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Philosophers of Education NEH Seminar

27 July 2016

<center>Philosophical Questions for the 1:1 Ed Tech Movement</center>

Rarely do local educational initiatives receive national media attention, but when they do, you can be sure the news will not be good. In 2013, the 1:1 program of the Los Angeles Unified School District (LAUSD) inspired headlines such as "The LA School iPad Scandal: What You Need to Know"[1] and "iHave a Dream: The Unanswered Questions behind LA's Ed Tech Fiasco."[2] Variously termed a "mess,"[3] a "debacle,"[4] and a "disaster,"[5] the ill-fated program had placed one iPad in the possession of every one of the LAUSD's 655,000 students.[6] This "Instructional Technology Initiative," with an estimated total project cost of 1.3 billion dollars, began in the fall of 2013. It was delayed after a couple of months due to hardware and software glitches, and was abandoned in its original form less than a year later.[7] The FBI began an investigation of the costly program at the end of 2104, and, finally, in the fall of 2015, Apple Computers and software provider Pearson agreed to pay cash settlements to LAUSD,[8] a sad coda to an ill-conceived public school initiative. Many educators have turned their attention to the

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[1] Gilbertson, Annie. "The LA School iPad Scandal: What You Need to Know." NPREd *Morning Edition* 27 August 2014. Retrieved from npr.org.

[2] Levine, Yasha. "iHave A Dream: the Unanswered Questions Behind LA's Ed Tech Fiasco." 29 Nov. 2013. Retrieved from https://pando.com.

[3] Herold, Benjamin. "L.A. iPad Program an Ongoing Mess, Evaluators Find." *Education Week*. Education Week Blogs. 03 Sept. 2015.Retrieved from http://blogs.edweek.org.

[4] Lapowsky, Issie. "What Schools Must Learn from L.A.'s iPad Debacle." Wired. 08 May 2015. Retrieved from http://www.wired.com.

[5] Kamenetz, Anya. "The Inside Story on LA schools' iPad Rollout: 'A Colossal Disaster.'" Digital/EDU. *The Hechinger Report*. 30 Sept. 2013.

[6] Gilbertson, Annie. "The LA School iPad Scandal: What You Need to Know." NPREd. *Morning Edition*. 27 Aug. 2014. Retrieved from npr.org.

[7] Ibid.

[8] Blume, Howard. "LAUSD to Get $6.4 Million in Settlement Over iPad Software." *Los Angeles Times*. 25 Sept. 2015. Retrieved from http://www.latimes.com.

LAUSD program in order to draw lessons for the future of ed tech. In a thoughtful article about this 1:1 experiment, Stanford Education Professor Larry Cuban concludes, "LAUSD experienced a perfect storm of mistakes in plunging into iPad without much forethought and a glance in the rearview mirror for earlier reform debacles in putting into practice a high-tech innovation." [9]

Educators would also do well to take a look in that rearview mirror for the lessons to be learned from the educational philosophies which have inspired reforms (debacles and otherwise) over the course of many decades. Thinkers as diverse as John Locke, W.E.B. DuBois, E.D. Hirsch, Bertrand Russell, John Dewey, Maria Montessori, William James, and Diane Ravitch (and their critics) can offer insight to school systems eager to implement innovations, including successful 1:1 programs. One such eager system is Baltimore County Schools, the district for which I work and the 25th largest district in the nation; it is in the midst of rolling out an ambitious 1:1 initiative called Students and Teachers Accessing Tomorrow (S.T.A.T.). Examining the aims of the 1:1 S.T.A.T. program in the context of educational philosophy may enable decision-makers, administrators, and teachers to foresee and overcome obstacles to better achieve the program's goals.

So what are the goals of the BCPS S.T.A.T. 1:1 initiative? They are comprehensive but can be narrowed down to five strands: to create "globally-competitive" high school graduates; to deliver "core content"; to promote "critical thinking"; to "personalize learning"; and to serve a "diverse population." All of this is to be accomplished in a "blended environment," in which students learn both from the computers provided for them and their teachers; this is described as "a complete 21st century technology learning environment."[10] The ideas behind the five goals of

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[9] Cuban, Larry. "A Second Look at iPads in Los Angeles." *Los Angeles Times*. 06 Dec 2013. Retrieved from https://larrycuban.wordpress.com.

