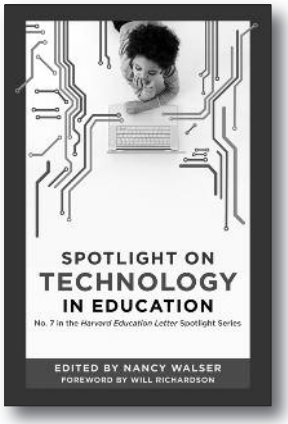

Viewpoints on Progress of Technology in the Schools

Book Review:
Nancy Walser, Editor. ***Spotlight on Technology in Education.*** *Harvard Education Press; 122 pages; 2011; $19.95 (hardcover, $39.95).*

Reviewed by Bob Pearlman

The Harvard Education Letter (HEL) has made a valiant effort over the years to chronicle how new technology applications are impacting education. *HEL* has assembled the best of these articles from 2005 to 2011 as chapters in a slim new book, *Spotlight on Technology in Education*.

Will Richardson's Foreword sets out the promise of technology today: Students "need to be learners, solving real problems, creating new knowledge, and sharing and reflecting on those experiences with others. Unfortunately, that's not what the vast majority of our current schools are about."

Colleen Gillard launches the volume with a 2007 chapter, *Better Teaching with Web Tools.* She quotes Richardson from his book, *Blogs, Wikis, Podcasts, and Other Powerful Web Tools for the Classroom: Web tools,* says Richardson,

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"demand a whole new pedagogical approach. Information literacy should not be viewed as a technology curriculum separate from course curriculum, but more as a way to reconceive teaching and learning." Gillard then offers a series of innovative examples of teachers using these Web 2.0 tools in their classrooms, but fails to take Richardson up on his challenge to "reconceive teaching and learning" through a new pedagogy. Instead the reader is left only with ideas on how to use technology to create some better learning activities as a teacher in the classroom.

Projects or Project-Based Learning? In her 2008 chapter, *Teaching 21st Century Skills,* Editor Nancy Walser similarly describes some innovative classroom projects that require students to utilize 21st Century Skills. Walser further articulates the challenge for accessing these skills. "Typical multiple-choice tests," she writes, "can't be used to measure things like teamwork." Walser is right, of course, but she fails to provide readers here with any examples of classroom-based assessments that measure the 21st Century Skills.

This is a consistent failure throughout the book. Technology is shown in numerous examples to enable interesting classroom projects. However, there is a profound difference between classrooms that do some projects or activities, and those that systematically do projects or project-based learning (PBL). And similarly there is a huge difference between schools where some projects are done and schools where all classrooms systematically do projects and are assessed on both content and 21st Century Skills. In the latter, a new culture of "students at work" and "students as self-directed learners" takes hold.[i]

Technology and Assessment: Standardized Tests and Classroom-Based Performance Assessments. Rothman's three chapters on assessment, all from 2010, form Part 2 of this volume, *Technology and Assessment,* and describe well the current state of online testing, game-based testing, and the new state tests of Common Core standards promised for 2014 by the Partnership for Assessment of Readiness for College and Careers (PACC) and Smarter Balanced Assessment Consortium (SBAC).

Rothman explores the potential of game-based assessments in Chapter 7, but oddly misses the potential of problem-based assessments, such as the Collegiate Learning Assessment (CLA) and its high school version, the College and Work Readiness Assessment (CWRA). These problem-based tests "require students to analyze complex materials and determine the relevance to the task and credibility. Students' written responses to the tasks are evaluated to assess their abilities to think critically, reason analytically, solve problems, and communicate clearly and cogently."[ii]

As recent as these assessment chapters are, they miss some important new developments, such as new test development being undertaken by the CWRA, the AP College Board, and the Programme for International Student Assessment (PISA), PISA for schools. All of these include or plan performance-based assessments that assess 21st Century Skills.

The *HEL* authors focus on national and state exams that are given once a year and rarely play any role in helping a student understand how they are doing and miss the potential and effectiveness of classroom-based performance tasks. By contrast, good classroom-based performance assessments like those at New Tech schools or the excellent assessments in the Catalina Foothills School District (CFSD, Tucson, AZ), the district highlighted by Walser in Chapter 4, are much more effective in supporting student learning. CFSD has systemwide grade-appropriate rubrics for each of the dozen 21st Century Skills that form the district's shared student learning outcomes. Students are able to see the rubrics and see both how they are doing and what they need to do to improve their performance. This encourages, as at New Tech schools, student self-directed learning and motivation.

Spotlight on Technology in Education concludes with four chapters on *Technology and School Improvement,* originally published from 2008 to 2011. These cover important topics such as 1–to–1 laptop programs, virtual learning, and emerging hybrid schools.

