Breaking through the school productivity ceiling: the promise of education technology

Jeff Dieffenbach
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1. Unlike almost every other field of human endeavor, education has not seen productivity gains, and as a result finds itself in a perpetual funding crisis that fundamentally limits its ability to improve student learning.

2. Per pupil expenditure is an important measure of school productivity that—while admittedly not measuring relative education quality—has not increased over the last century or so. Take the teacher of the early 1900s, adjust that teacher's salary for inflation, factor in class sizes that if anything have gone down, and acknowledge that productivity has at best been flat.

3. Education technology that will deliver a combination of instruction, practice, and assessment has for years offered the promise of breaking the productivity ceiling.

4. One model is to allow students to work with engaging and effective technology in a relatively unsupervised setting while freeing up a smaller number of teachers (through normal attrition) to work with smaller groups where their expertise is most valuable.

5. Advances in the pedagogy underlying software content coupled with the evolution of hardware and infrastructure allow that promise to be realized within the next five years for any school district willing to pilot and then implement a technology-centric educational system.

6. These school districts have the potential to substantially alleviate their funding crises for at least the near and perhaps into the medium term.

7. To realize this success, a relatively narrow education technology path is necessary.

    a. The technology path cannot add operational costs in the form of IT staffing.

    b. The evolution of networks and network security are making school software implementations more rather than less complex, driving up the need for unacceptable IT staffing.

    c. Web applications (including "light" downloads with Web-stored data) get away from the expensive and not always reliable network model by putting the implementation burden on the software publisher and not the school district or its IT staff.

    d. To date, the relative unavailability of reliable-enough Internet connectivity has slowed the movement from network-based applications to web-based applications.

    e. However, the connectivity problem is diminishing reasonably quickly over time.

    f. The viability of Web applications will enable an education technology-driven school model that will improve outcomes and decrease cost. Print and software publishers that fail to embrace this model will lose importance over time as measured in single digit years.