[10] "S.T.A.T." Baltimore County Public Schools. Retrieved from http://www.bcps.org/academics/stat/.

the S.T.A.T. program will be familiar to students of educational philosophy, and we can learn much by revisiting the past, starting with the idea of the globally-competitive graduate.

For its definition of *a globally-competitive graduate*, BCPS has turned to an organization called Partnership for 21st Century Skills. [11] The so-called P21 skills are grouped in four general areas: core subjects and 21st century themes; life and career skills; learning and innovation skills; and information, media, and technology skills. The level of detail in the P21 list of particulars for each of these four areas exceeds Thomas Jefferson's astonishingly comprehensive recommended reading lists, which Jefferson thought could provide a young man with "a respectable, an useful, & satisfactory degree of knoledge."[12] As described, the successful BCPS globally-competitive graduate will have developed a very great body of information and a tremendous trove of useful skills for the 21st century. Many philosophers would agree with the underlying premise that a child must be educated for his or her place in the world. For example, *In Some Thoughts Concerning Education*, John Locke advised parents of rank to educate their sons in a practical way, for instance by emphasizing virtue and dropping the ancient Greek. He added, "And since it cannot be hoped he should have time and strength to learn all things, most pains should be taken about that which is most necessary, and that principally looked after which will be of most and frequentest use in the world."[13] A key difference between Locke and the S.T.A.T. program is that the former was confident of the gentleman-student's future role in the world, and the latter seeks to ready *every* child for *any* role in the world. Whereas the goal of offering unlimited opportunity is admirable, John Locke and others might counsel BCPS to ask whether it were wise to work with students and families to determine their desired educational goals. W.E.B. DuBois, who

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[11] "Framework Definitions." Partnership for 21st Century Skills. Retrieved from http://www.p21.org.

[12] Jefferson, Thomas. Letter to John Minor, 30 Aug. 1814, including Thomas Jefferson to Bernard Moore, [ca. 1773?] Retrieved from http://founders.archives.gov

[13] Locke, John. *Some Thoughts Concerning Education*. §94.

objected strongly to curricula that limited students by being "unnecessarily narrow"[14] advocated educating individuals differently as befitted their diverse talents.[15] Trying to provide all things to all people—even with the power of a computer—is likely a recipe for failure.

Another goal of the BCPS 1:1 program is to deliver core content. All Maryland schools, including BCPS, have adopted the Common Core State Standards (CCSS), so presumably these standards inform the core content that is to be delivered in the blended learning environment. The CCSS state that by "reading texts in history/social studies, science, and other disciplines, students build a foundation of knowledge in these fields that will also give them the background to be better readers in all content areas. Students can only gain this foundation when the curriculum is intentionally and coherently structured to develop rich content knowledge within and across grades."[16] The goal of a content-rich education is applauded by contemporary education commentator E.D. Hirsch. In *The Schools We Need and Why We Don't Have Them* (1999), Hirsch argues, "…higher-order thinking requires both breadth of factual knowledge and points of depth…The best tool for higher-order thinking is intellectual capital—that is, to know a lot, not just facts but also the domain-appropriate procedures and strategies for dealing with them."[17] Computers, used well, would seem to be great tools for sharing factual knowledge, and so BCPS can likely count on better-than-ever access to "intellectual capital." But one could argue that the "procedures and strategies" Hirsch cites are not as easily learned online. Hirsch might warn that one danger of a 1:1 method of teaching content is that it might, unless paired with an excellent, specific curriculum and a sound teacher, devolve into an entertaining dispensing of facts without subsequent thought or the "abstract knowledge" which Bertrand Russell says "makes a civilized

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[14] DuBois, W.E.B. "Of Mr. Booker T. Washington and Others." *The Souls of Black Folks*. p. 35.
[15] Ibid.
[16] Retrieved from http://www.corestandards.org/ELA-Literacy/CCRA/R/
[17] p. 158.

community possible."[18] This "abstract knowledge" might also be called "critical thinking," and it, too, is a goal of the BCPS 1:1 program.