Leveraging Technology for Learner-Centered Schools. Author Colleen Gillard quotes Fisler School (K–8 school in Fullerton, CA) principal Jackie Pierce, who believes that laptops promote "self-directed, project-based, and collaborative learning." Laptops do "promote" that, but even more so "self-directed, project-based, and collaborative learning" provides the pedagogical context where technology tools come to life and enable students to be effective producers and communicators of knowledge and collaborators with peers and external experts and mentors.

Gillard points out the great potential for 1–to–1 programs and the need for districts to not "skimp on professional development." But professional development on what? Tool use or curriculum integration? And what kind of curriculum? Gillard doesn't say.

CFSD is here again a trailblazer. Having spent the years 2005 to 2009 engaging all teachers in development of curriculum and assessments for 21st Century Skills, in 2009 CFSD ramped up its technology implementation and hired six exemplary teachers as Curriculum Technology Integrators (CTIs) to coach and support current teachers in using technology to support 21st Century Learning and work with Learning Technology Teams at every school site.[iii]

In the heady early days of educational technology, in the 1980s, technology was often trumpeted as a "Trojan Horse" that would launch educational transformation. Instead, such developments hit roadblocks everywhere that traditional curriculum and assessment held sway. The same was true of 1–to–1 programs. In Australia, where such programs were prevalent by the early 1990s, a report in the year 2000 that reviewed research on technology implementation in that country concluded that curriculum and pedagogy must change significantly to capitalize on the potential of technology: "That technology in and of itself will not solve the problem, but that its use must be accompanied by a pedagogical revolution. Until IT is more commonly used for educational practices that are constructivist and problem-based, locally relevant and critical, it has little hope of fundamentally changing patterns of student outcomes and achievement."[iv]

Getting a Better Blend for Blended Learning/Hybrid Schools. In Chapter 11, *Hybrid Schools for the iGeneration,* first published in the March/April 2011 issues of *HEL*, Brigid Schulte tells the story of the handful of new schools that combine "bricks" and "clicks," including Carpe Diem (Yuma, AZ)

and Flex Academy (San Francisco, CA). There is clearly a new development here in these "hybrid" schools, as well as a huge emerging hype around blended learning and hybrid schools. But are any of these schools getting the blend right? Online computer-based learning is not new and has found a niche in exotic subjects and in home schooling. But expanding online learning to 50% of the school day and using the rest for traditional instruction is not a likely formula for student success.

Hybrid Schools will need a better blend, just as bricks and mortar schools need to move toward more student-centered 21st Century Learning. One such promising exemplar is the USC Hybrid High School (HHS), scheduled to launch in Los Angeles in 2012; USC Hybrid High is headed by David Dwyer, the first holder of the newly endowed Katzman-Ernst Chair in Educational Entrepreneurship, Technology, and Innovation at USC and formerly Director of Educational Technologies at Apple Computer and leader of the Apple Classrooms of Tomorrow (ACOT) project. Dwyer also was Chief Academic Officer at Apex Learning from 2002 to 2007, where he led the development of an award-winning, four-year high school core curriculum in math, science, language arts, social studies, and world languages, as well as several elective courses. Based on Dwyer's unique experience to design the right blend of online learning and innovative classroom learning, HHS describes its curriculum, or "blend," as "Online delivery of self-paced academic core courses AND collaborative, experiential learning in the school and its community.[v]

One huge omission in this volume is any mention of online learning platforms. This is probably due to *HEL*'s US-centric perspective. In England, by contrast, where technology implementation has surpassed the US in the past few years, online learning platforms, which support teachers and learners with collaboration, communication, and content tools, as well as providing students with an online personal learning space, are prevalent in schools and local education authorities. These learning platforms (Moodle, StudyWiz, Glow Scotland, edmodo, New Tech's Echo) build and support communities of learners.

Conclusion. *Spotlight* is a valuable and worthwhile read for teachers and educational policymakers. It gives a good sense of the key issues and trends in technology in education over the past five years. While the reader, and this reviewer, can identify shortcomings in many of the pieces, these only point to the key issues that *HEL* and the rest of us need to take up over the next few years, particularly the need to get curriculum and assessment learner-centered[vi] in order to fully exploit the power of educational technologies. □

Notes

[i] Pearlman, B. (2009). Making 21st century schools: Creating learner-centered schoolplaces/workplaces for a new culture of students at work. *Educational Technology, 49*(5), p. 14.

[ii] See *http://www.collegiatelearningassessment.org/* .

[iii] See *http://www.bobpearlman.org/Learning21/Catalina_foothills.htm* .

[iv] DRAFT New Basics Technical Paper, Version: 3 April 2000, Education Queensland; *http://education.qld.gov.au/corporate/newbasics.html/library.html#techpaper* .

[v] See *http://uschyridhigh.uscannenberg.org/?page_id=2* .

[vi] Watson, S. L., & Reigeluth, C. M. (2008). The learner-centered paradigm of education. *Educational Technology, 48*(5), 42–48.