Alan Collins's *What's Worth Teaching*
A Book Review

TERRI RATINI
Florida SouthWestern State College

POLITICS ASIDE, THE ANALYTICS ARE CLEAR; the United States has shifted to a service economy (Wolman et al., 2015). Combined with an advancing new wave of automation, the potential to further transform our economy is exponential. Survival skills for this new paradigm must be cultivated. Yet, education has moved to a standardized approach that disconnects skills and thinking and eliminates integration across subjects. Put simply, schools are not preparing students for a shifting reality (Apple, 2016).

These facts are not lost on Allan Collins (2017), who examines our current model of schooling in his important book, *What's Worth Teaching? Rethinking Curriculum in the Age of Technology*. In what might be coined a post-modern reconceptualization of education and curriculum, Collins, Professor Emeritus of Learning Sciences at Northwestern University, resoundingly voices that we clearly are not preparing students for success in the 21st century. Moving beyond critique, Collins also describes how educators and policy makers might restructure learning in a pragmatic fashion that develops the required dispositions for success in the age of technology.

To begin this review, I outline Collin's analysis. Next, I draw attention to some of his most compelling proposals for bringing about change in education. I conclude by considering and expanding upon what I believe are some of the limitations of Collin's otherwise thoughtful book.

Collins states what is painfully obvious to most educators, parents, and students, "the school curriculum is filled with stuff that most people will never use, and hence will forget as soon as they leave school or move to the next grade" (p. 1). Topics are broken down into small units; students are not asked to apply what they learn in the classroom to novel situations, to reflect, to enjoy the process, or to make meaningful connections to their interests or abilities. Teaching to the test has unfortunately shifted and narrowed education away from valuable and meaningful goals, such as taking responsibility for completing a substantial piece of work, solving complex problems, becoming a persuasive speaker, or working collegially. This should serve as a resounding call for educators. Are we teaching what should be taught? Are we using our students' time wisely? Are we helping children reach their full potential? With standardization and high-stakes testing as the norm in many educational settings, Collins indicates we are not. Though he foregoes a thorough discussion of how or why education has been directed towards

standardization, he implies that, in order to understand the necessity of change, we must examine the changing complexity of today's world, the current push to move education away from the humanities, and the limitations of current standardized curriculum.

Within this context, he establishes digital age guiding principles for school curriculum and seeks to broaden a conversation that, as Foreword author John Seely Brown suggests, revisits Dewey's pragmatism. Collins manages to do this in a fashion that, unlike Dewey, emphasizes not only current experiences but also preparation for the future. Collins writes, "the trick is to design school curriculum in such a way that the important things to learn are embedded in topics that students care about" (p. xv).

Echoing Carol Dweck (2016), Collins maintains that schools must explicitly guide students to develop the habits of a growth-mindset. Collins encourages helping students develop strategy and self-regulation skills such as planning, monitoring, reflecting, developing self-control, and being adaptive—all skills teachers seek in their students but rarely are able to teach explicitly. What many of us once viewed as the future is now. Routine jobs are becoming increasingly obsolete, but fortunately, schools can prepare students for the workplace of today and even the unknowns of tomorrow by helping them complete meaningful tasks aimed at developing productive and creative thinking. This type of preparation extends beyond traditional workplaces and recognizes change as a constant. One of the many changes technology is ushering in is a generation of on-demand workers operating in "gig economy." This has created a 21st century paradox; the technology revolution is reversing some of the interdependence that the industrial revolution created.

Collins's blend of a societal and individual needs approach addresses this type of change. By organizing his book around what he terms trends, Collins prepares a pathway for educators as they plan and implement curriculum for the technology age. Literacy, math, science, social sciences, and arts remain central to the school curriculum, but the specific content taught within those realms shifts. Too often new ideas only emerge post-curricular, outside of the school frame (Doll, 2012). For example, traditional reading and writing skills are becoming increasingly blended with personal communication. Technology provides not only the transition between basic and applied literacy but also transcends the barrier of motivation; the internet provides today's students with not only the forum for communication but also a meaningful purpose for much of their communication. And while schools have argued that these types of literacies are incompatible, technology advances have allowed students and millennials, who have already entered the workforce, to create their own literacy-multimedia documents, graphics, blogs, videos, and web research. Educators must expand our own views and methodologies or risk not only becoming illiterate within the realm of the new literacy but also forfeiting the opportunity to guide students as they develop new literacy skills. They will do so with or without us. Within this context, Collins suggests we focus on helping students (a) engage in productive dialogue, (b) develop skills of persuasion, and (c) negotiate fairly.

These focus points remain constant as Collins directs the conversation to the traditional social science curriculum. Once again Collins merges the need for responsible members of society with the needs of individuals, global awareness with the local. Students should study what is relevant to their lives and what is helpful as they make life choices and explore societal problems. Central to the curriculum are problem-based learning opportunities that teach collaboration, design, communication, and investigation skills while exploring topics such as population growth, critical resources, social justice, pollution, species extinction, or globalization (Gordon, 2010). We must avoid creating a generation that is disenfranchised from the society in which we live.

