Annotated Bibliography


Stephanie Bell provides a thorough account of project-based learning. According to Bell, project-based learning is

... a student-driven, teacher-facilitating approach to learning. Learners pursue. Knowledge by asking questions that piques their natural curiosity. The genesis of the project is an inquiry… Discoveries are illustrated by creating a project to share with a select audience… Student choice is a key element of this approach. (p. 39)

Citing numerous examples, Bell states that standardized testing does not adequately measure 21st-century skills: "We must shift our thinking about assessment when teaching 21st-century skills. With problem-based learning, assessment is authentic. “We measure a child's performance via rubrics, but a critical aspect of this model includes self-evaluation and reflection” (p. 43). Bell offers results from several studies indicating that problem-based learning is as effective as, or more, then traditional teaching and assessment methods. A key to problem-based learning, according to Bell, is the element of learner choice and differentiation. This affords students the opportunity to pursue their interests, and “… allows students to soar and learn at their own levels” (p. 41). Furthermore, learners can use a range of tools resources such as technology to conduct research, and “… they also choose individual ways to demonstrate their learning in their final product” (p. 41). As a result, "They become able to make better choices, whether relating to process, environment, or outcome, which enables them to become more independent and responsible for their own learning” (p. 41). This is an excellent article and a good resource as it supports the tentative thesis of my research paper: Educational reform aligned with 21st-century learning environment frameworks is needed. Educational technology can support this. However, educational technology implementation does not necessarily equate with 21st-century learning; 21st-century learning requires a major epistemological shift away from traditional educational practices. Problem-based learning is the de facto methodology of a 21st-century learning environment. Bell
provides a comprehensive description of problem-based learning and a compelling argument for its use.


Bennett and Maton observe that

> The idea that technology changes our lives profoundly is so ubiquitous in public discourse it has become almost cliché… Often, such claims convey a sense of urgency, press[ing] us to keep up with changes and raising concern that some in our societies are being left behind. (p. 324)

The authors clarify that the very same phenomena have occurred repeatedly since the late-19th century. Bennett and Maton contend that there is no consensus as to what effects digital technology has on young people. Contrary to popular believe, large-scale surveys indicate that with the exception of social networking, many students are unfamiliar with typical Web 2.0 tools such as blogs and wikis. Research suggests that

> … Rather than being a homogenous generation, there is a diversity of interests, motivations and needs. So while so it me young people might be regarded as ‘digital natives’, these are by no means characteristics shared by all young people simply because of their exposure to digital technologies. (p. 325)

Consequently, educators must be careful about assumptions regarding the extent to which the interests, values and skills of everyday technology use can be transferred to academic settings. Bennett and Maton stress that "Much of this discussion de-privileges education, teachers and knowledge, while valorizing the proclaimed attributes of the tech savvy student" (pp. 3-5). The authors emphasize that we must move beyond simple dichotomies such as ‘digital natives’, drawing on, for example, theories of knowledge and sociology of education: "The most useful stance therefore is to strive to understand what knowledge and assumptions students bring to academic contexts from other aspects of their lives, and what that means to teaching and learning" (p. 326). This paper supports the argument that it is presumptuous to rely on preconceived ideas of how young learners understand and utilize Internet technology.
It is also interesting to find literature that questions assumptions that appear to be largely taken for granted. My experiences with young learners reflect this issue; it is a mistake to assume that all young people are conversant with technology as it pertains to the classroom.


The Partnership for 21st Century Skills (P21) was founded in 2005 “… as a vehicle for pedagogical and curricular change” (p. 98). The organization released an updated framework in the spring of 2007 with the goal of “… hopeful change coming to education and learning”’ (p. 98). More than 15 US states and a number of public and private organizations, from Cisco Systems to Sesame Street, are P21 members. The P21 organization provides “… A research-based rationale for transformation of traditional curriculum and pedagogy…” (p. 99). The impetus for the establishment of P21 is the recognition that the world is increasingly globalized and complex, yet the US public educational system is stuck in traditional patterns. This is reflected in studies showing broad sentiment among business executives that school graduates are not prepared for employment upon graduation. Citing Trilling and Fadel (2009), Chehayl states that at the heart of P21 is a call for “a vibrant global movement… to retune the instruments of education or arising band of digital learners, and to sync up learning the new rhythms of a 21st-century” (p. 99).

