



Changes in Schools Due to Technology

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Topic

Changes in Schools Due to Technology

Problematic Topic Because...

Changes in Society

Due to

**But what technology
are we talking about?**

Two very different
“technologies”
at play here!

Two “technologies” at play here!

Technology
in
Education

Two “technologies” at play here!

Technology
in
Education

Technology
of
Education

What's the Difference?

How many do you know about?

Wikipedia
Khan Academy
Smart board
eBooks
EdX

How many do you know about?

Mastery Learning
Reciprocal Teaching
Peer Instruction
Prescriptive Tutoring
Flipped Classroom

Technology *in* Education
beats

Technology *of* Education
in public recognition

Why?

Three main reason

#1

The Printing
Press

#2

Dissatisfaction
with schooling

#3

Marketing
\$\$\$

Some quotes are relevant here:

Thomas Edison in 1922, ***“I believe that the motion picture is destined to revolutionise our educational system and that in a few years it will supplant largely, if not entirely, the use of textbooks”***

Seymour Papert in 1984 predicted that ***“there won't be schools in the future....I think the computer will blow up the school”***

Computers: Oversold and Underused

Cuban in 1986 pointed out, “Radio, film, language laboratories, programmed learning machines, computer assisted-instruction, use of typewriters in the elementary grades—all have been promoted as revolutionizing instruction yet today seldom appear in most classrooms”. And after more than a decade of further research, he added, “When it comes to higher teacher and student productivity and a transformation in teaching and learning...***there is little ambiguity. Both must be tagged as failures. Computers have been oversold and underused***, at least for now” (Cuban, 2001, p.179).

Computers: No Significant Difference

Russell's meta research study shows involving different distance learning technologies and found “***no significant difference (NSD) in student outcomes between alternate modes of education delivery***”

So, what causes **significant improvements** in student learning outcomes?

Technology *of* Education

I'll talk about one in detail...

Mastery Learning
Reciprocal Teaching

Peer Instruction

Prescriptive Tutoring
Flipped Classroom

Peer Instruction (Eric Mazur's work)

Mazur (2009) ***“it is not the technology but the pedagogy that matters”***

S pre-reads the learning material before class

T talks about a concept (less than 10 mins) in class

T then gives a short conceptual MCQ on the subject being discussed

S thinks for 1 minute and give their answers via a “clicker” system

If less than 30% get it correct, T repeats the material

If more than 70% gets it correct, T explains the answer and move on

Most of the time, between 30%-70% gets it correct, and T asks the **S to discuss their answers amongst themselves**. T then mingles with the S to hear what they have to say. **After the peer discussion process (which would take several minutes), a new vote is taken and the process is repeated.**



Peer Instruction (Eric Mazur's)

Mazur (2009) *"it is not the pedagogy that*

Technology aids with data collection and presentation; but it's the pedagogy that leads to improved learning outcomes

...and move on
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rep...

And the rest briefly...

Mastery Learning
Reciprocal Teaching

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Flipped Classroom

Taking your questions now...

Thank you!