arne Duncan (2012)
To what kind of school would you prefer to send your children? A school with…

a) No teachers, computers with AI  
b) Bad teachers, no computers  
c) Bad teachers, computers with AI  
d) Good teachers, no computers  
e) Good teachers, some computers with AI  
f) Good teachers, many computers with AI

Seattle’s Lakeside School

Very expensive.

Bill Gates was a student.

Every student has a laptop. Some of the software is AI-enabled.

*Parents still pay for additional tutoring.*

*The most important thing in education is good adult supervision.*
When did you first learn to use a computer?

a) Primary school age or younger  
b) Secondary school age  
c) In college or university  
d) At work  
e) Never

Good education is possible without digital technology.

Waldorf schools ban digital technology in classroom.

Finland: Low-tech, high PISA scores

Photo: Sanna Schildt; http://www.emersonwaldorf.org/
Imagine you are the CEO of a company that has a good product but is losing money. Which of the following would you do?

a) Replace the VP of Sales  
b) Implement a new sales strategy  
c) Provide better training for all sales staff  
d) Buy the latest iPads for all employees  
e) Tell employees to use the new AI add-on for Excel  
f) Turn on the AI features of your data center

*Technology doesn’t solve institutional problems anywhere.*
For the most part, technology only *amplifies* human forces.

For the most part, technology only *amplifies* pedagogical intent and capacity.

Impact of technology depends on policy makers, administrators, teachers, parents, and students.
For the most part, technology only amplifies pedagogical intent and capacity.

Impact of technology depends on policy makers, administrators, teachers, parents, and students.

Recommendations

- Focus on the basics.
- Focus on the basics.
- Focus on the basics.

- Consider AI only in contexts where…
  - The basics are in place;
  - Teachers want it; and
  - There is good evidence that the technology has educational value.

- Don’t expect AI to meaningfully address educational inequalities.

- Be skeptical of for-profit companies, especially if the product is free.
Summary

Technology amplifies underlying human forces.

AI is no different.

In education, consider AI only in cases where the basics are in place, teachers want it, and it has confirmed value.

Thank you!
toyama@umich.edu