The authors go on to say that this *perfect storm* is the convergence of four new ways of thinking and learning: knowledge work, thinking tools, digital lifestyles and learning research. “P21 is a research-based rationale for transformation of traditional curriculum and pedagogy…” (p. 98). Trilling and Fadel argue that high schools and college graduates “… are sorely lacking in some basic skills and a large number of life skills… Reports around the world confirm that this 21st-century skills gap is costing business a great deal of money” (p. 99, cited in Chehayl). Trilling and Fadel also address the question of assessment: “Teaching to the test has been the problem, the solution, and, unfortunately, more often than not the very core of the conversation
since implementation of the *No Child Left Behind Act* in 2002” (p. 97). Indeed, “What has been glaringly left out in recent assessment practice is the measurement of essential 21st century skills and the deeper understandings and applied knowledge that can come from rigorous learning projects” (p. 102, cited in Chehayl). This article’s primary value is that it summarizes an often-cited resource - a book - that I do not have access to. It would have been better to work from the original book; unfortunately, this is not possible. That said, the article provides a useful summary of Trilling and Fadel (2009), who support other literature on the need for educational reform.


Crook reports on qualitative data obtained from 53 focus groups of 13 to 15-year-olds in both traditional and innovative UK secondary schools. The students were surveyed on a wide range of issues relating to use of Web 2.0, both in, and out of school. Crook suspects that social and cognitive practices young people develop through the recreational use of Web 2.0 tools and services should not be considered general competencies. Instead those practices will be shaped and constrained by the particular socio-cultural settings in which the tools are used. Unless students and teachers embrace the educational purposes of Web 2.0 technology, then there may be a discrepancy in perception of the educational value of technology. Crook affirms that Web 2.0 opportunities also seem to be at the heart of what is meant by the 21st-century skills so widely sought by commerce and industry… such opportunities seem usefully in tune with young people's strong recreational engagement with these new Internet services. (p. 64)

And yet, despite educational theory which encourages the use of Web 2.0 technologies, as well as calls from the government and private sector, “… There is little evidence to suggest that educational practices are undergoing real transformational change mediated by Web 2.0 opportunities” (Crook et al., 2008; Schroeder et al., 2010, cited in Crook, 2012). Crook maintains that “It is tempting to explain misalignments by invoking the fashionable contrast between digital natives

Crook cautions that we must not assume that there is a natural alignment between young people's recreational use of technology and educational goals. For example, contrary to general assumptions, many students see and experience limited benefits using technology for skills such as collaboration, research and publication. To illustrate, students tend to associate research with Wikipedia and Google, while video is not typically a modality associated with schoolwork. In addition, despite teachers’ expectation that students want their work published, this is not always the case as some students prefer anonymity due to lack of confidence: “Communication practices do not exist independently of the socio-cultural structures that communicating agents occupy” (p. 77). This is article highlights an important issue that Bennett and Maton address: We must be careful not to make unfounded assumptions regarding how our students perceive technology use. The research is credible to the extent that the researchers surveyed a considerably wide range and number of subjects before drawing their conclusions.


Facer and Sandford concede that “Education is a future-facing activity” (p. 74). The authors cite the Building Schools for the Future program in the UK, the drive for 21st-century skills in the US, education foundations, public-private partnerships, government initiatives and private interests around the world - as examples of many entities calling for a redesign of educational curriculum, in which “the educational technology research field plays diverse roles in these discourses of educational and social futures” (p. 75). Facer and Sandford view 21st-century curricula as enabling people to work effectively “… within social networks for educational, social and civic purposes, and to develop strategies to establish and mobilize social networks for
their own purposes” (p. 86). Facer and Sandford propose that there is a need to “… re-engage the educational technology field with educational philosophy, with questions of sustainability and the concerns around social justice” (p. 86). The authors take a broad perspective, assuming that educational technology research in the future will need to “… move beyond pedagogy to curriculum; beyond the school to the community, home and workplace; and beyond social sciences to collaborations with medical and bio-ethics fields” (p. 74). The article covers a wide range of opinion not specifically related to my research. Nevertheless, the authors offer a long-term perspective of educational technology’s role, acknowledging that this discipline will play a vital role in educational transformation.