The third of the five goals of BCPS's 1:1 initiative is to promote critical thinking. "Concrete knowledge is pleasant to most children," writes philosopher Bertrand Russell, "….But abstract knowledge is loved by very few…." He adds that getting students to think requires "some method of causing children to behave in a manner which is not natural to them."[19] How to promote critical thinking is an even more difficult question than its natural antecedent: what *is* critical thinking? A satisfying answer to both is provided by philosopher John Stuart Mill who, in his autobiography, describes the effects of one classic technique:

> The Socratic method of which the Platonic dialogues are the chief example, is
> unsurpassed as a discipline for correcting the errors, and clearing up the
> confusions incident to the [intellect left to itself] …. The close, searching *elenchus*
> by which the man of vague generalities is constrained either to express his
> meaning to himself in definite terms, or to confess that he does not know what he
> is talking about; the perpetual testing of all general statements by particular
> instances; the siege in form which is laid to the meaning of large abstract terms,
> by fixing upon some still larger class-name which includes that and more, and
> dividing down to the thing sought – marking out its limitations and definition by a
> series of accurately drawn distinctions between it and each of the cognate objects
> which are successively parted off from it – all this, as an education for precise
> thinking, is inestimable….20

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[18] Russell, Bertrand. "The Negative Theory of Education."

[19] Ibid.

[20] Mill, John Stuart, qtd. in "John Stuart Mill: On Instruction, Intellectual Development, and Disciplined Learning" by Linda Elder and Rush Cosgrove. Retrieved from http://www.criticalthinking.org.

Socrates, we recall, had no computer, and it is difficult to imagine how the thinking skills Mill describes could be gained without the questioning of a skilled and challenging teacher. A laptop could certainly be used for research, or to record or assess critical thinking, but a question worth considering is whether a 1:1 program implemented without strong teaching will have any effect on students' abilities to think critically.

Personalizing learning is an additional goal of the S.T.A.T. program. Here's the BCPS explanation for how a computer "device" will personalize education in our public school classrooms:

> When students each have access to their own device, robust digital content and
> tools are at their fingertips and empower them to make decisions about, or
> personalize, their learning. Students have options as to how they can learn a skill
> or concept and how to demonstrate they've learned it.

In this description, students have been given access and choice insofar as they may choose their preferred medium of learning and of assessment. Personalization also will require that BCPS teachers play a supporting role in the classroom:

> In a learner-centered classroom, teachers are facilitators - or guides - in the
> learning process. They provide tools and support to each student based on his or
> her learning needs. As a device becomes available to every student, teachers can
> provide access to digital resources tailored to students based on their current level
> of understanding, learning styles, and personal interests.

Progressive educators such as John Dewey also championed student choice and a guiding role for teachers. In an oft-quoted line from *Democracy in Education*, Dewey adjures teachers to

"give the pupils something to do, not something to learn; …learning naturally results."[21] The role of the teacher, in Dewey's view, is to set up the conditions for active learning, the same optimistic plan of BCPS. Progressive educators would also applaud the primacy given by BCPS to what Dewey calls the "the child's capacities, interests, and habits"[22] Dewey thought education should be "active, expressive, and self-directing."[23] Not everything in the BCPS plan, however, would meet with the approval of a true Progressive. Dewey's quotable "something to do" is followed by his warning to the teacher: "…it is indispensable to discriminate between genuine and simulated or mock problems."[24] Of course, Dewey never could have imagined the kinds of computer simulations now available, but putting semantics aside, his point is worth considering-- on the laptop, is the child working on a real-world problem of spontaneous interest grounded in his or her own experience? For that is the only kind of "something to do" will result in learning, according to Dewey. Moreover, who is defining the "learning needs"—the student, the teacher, or the curriculum? In other words, Dewey might warn implementers of 1:1 reforms that personalization cannot be both fake and successful. He might ask: Do there exist sufficient, real-world-based, "robust"[25] digital resources to serve each child? And how will we be able to ensure each teacher will be able to provide the resources and tools desired by each child? Educator Maria Montessori created not only her own system of schooling but also a great number of classroom materials that have "self-correction and self-assessment" build into their designs.[26] Today, correction and immediate feedback could also be provided for students using computer software. Montessori, a quasi-Progressive, saw great value in student freedom within limits, so

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[21] p. 181.
[22] Dewey, John. "My Pedagogic Creed."
[23] Dewey, John. "The School and Society."
[24] Dewey, John. *Democracy and Education*.
[25] "S.T.A.T." Baltimore County Public Schools. Retrieved from http://www.bcps.org/academics/stat/
[26] "Benefits of a Montessori Education." American Montessori Society, 2016. Retrieved from http://amshq.org.

she might approve of some use of computers in the classroom, provided the content is well-designed and students are pursuing their own interests.

