

Editorial

Transforming Education for the 21st Century: New Thinking, New Action

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What does the 21st century demand of college graduates? What will the implications be for higher education?

There are several well-regarded 21st century skills frameworks for thriving in today's complex, global, technologically driven world. These include those developed by the Partnership for 21st Century Skills (2006) (P21), the American Association of Colleges and Universities (2007), and the Organisation for Economic Cooperation and Development (2005). P21 content includes, for example, global awareness; financial, economic, business and entrepreneurial literacy; civic literacy; health and wellness awareness. Learning and thinking skills include critical thinking, problem solving, communication, creativity, innovation, collaboration, contextual learning, and information and media literacy.

Twenty-first century skills are needed for “jobs that emphasise expert thinking or complex communication – tasks that computers cannot do” (Levy and Murnane 2004, 53-4, cited in Dede 2009, 1). People collaborate across media and the world through “teams . . . with complementary expertise and roles, as opposed to individuals doing isolated work in an industrial setting” (Dede 2009, 2). The 21st century thus requires contextual skills such as “filtering data derived from experiences in complex settings to develop skills in sophisticated problem finding” and “group interpretation, negotiation of shared meaning, and co-construction of problem resolutions” (Dede 2009, 2-3). Pattern recognition, coupled with critical thinking, can also help determine when contexts call for innovation versus adaptation. Technology, especially social media, opens the door to “new learning” (Cope and Kalantzis 2013) characterised by collaborative intelligence, active knowledge-making, multimodal meaning, recursive feedback, learning that is ubiquitous and situated, and metacognition.

An expert committee struck by the US National Academies (Pellegrino and Hilton 2012, 4-5) emphasised “deeper learning” that enables transfer “to support new learning or problem solving in culturally relevant contexts.” Readily retrievable “well-organised knowledge” is the key to expertise. Learning calls for “extensive practice, aided by explanatory feedback that helps learners correct errors”; such feedback is best acquired through “multimedia learning environments.” Rote learning does not promote deeper understanding (Pellegrino and Hilton 2012, 4-12); intrapersonal “teachable” capabilities do. These include intellectual openness; conscientiousness and initiative; self-direction, self-regulation, and self-monitoring; as well as physical, emotional, and psychological health (Pellegrino and Hilton 2012, 22-3).

Disruptive technologies – including a preference for “anywhere, anytime” online learning – is one of several key challenges in higher education today. Eighteen to twenty-two-year olds increasingly do not enrol full-time after high school. An infographic created by the Gates Foundation, for example, shows that “if 100 students were chosen to represent the population of America's colleges and universities, 56 [of them] . . . would be female, and 26 would have children. The majority . . . would be working while in school, one-fifth with full-time jobs. Thirty-four . . . would be over 25-years-old” (Setser and Morris 2015, 4). Dew (2010) points out that many young people are not able or willing to go into debt for full-time college study, opting instead for part-time study combined with work, often through community colleges or online courses. Exceptions would be professions (e.g., medicine, law, and engineering) and fields requiring intensive laboratory or face-to-face training.

Meanwhile, an increasingly global working environment calls for multicultural competence, outcomes assessment, and alignment of curricula across institutions and countries (Altbach 2009; Dew 2010). More students seek higher education today – reflecting what Altbach (2009) called “massification” – at a time when colleges experience funding shifts, resource constraints, and new space and technology requirements. Global partnerships and international campuses have responded to new demand. Dew (2010, 49) suggested that fewer “full-time faculty will . . . serve as the guardians of a body of knowledge in their discipline,” while larger numbers of teaching and adjunct faculty will be hired to meet student demands for relevant, quality educational experiences.

Mercer (2015) analysed the responses of higher education in the UK to the challenges of globalisation, and concluded that universities need to make strategic choices. “There is not a one-size-fits-all approach when it comes to competing globally. Nor should there be” (Mercer 2015, 5). Universities need to assess their strengths, their student base, and their market needs. International partnerships or campuses could play a role for some institutions, but others might serve regional needs or special audiences such as working adults.

The 21st century is experienced differently, depending on each student – his or her geography, gender, race or ethnicity, religion, socioeconomic status, language, personality, and opportunities, among other things. Diversity of background and interests is increasingly welcome in the global economy, but at the same time, businesses and public institutions are challenged to learn how to create environments that are inclusive and tolerant of different points of view.

A 21st century skill essential for innovation and growth, and at times, simply for survival, but not always considered as a desideratum, is the ability to recognise and work with difference, and to cross and explore boundaries that divide disciplines, subject matter, and peoples. This capability calls for a fundamentally transformed mindset. If we see the world in terms of rules and right vs. wrong, for example, we might define ‘the other’ as wrong, just because he/she experiences reality differently. In the 21st century, we need to instead see our shared experiences – at work, in families, or in larger social institutions – as suggestive of patterns only seen when we look at whole systems or ecologies of life. Starting with cells, Fritjof Capra (1996) in *The Web of Life* shows how life diversifies and grows through novelty and experimentation.

The 21st century is focused on innovation. This often starts with what the technology world calls ‘mashups’ – the joining of ideas that do not seem related but, when brought together, break new ground. Higher education is well suited to be the vehicle for opening up minds to new ways of thinking, and for breaking new ground. This calls for what Dorothy Leonard-Barton (1995) described as “creative abrasion” to enable people with radically different ideas to bridge points of view and innovate – a needed 21st century skill that points to changes in the how and not just the what of teaching and learning. The payoff can be the growing ability to solve collaboratively the big challenges in lives and society through teaching and learning that fosters conversation and capabilities for working across what are, in essence, human-made boundaries that hold back our own growth and the growth of others.

References

- Altbach, P.G., L. Reisberg and L.E. Rumbley (2009). *Trends in global higher education: Tracking an academic revolution*. Report prepared for the UNESCO World Conference on Higher Education. Paris: UNESCO and SIDA/SAREC.
- American Association of Colleges and Universities (2007). *College learning for the new global century*. Washington DC: AACU.
- Capra, F. (1997). *The web of life: A new scientific understanding of living systems*. New York: Anchor Books.

- Dede, C. (2009). Comparing Frameworks for “21st Century Skills.” July. [http://sttechnology.pbworks.com/f/Dede_\(2010\)](http://sttechnology.pbworks.com/f/Dede_(2010)). Downloaded 28 January 2016.
- Leonard-Barton, D.A. (1995). *Wellsprings of knowledge: Building and sustaining the sources of innovation*. Boston: Harvard Business School Press.
- Mercer, J. (2015). Making the grade 2015: The key issues facing the UK higher education sector. <http://www2.deloitte.com/content/dam/Deloitte/uk/Documents/public-sector/deloitte-uk-making-the-grade-2015.pdf>. Downloaded 23 February 2016.
- Organization for Economic Cooperation and Development (2005). *The definition and selection of key competencies: Executive summary*. Paris: OECD.
- Partnership for 21st Century Skills. (2006). *A state leader’s action guide to 21st century skills: A new vision for education*. Tucson AZ: Partnership for 21st Century Skills.
- Pellegrino, J.W., and M.L. Hilton (2012). *Education for life and work: Developing transferable knowledge and skills in the 21st century*. Washington DC: National Academies Press. www.nap.edu. Downloaded 28 January 2016.
- Setser, B. and H. Morris (2015). *Building a culture of innovation in higher education: Design and practice for leaders*. 2Revolutions and EDUCAUSE. http://www.2revolutions.net/CultureofInnovation_HigherEd_4.15.15_FINAL.pdf. Downloaded 28 January 2016.