Honan recognizes that the integration of educational technology requires more than simply adding technology in order to encourage and motivate learners. The act of using technology and acquiring information through digital media “… affects learning itself. Unfortunately what is sometimes reported as exemplary practice by teachers who are using new technologies resembles the ‘old wine in new bottles’ approach to literary education…” (p. 83). Citing Labbo and Place (2010), Honan asserts that it is incumbent upon those who believe in the transformative power of technology to encourage the understanding of new digital literacy and innovative technology practices: "It is this re-thinking that is required in schools and teachers are going to engage in meaningful and successful ways with digital texts in their literary classrooms” (p. 95). Honan’s article provides support to my argument that technology use does not directly correlate with 21st-century learning environments. What's more, those who believe in 21st-century learning environments must try to educate their peers. The first point relates directly to my thesis that educational institutions must rethink pedagogy, not simply add technology to curricula. The second point relates to my own efforts to reeducate my colleagues.

Johnson explores a common Web 2.0 tool reflective of 21st-century learning methods, blogs. Johnson notes that "Exploiting the potential use of authors’ blogs in the language arts curriculum can result in establishing and authentic learning environment that creates powerful connections, collaborations, and creativity that promotes learning and challenges thinking” (p. 174). Powerful support for the use of this technology is found in the fact that “This shift in audience from the teacher to the class or the world fundamentally changes the motivation for and engagement with written response for students” (p. 178). The author repeats claims made elsewhere that this type of learning environment requires that “…teachers can no longer be seen as the sole source of information in the classroom. Rather, the classroom teachers’ role becomes not only that teacher but also one of model and facilitator of learning” (p. 180). Johnson's article does not really offer much in the way of new insights given that blogs have been around for several years now, with much having already being said on the subject. The article is significant only to the extent that it offers an example of the kinds of activity reflective of modern learning environments.


Following Wiggins and McTighe’s 1998 *Understanding by Design* model of backwards unit planning, and Flynn, Mesibov, Vermette and Smith’s (2004) *Two-Step* model, Jones, Vermette and Jones (2009) propose an integrated framework for lesson planning, in which lessons begin with a learning goal that students and teachers “… use to judge their achievement during the class. This learning target, considered along with lesson-based assessments of student performance, enables teachers to sequence every learning experience within a lesson to reach a desired end” (p. 357). Flynn *et al.* (2004, cited in Jones) divide this sequential learning experience into two parts: discovery and exploratory: “Educators must ask themselves, ‘what do
students need to have accomplished by the end of the lesson?’ [discovery phase] and ‘what scaffolds are required for students to reach that end?’ [exploratory phase]” (p. 357). According to Jones et al., this method reflects a constructivist approach because it taps into the learners’ prior experiences and knowledge as a direction for research.

The author’s combination of Flynn's work with Wiggins and McTighe’s model does not appear to offer anything significantly new, especially their contention that lesson planning is qualitatively different than unit planning. That said, the article has some limited benefit in that it explains a commonly understood methodology for the actual planning of problem-based learning.


According to Kay, educational reform needs to take place at the middle school level when students are at their peak of curiosity and open to new ideas. Kay suggests that prior attempts to “give students a taste or a hefty dose of academic coursework they will encounter in high school…” have not succeeded because “… there is no galvanizing vision or goal around which to organize standards, curriculum, instruction, assessments, and learning environments” (p. 43). Kay is to that today's students are motivated and challenged when they are engaged in stimulating work that piques their curiosity, provides them with opportunities to make decisions, provides a degree of autonomy and choice in the learning process, as well as opportunities for creative self-expression. This reflects a constructivist belief that curricula should be relevant, challenging, integrated, engaging and exploratory.

According to Kay, education should look towards 21st-century skills frameworks that “… provide a powerful organizing framework for leadership and professional development, and for teaching and learning that motivates and engages students and builds their confidence as learners” (p. 44). In 21st-century learning framework also has the advantage of establishing clear learning outcomes and goals for students:

Making 21st century skills explicit and transparent will give students clear and compelling aspirations. Around these skills, they can develop their own strategies and share evidence of
success - another motivator for this group - such as portfolios of multidisciplinary and collaborative projects, work experiences, and new assessments of 21st-century skills. (p. 43)

21st-century learning standards encompass “… doing, talking, and processing in teams, problem-solving, expanding the audience for learning, and giving students more choice” (p. 42). The hope is that … This will turn the tide on stagnant or negative growth in student achievement, speaking off boredom and frustration, and prepare students to succeed in higher-level courses in high school. These skills matched perfectly challenges that young adolescents enjoy and are well prepared to tackle. (p. 43)

Kay's article is welcome support for the argument that 21st-century learning should begin early, and that 21st-century learning frameworks provide a necessary focal point for the organization of mission statements that serve as a clear umbrella, under which all stakeholders can organize their direction and efforts. This is a central argument in my thesis.