Dewey and the Progressives were not without their critics, and those critics might also call attention to potential issues of personalization in the implementation of a 1:1 program. Historian Richard Hofstadler, while celebrating Dewey's efforts to reform a formerly "dismal" conservative pedagogy, points out that the danger of a learner-centered school is "above all its tendency to dissolve the curriculum."[27] Hofstadter's criticism could well make one wonder whether the myriad skills and knowledge required of the globally-competitive P21 graduate can be instilled fully if each child is working at his or her own pace, in accordance with his or her preferred style, and within the confines of personal interest. On the face of it, probably not. BCPS might reexamine the practicality of fully personalizing education through the power of computing. But some thinkers would point out that failing to personalize for every student is not necessarily a bad thing; sometimes the skill of the teacher is needed to create interest and motivation to learn specific material. In *Talks to Teachers*, philosopher William James acknowledges that "some objects are natively interesting and in others interest is artificially acquired" (46) and he advises teachers that everything "not interesting in itself may become interesting through becoming associated with an object in which interest already exists" (47). To create these associations, a teacher must be knowledgeable, adept, creative, and in such situations perhaps a little more than "a guide on the side."[28] The back-and-forth of philosophical debate over the course of American educational history suggests that the dual aims of the 1:1 program to provide core content and personalize leaning may be somewhat at odds. BCPS policy makers might also ask whether it is

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[27] Hofstadter, Richard. "The Child and the World."*Daedalus.*Vol. 91, No. 3, Current Work and Controversies—2 (Summer, 1962), pp. 501-526.

[28] King, Alison. "From Sage on the Stage to Guide on the Side." *College Teaching.* Vol. 41, No. 1 (Winter, 1993), pp. 30-35.

possible to find and articulate a middle position—somewhere between traditionalism and progressivism—rather than aspire to achieving the visions of both.

Finally, and perhaps most interestingly, with the 1:1 S.T.A.T. initiative, BCPS intends to close the equity gap by serving the system's diverse learners. Similarly, the Los Angeles Unified School District made ambitious claims about the power of a 1:1 ed tech initiative to close the achievement gap. The LAUSD superintendent, John Deasy, who championed the system's 1:1 conversion, called it "a civil rights issue." He told the *Los Angeles Times*, "My goal is to provide youth in poverty with tools that heretofore only rich kids have had. And I'd like to do that as quickly as possible."[29] The presumed link between computers in the hands of disadvantaged students and equity is described on the BCPS website:

> The relationship of Equity to S.T.A.T. is a critical one. Baltimore County Public Schools is committed to move teaching and learning into the future by facilitating equitable access for all students regardless of race, special education status, gender, ethnicity, sexual orientation, English language Learner (ELL) status, or socioeconomic status. In 2014 the Board of Education…declar[ed] their commitment to raising achievement for all students and closing achievement gaps. S.T.A.T. is the lever in which BCPS is actualizing that commitment. Learner-centered environments along with personalized learning through technology better meet the needs of individual students to raise achievement and close gaps.[30]

This statement implies that "equitable access" (presumably access to the computers and the Internet) will help close what is called the "technology gap"—more on that below. Also, this

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[29] Blume, Howard and James Rainey. "Supt. Deasy's Early and Avid Support of iPads Under Intense Scrutiny." *Los Angeles Times*. 4 Sept 2014. Retrieved from http://www.latimes.com.

[30] "S.T.A.T." Baltimore County Public Schools. Retrieved from http://www.bcps.org/academics/stat/

policy statement suggests that by using the computers to personalize each student's learning, the needs of each individual will be met which will result in higher academic achievement "and close gaps." That last bit, one could argue, is based on a faulty assumption, the premise that increased achievement will close a gap in achievement. Although raising achievement is a necessary condition for closing the achievement gap, it is not a sufficient condition. (If all children achieve more, might not there still be a gap?)