Therefore, Collins does not indicate technology age curriculum be blindly steered toward a STEM focus that largely ignores the humanities. He promotes moving the traditional mathematics and science curricula past an emphasis on executing algorithms to an emphasis on using technology to define and solve real-world problems. While this emphasis on real-world problem-solving is not new, just as the call for integration of mathematics and science is not novel, Collins suggests that students' education in both fields should consist of mastering big ideas. He identifies variables, functions, graphs, statistics, and correlation as foundational ideas to build student's mathematical and scientific thinking. This shift requires students to use technology to discover, to investigate, to design and carry out investigations. It requires students to also break out of traditional school models and to question traditional methodologies, to compare the views of others, and perhaps forge new broader frameworks for understanding and researching ideas. In what can be viewed as an additional move away from a measured curriculum, a move away from a strictly Newtonian paradigm, long gone are the requirements for everyone to memorize the periodic table, to memorize the distinction between mitosis and meiosis, or to endlessly plug values into Fg=mg. Yes, those students who wish to be forensic scientists must learn mole conversions, future doctors must learn the Krebs cycle, and future avionic engineers must learn Boyle's law, but students have a voice in what they want to learn.

Collins does not stop with curricular ideas. Unlike many in the field of curriculum studies, Collins presents a model for putting dialogue into practice, and his vision is not one of utopia. Previous successes with similar models such as Central Park East Secondary School in Harlem tell us that the vision is possible; yes, paradigms must shift, but the vision can be realized. Collins terms his vision "passion schools," where together students and parents choose from a variety of child-friendly themed curricula. "The goal of the passion school is to develop a community of learners who are working together to address meaningful questions, sharing knowledge and taking responsibility for completing the challenges they face" (p.114). Passion leads to action, and students complete a variety of projects aimed at helping students learn the kinds of skills, knowledge, and dispositions Collins describes. Motivation and a growth-mindset are a foundational component of passion schools.

Although I agree with this model and certainly respect what Collins has done to promote a paradigm shift, I am disappointed that, in a quick concluding paragraph, Collins puts forth the idea that charter schools should be the primary vehicle for carrying out his vision. Given the mixed portrait of charter schools, it is difficult to generalize any discussion of them, and this is particularly true in measuring the success of charter schools.

Regardless of the vehicle, the type of transformation Collins suggests must be made with integrity and credibility. While students' experiences should be flexible, they must be guided. One obvious and immediate challenge is how educators could keep track of what goals students have mastered and have yet to master. Collins does not focus on the specific requirements that students must master but does point to alternative schools created by Google executives in California as an example of schools using technology to assist with the monitoring of this information.

Additionally, Collins does not discuss strategies for ensuring that a flexible curriculum will not inadvertently limit student opportunities, inadvertently halt their journeys of destiny. The middle school student who shies away from writing assignments and gravitates toward other types of activities may actually have an untapped talent. How does the educator interpret and guide the student's hesitation? The high school student who struggles with physics may see beyond the limits of Newton or may simply have little aptitude or interest in Physics. How does the educator know?

Collin's vision places great responsibility on teachers who will mentor, guide, and challenge students as they construct thinking skills by planning, monitoring, and reflecting on their work—their experience. Teaching is an art form, and those within the profession who have managed to do so despite the limitations of the current era of teacher-proof curriculum know this. But to meet Collin's vision, educators must also be 21st century thinkers. This will be particularly challenging as one of the harmful outcomes of standardized curriculums and No Child Left Behind has been the de-skilling of teachers (Marsh & Willis, 1995).

Questions for Collins must also include the following: How are higher education institutions going to respond to his proposed changes in K-12 curriculum? Have we designed elementary and secondary education as "feeder schools" for higher education? This a disservice to the student who is not college-bound, as well as to the college-bound student.

These comments and questions are not meant to distract us from an appreciation of the key idea Collins conveys in *What's Worth Teaching? Rethinking Curriculum in the Age of Technology*; but I urge the reader to move past what Collins refers to as the start of a conversation. Yes, with the momentum and implications of technology, Collins does put a current twist on the question of how to best prepare students, but this conversation was started in earnest at least a century ago by Dewey (1923) who wrote, "the educator is especially exposed to the temptation to conceive his task in terms of the appropriate and reproduce the subject matter in set statements" (p. 207). Collins has made Dewey's work even more relevant in the technology age. Our challenge as educators is to create an educational system that simultaneously helps students see success in the modern workplace and helps them navigate an increasingly complex world.

References

Apple, M. W. (2016). Introduction to "the politics of educational reforms." *Educational Forum*, *80*(2), 127–136.

Collins, A. (2017). *What's worth teaching? Rethinking curriculum in the age of technology*. Teacher's College Press.

Dewey, J. (1916). *Democracy and education: An introduction to the philosophy of education*. Macmillan.

Doll, W. E. (2012). *Pragmatism, postmodernism, and complexity theory: The "fascinating imaginative realm."* Routledge.

Dweck, C. S. (2016). The remarkable reach of growth mind-sets. *Scientific American Mind*, *27*(1), 36–41.

Gordon, B. M. (2010). Curriculum studies, the future of: Essay 2. *Encyclopedia of Curriculum Studies*, *1*, 238–240.

Marsh, C. J., & Willis, G. (1995). *Curriculum: Alternative approaches, ongoing issues*. Merrill.

Wolman, H., Stokan, E., & Wial, H. (2015). Manufacturing job loss in US deindustrialized regions—its consequences and implications for the future: Examining the conventional wisdom. *Economic Development Quarterly*, *29*(2), 102–112.