Apparently only 13% of American adults have the necessary knowledge and skills to research, understand and use digital resources information within a professional context - a 13% decrease since 1992. Only 5% of American college undergraduates pursue degrees in engineering or science, compared to 42% of Chinese university students. Knox explains that for companies like Microsoft to remain competitive and innovative, they have competency standards for their employees. Microsoft's core competencies, as they are known, are similar to the competencies outlined in the Partnership for 21st Century Skills (P21) learning framework, which emphasize core knowledge as well as intellectual rigor, personal development, collaboration and interpersonal skills: “… Microsoft believes that employees should be able to recognize patterns among systems in order to solve problems as they arise” (p. 33). Likewise, the P21 recognizes that students must “… be able to exercise sound reasoning when making complex choices and understanding interconnections among
systems” (p. 33). Moreover, both Microsoft and the P21 framework emphasize that people should be able to tolerate ambiguity and utilize technology “… as an essential tool for learning and working while emphasizing the importance of being able to function and contribute as a team player” (p. 33).

Knox goes on to describe a number of private and governmental initiatives related to the development of 21st-century skills. For example, Microsoft has developed education competencies that “… Represent[s] many of the attributes, behaviors, areas of knowledge, skills, and abilities required for successful job performance” (Competencies). This article provides a concrete example of how 21st-century skills relate to the business world, demonstrating that 21st-century skills are, in fact, demanded by the job market students will find themselves in after completing school, thereby reinforcing the argument that educational reform is needed.


Larson and Miller lend support to the concept of 21st-century learning in their description of the Partnership for 21st Century Skills, an advocacy organization “… that promotes the infusion of 21st-century skills into education. The framework lays out the type of knowledge, skills and expertise students need to successfully enter today's workforce. Larson and Miller explain that while there are different ways of looking at the definition of 21st century learning, the central premise places an emphasis on “… what students can do with knowledge and how they apply what they learn and authentic context” (p. 121). This requires the development of strong communication and collaboration skills, expertise and technology, innovation and creative thinking skills, and the ability to solve problems. Larson and Miller concur with predominant literature findings that a 21st-century learning environment requires a shift in teacher roles:

> In reality, it is no longer possible for every teacher to be an expert in every technology, and students often possess more expertise than their teachers. In a 21st-century classroom, effective teachers and students orchestrated learning environments in which individual expertise technology shared with a broader community of learners. School administrators can
support such configurations by providing professional development, skills-specific training, and time to plan and design technology-based lessons. (p. 123)

This guide supports current definitions of 21st-century learning and the role of teachers and management.


According to Moylan, there is a general consensus that a significant gap exists between education and the kind of skills and knowledge needed to thrive in the post-educational job market. Citing Trilling (2008), Moylan identifies seven vital skill sets, or 7Cs, that are essential in a 21st-century work environment: 1.) critical thinking and problem solving; 2.) creativity and innovation; 3.) collaboration, teamwork and leadership; 4.) cross-cultural understanding; 5.) communication / information fluency; 6.) ICT fluency; and 7.) career / self-reliance. Moylan submits that project-based learning is the key to closing this gap between education and reality. Project-based learning affords a number of benefits. For example, projects typically require students to mentally engage along the entire range of Bloom’s Taxonomy. Projects also students also afford an opportunity to sample authentic work experiences. Moylan describes a number of project-based learning initiatives, such as project ThinkQuest, which have met with success and enthusiasm among both business and educational stakeholders. Moylan knows that by combining service learning with educational technology, students can participate in collaborative projects that develop the 7Cs. “Project-Based Learning has been identified as a key methodology for closing this gap between current student learning and developing the necessary 21st century knowledge and skills” (Andreas, 2006, cited in Moylan, 2008). Moylan provides considerable explanation and examples of project-based learning, a key component of my final paper thesis – that educational reform is needed, and the only way to achieve 21st century learning environments is to introduce inquiry/problem-based curricula by leveraging Internet technology.