Historian and educational critic Arthur Bestor asserts in "The Distinctive Function of the Schools" that "Problems of tremendous magnitude…are created by any wholesale transfer of functions from one group of social institutions to another." (To illustrate, he offers as a cautionary example the establishment of a theocracy.) Although there is necessarily overlap in the functions of institutions (such as home, religion, and business), Bestor argues that the "primary function of the educational system is to furnish intellectual training…." [31] Following Bestor's logic, an educator might recognize problems that have been created by the expectation that schools can solve the problems of poverty, a transfer of the function of government to the schools. Bestor might warn that efforts to close the equity gap with any educational initiative, including a 1:1 initiative, would be misplaced. Likewise, education writer and former policy-maker Diane Ravitch might tell reform-minded school systems that "there are countless studies that demonstrate the link between income and test scores"[32] and ask them to moderate their expectations and claims for any reforms that fall short of directly addressing the ills of poverty (by providing prenatal and infant nutrition, opening health clinics in schools, and sending more

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[31] Bestor, Arthur. "The Distinctive Function of the Schools."
[32] Ravitch, Diane. "The Myth of Charter Schools." *The New York Times Review of Books*. 11 Nov. 2010.

and younger children to preschool, for instance).[33] In short, BCPS leaders might question whether it is possible to close the equity gap through any school-based initiative.

There is one gap that may be addressed successfully by a 1:1 program: the aforementioned technology gap. According to a report from the Stanford Graduate School of Education, affluent students are much more likely to own computers and use the Internet, as compared to their low-income peers and students of color. When polled, most (56%) teachers in high-poverty schools reported that their students' lack of access to technology posed a problem in the classroom.[34] This will ring true to many teachers who wish that all of their students could watch tutorial videos, do research, or check grades online while at home. (As a side note, the report also describes specific schools' successes in leveraging thoughtfully-used, school-based technology to aid students who are at risk of failing or dropping out of school due to personal factors such as pregnancy and homelessness and/or academic factors such as limited English or credit deficiencies.)[35] On the other hand, a Duke University study of a million disadvantaged middle school students who were given laptops use at home as well as at school found that these students experienced "persistent declines in reading and math scores."[36] How and when students use computers are questions that should be answered before the first laptop is handed out.

The works of philosophers of education, even if they do not provide practical plans for how best to educate our students today, suggest many questions that should be considered before districts invest planning, money, and hope into a new reform such as 1:1 learning. These questions include: Should all students learn the same content? How can schools best develop

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[33] Denby, David. "Public Defender: Diane Ravitch Takes on a Movement." *New Yorker*. 19 Nov. 2012.

[34] "Technology Can Improve Achievement Gaps, Improve Learning." 10 Sept. 2014. Retrieved from https://ed.stanford.edu/news/.

[35] Darling-Hammond, Linda; Zielezinski, Molly B.; Goldman, Shelley. "Using Technology to Support At-Risk Students' Learning." Alliance for Excellent Education and Stanford Center for Opportunity Policy in Education Retrieved from https://edpolicy.stanford.edu/publications/pubs/1241.

[36] Pinker, Susan. "Can Students Have Too Much Tech?" *New York Times*. 30 Jan. 2015. Retrieved from http://www.nytimes.com/2015/01/30/opinion/.

critical thinking skills? Is true personalization desirable or practical, even with the constant aid of a computer? Will students learn better if the teacher becomes a navigator rather than a pilot? Are the currently available computer-based materials adequate to achieve broad educational goals? Can any education reform erase socio-economic disparities among students?

To all of these questions, enthusiasts of the ed tech movement might answer,"Yes!" and "With computers!" As with countless reforms that have gone before, the 1:1 movement has its disciples, those who believe that the kingdom of the computer is at hand and that salvation for all students cannot be far behind. Diane Ravitch cautions that "If there is a lesson to be learned from…the education disputes of the twentieth century, it is that anything in education that is labeled a 'movement' should be avoided like the plague."[37] But there iss an alternate lesson to be learned, this one from Hegel's theory of the dialectic, easily applied to the history of education: each educational movement emerges as the answer to the weaknesses of the preceding movement and attempts to solve its problems, yet each movement contains its own weaknesses, creating a never-ending cycle of reform. This view could be called cynical, but for the truth that we live with the valuable synthesis of all of our past educational movements, without which we would not have public, integrated, co-ed schools, or kindergarten, or the world's greatest university system, or many of the attitudes and practices that once seemed injudicious and now seem inviolable.

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37 Ravitch, Diane. *Left Back: A Century of Failed School Reforms*. 2000.