Citing the findings of reports such as the 2007 MLA Ad Hoc Committee On Foreign Languages, Oxford (2010) contends that in order to improve undergraduate foreign language proficiency, changes must begin at the K-12 level, where there needs to be a shift to a more integrative and interdisciplinary approach that takes into account the kind of 21st-century learning skills, educational vision formulated by educational, business and policy leaders, called the Partnership for 21st Century Skills [P21]. P21 defines 21st-century skills as the knowledge and expertise students must gain in order to succeed in today’s work world. P21 is comprised of four major themes: core and 21st-century subjects; learning and innovation skills; ICT skills; life and career skills. Oxford stresses that a more authentic foreign-language educational experience - along the lines of the P21 - is the only way to prepare students for the realities of 21st-century, “… as a reframing … towards a more integrated model where cultural, linguistic, and literary knowledge and practices are more functionally relevant outside the ivory tower” (p. 67). Oxford goes on to say that “Nothing less is necessary in preparing society for the changed world arising from the widespread and deep economic global recession and resultant societal paradigm shifts; fomenting higher order thinking skills, creativity, and other life skills may make recovery and the reframing of society a bit less stressful” (p. 68). Oxford establishes a crucial link between K12 education, learning frameworks such as P21, and language learning at university level, which supports my thesis that technology integration will be most effective within the context of a shift from traditional to 21st-century learning environments.


Robinson and Sebba report on a study conducted across 10 primary and secondary schools in the UK from 2007 two 2008. The purpose of the study was to assess how learners and teachers influenced schools’ decisions to implement, support and
develop opportunities for personalized learning using technology. The research sought to establish the effect of the learner demand on technology use decision-making. The authors surmise that personalized learning, which builds on learner experience and interest, can be difficult to effectively implement, requires more formative assessment, and necessitates higher-order questioning. Robinson and Sebba remark that personalized learning may occur while students work individually, in small groups or as a whole class: "Thus, personalized learning cannot be equated with individualized learning but it may include it" (p. 768). Qualitative data indicate that access to, and support of digital technologies, are major factors influencing implementation. What's more, genuine learner-led personalized use of technology was rare; instead, learner-influenced practice was typically the case, where students are allowed some flexibility at the classroom level in determining their choice of technology among prescribed alternatives. Another significant finding was that national high-stakes testing requirements “… Lead teachers to perceive it necessary to follow tightly scripted programs of study, and many teachers were extremely cautious about providing opportunities for learners to deviate from these…” (p. 774). There was also resistance from some learners about the extent to which they wanted to personalize their learning. In some cases, learners wanted teachers to decide what has to be learned in order to be able to achieve high grades in national tests, thus “… moving away from any form of learner-led or learner-influenced personalized learning” (p. 774).

Robins and Sebba believe there are more constraining than enabling factors at play among these UK schools with regard to personalized use of technology, a commonly cited aspect of 21st-century learning. This research is cogent for several reasons. First, the issue of learner-led versus learner-influenced decision-making is an overlooked issue in recent literature. Second, the authors’ assertion that the majority of teachers, and even students, often eschew authentic learning for exam preparation reflects my own experience, where authentic and meaningful activity is sacrificed on the altar of exam prep. Third, in my own experience, I frequently see students who are habituated to directed instruction; as a result, these students are often content with
a teacher-led classroom as this alleviates them from having to take responsibility for their own learning.


Broadly cited by teacher unions, higher education organizations, national education groups, workforce development groups and policymakers, 21st-century skills are being hailed as imperative for today's students if they are to succeed in a rapidly changing, interconnected and technology-based world. Silva points out that the ability to think analytically and creatively are not skills specific to this century; one can look back to Socrates for similar ideas. Rather, “Today's workers… must be able to find and analyze information, often coming from multiple sources, and use this information to make decisions and create new ideas…21st-century skills, then, are not just knew, just knew important " (p. 631). Referring to a 2008 US Department of Education report, Silva accepts that skills and content are learned best together. Furthermore, in contrast to commonly held beliefs, “… There is no set age or developmental stage when children are ready to gain complex thinking skills“ (p. 632). For this reason, “… teaching a rich body of knowledge and providing engaging opportunities to acquire this knowledge that all students deserve [is what] public education must work toward" (p. 632).

Silva points to the importance of assessment, in that, “Assessment is a serious driver in the 21st century skills debate” (p. 630). The International Baccalaureate Diploma Program is an example of an educational program that aligns a higher-order thinking curricula and assessment, which involves a range of performance tasks both internally and externally with none worth less than 20% or more than 50% of the overall assessment. Silva speculates that while revamped assessment will not solve all problems of public education, “For those dedicated to improving day-to-day learning and longer-term student outcomes, designing standards, curricula, and assessments that reflect this reality is paramount” (p. 634). Silva’s paper supports claims for the efficacy of 21st-century curricula. Silva also provides an example of a successful international program that does not rely solely on high-stakes testing. One must
wonder, however, about Silva’s claim that children can process complex thoughts at young ages. This would appear to need more clarification and support, given that it is contrary to accepted notions of cognitive development.


Guided-inquiry learning is based on social constructivist learning theory, whereby learners construct their new understanding within the context of their own cultural environment. This approach affords learners the opportunity to assume ownership for learning and encompasses “… A wide range of skills and processes and active learning leading to a much broader understanding of the world students are part of” (p. 154). Guided inquiry differs from discovery learning in that instructors have an important role in scaffolding learning “… at critical points in the learning and development process. It allows for different modes of learning to be catered for and facilitate learning through social interaction with others” (p. 155). Moreover, technology can provide a “… rich context for … social construction of outcomes, connections, cooperation and collaboration with others, and practical engagement and worthwhile than real-world activities” (p. 156). Snape and Fox-Turnbull stress that this approach differs from traditional “… desk-confined, textbook and whiteboard techniques often used in our primary and post primary classrooms” (p. 156). This approach also mirrors the development of skills identified in the Partnership or 21st-Century Skills framework, in that, “As students develop technological outcomes meeting the needs and opportunities of stakeholders and relating to real-world contexts, they work and authentic practices. Practices will be real to the students, their lives, and the situations they may encounter in future workplace” (p. 156). Furthermore, “The socially embedded nature of Technology integrates a variety of skills, ethics and cross cultural beings, offering opportunities for students to participate in, and understand many local, national or global community issues” (p. 156). Snape and Fox-Turnbull illuminate an important distinction between the methodology of guided inquiry versus discovery learning. Additionally, the authors’
writing lends support to the important role of technology in a 21st-century learning framework.


Citing a lack of clear evidence that would establish the efficacy of formative versus summative assessment, Ross reports on an eight year study of foreign language learners’ proficiency achievement. Four groups were assessed using traditional summative assessment methods; the other four experienced more formative assessment. The research addressed the question of how formative assessment practices such as peer-learner assessment, portfolios, group projects and cooperative learning tasks compare to more traditional summative assessment in terms of both proficiency and language growth. Ross notes that a move towards more formative assessment reflects current educational trends that emphasize the learner, in which “… alternatives to conventional testing [are seen] as a shift of the focus of control from centralized authority into the hands of classroom teachers and their charges” (p. 319). Ross reports that the results of the longitudinal study were inconclusive with respect to a definitive indication that formative assessment is superior to summative assessment. Ross qualifies this by saying that “… While the formative assessment may not be omnipotent in all academic skill domains, the results… suggest that judicious use of formative assessment may well lead to tangible value-added outcomes” (p. 337). Ross bases this on observations that “… formative assessment may produce its largest impact on learners’ volitional stance likely to affect attention and participation in language learning activities… growth… seems optimally conditioned by learner contribution” (p. 337). While this study does not offer conclusive empirical evidence - which seems to be the case in general - it does represent an attempt to measure formative versus summative assessment, thus worth inclusion in my final paper.

Tingen, Philbeck and Holcomb report on a study that assessed the alignment of 21st-century skills with classroom websites found on the Internet. The authors vetted more than 100 websites, which was narrowed down to 25 ‘exemplary’ websites. Of these 25 websites, the authors conclude that at least 90% do not meet the requirements of 21st-century learning skills, but “… rather than serve as a forum … the majority of classroom websites function primarily to distribute static information” (p. 89). The authors suggest a framework for evaluating the 21st-century skills merit of a class website. Elements include the use and integration of Web 2.0 applications that support collaboration and interaction, a platform to showcase students work, support for creativity and active learning through authentic academic experiences, engaging students with real-world data, tools and experts, and the modeling of ethical practices in relation to digital literacy. The authors provide example websites that fulfill their framework qualifications. The examples are a good touch, although it must be said that neither of the two example websites provided are extraordinary in any way. They simply include links to numerous resources as well as examples of students work. This article is useful to the extent that it suggests a framework for evaluating a common project-based web tool like websites.