

# **A Review of *Four-Dimensional Education***

**by Charles Fadel, Maya Bialik, and Bernie Trilling**  
**2015 Center for Curriculum Redesign**  
**Reviewed by Jacob Schnickel**

## **Overview**

Seth Godin, in his book *Linchpin*, writes that schools should teach children how to do only two things: “solve interesting problems” and “lead.” I was often reminded of this as I read *Four-Dimensional Education* by Fadel, Bialik and Trilling because in many ways, their work seems like a full unpacking of Godin’s simple formulation. The world is full of problems. Indeed, this is the backdrop against which Fadel, Bialik and Trilling introduce their framework as we will see later. One might argue that it is curiosity that transforms a mere problem into an interesting one. And in fact, curiosity features as an important piece of the educational framework they describe.

In *Four-Dimensional Education*, Fadel, Bialik and Trilling present a framework that can be used to design, reform and assess school curricula. The cover of their book features a concise diagram of their framework. It comprises a three-circle Venn diagram with two circles on the bottom and one on top. Each circle is labeled with one of their four dimensions. Starting with the circle on the left, moving clockwise, these read “Skills,” “Knowledge,” and “Character.” The intersection of these three circles— a sort of rounded triangle— reads “21st Century Learner.” The Venn diagram is circumscribed by another circle. The negative space outside of the Venn diagram and contained within the larger circle is labeled “Meta-Learning.” Fadel, Bialik and Trilling describe their model thus: “Four-Dimensional Education provides a clear and actionable, first-of-its-kind organizing framework of competencies needed for this century” (p. 3). It is this focus on the 21st century that brought me to their work.

## **How I came to this book**

My interest in the subject covered in the book arose from an observation that some of the twenty-first century skills described by Trilling and Fadel (2009) seemed to have featured strongly—and without explicit planning—in a project I had worked on, a hybrid exchange program based on collaborative online international learning (COIL) methodology. Some of these include ICT literacy, critical thinking & problem solving, collaboration, flexibility

& adaptability, and social & cross-cultural skills. It seemed clear that allowing students to develop these skills through challenging project-based learning opportunities would go a long way toward preparing them for the realities of a twenty-first century career, which would likely bear some of the same hallmarks of our COIL project: technology-supported communication, cross-cultural communication, and the need for creative problem solving to name a few.

### **The Publishing Organization**

The book is published by the Center for Curriculum Redesign (CCR), “an international convening body and research center seeking to expand humanity’s potential and improve collective prosperity by redesigning K-12 education standards for the twenty-first century” (p. 169). CCR has an ambitious mission of effecting educational reform on a global scale to both foster the fulfillment of the individual and to promote healthy societies. CCR engages with all manner of stakeholders in the world of education through a range of formats, including published materials, conferences and consulting work.

### **The Backdrop**

To introduce the framework Fadel, Bialik and Trilling present in *Four-Dimensional Education*, a sentence from their conclusion serves well: “We can do better than our current system; we must synthesize all of the expertise we have gained, and then make a well-considered leap, in order to innovate” (p. 164). The authors have indeed synthesized a great deal of material to arrive at their formulation. Throughout the book, we learn that they have distilled studies, surveys and other frameworks to yield the elements of their own framework. Before laying out this new framework, the authors present a picture of our current world.

Early in the book, they describe a range of phenomena as context for the framework. These “global trends and risks” (p. 9) include climate change, rising income disparity, and profound social instability, among others. Against the background of these looming threats, they express the scale on which they are thinking and the stakes that are on the line: “The survival of the human race depends on our ability to put our knowledge into action across disciplines and political divides” (p. 12). To address these challenges, they argue, we need new ways of thinking about and providing education.

### **Goals for Education**

In Chapter 2 “Education Goals for the Twenty-First Century,” the authors present a glimpse of

the amount of synthesis that went into the production of their book and educational model by tying together several models of well being, from one focused on the individual in Maslow's Pyramid of Needs to those focused on the societal, national and global scales, including the Better Life Initiative, the Good Country Index and the Sustainable Development Goals. They go on to reconcile one of several false dichotomies addressed in the book: the issue of whether "the goals of education [are] situated at the individual or at the societal level" (p. 36). They describe the "overarching purpose for education" (p. 37), which prepares healthy individuals to find meaning and fulfillment by participating in healthy, thriving societies.

Before moving to the model itself, Fadel, Bialik and Trilling describe the "five design goals" behind the CCR framework: **Comprehensive** because to have productive discussions, one must consider the entire interrelated system of education; **Compact** so the framework is "memorable and thus actionable" (p. 60); **Uncorrelated** so that each element of the framework can stand alone; **Appropriate** such that "concepts are placed in a sensible way according to their levels of abstraction, and their origin" (p. 61); and **Globally Relevant** because the framework, designed for international use, is not tied to a single culture. Then, with these five design goals described, Fadel, Bialik and Trilling move on to present their framework with these words, "The purpose here is to organize the existing, overwhelmingly large landscape of educational goals, and create a clear and useful way of thinking about curriculum" (p. 70). The first of their four dimensions is the Knowledge.

### **The Knowledge Dimension**

It seems likely that the domain of knowledge could be the most challenging to fit into a meaningful framework. Whereas the other elements of the model—skills, character, and meta-learning—are more limited and more widely applicable, knowledge is unlimited. For example, the skill of communication would be valuable across knowledge domains—in science, mathematics, or history. Fadel, Bialik and Trilling address this challenge in a number of ways.

They look to powerful organizational tools that can do heavy lifting. One of these is meta-concepts that are applicable across disciplines. They cite the example of a proof in mathematics and explain how the concept is valuable in crafting arguments in other academic areas, for which sound logical arguments are required.

In addition, they identify the importance of themes such as "global literacy," "information

literacy,” and “systems thinking,” which “represent common strands of learning that run through many disciplines” (p. 95). These themes can serve to place learning in real-world contexts and, furthermore, may encourage students to use knowledge as a means of addressing some of the interesting questions Godin stresses.

They, of course, see a place for traditional knowledge areas, including math, science, history, etc. and suggest that these be curated and trimmed. In considering these traditional subjects, they ask, “What if the larger education system was aligned with the goals of personal fulfillment and societal progress, including employability” (p. 76)? and suggest that this question can help guide the process of determining what is most important for a meaningful life in the twenty-first century.

Trimming the old makes way for the new, and Fadel, Bialik and Trilling identify several entries in the category of “modern knowledge,” including computer coding, digital journalism and personal finance. These, they point out, are inherently more interdisciplinary than traditional knowledge areas, and this relates to a point they make early in the book about the need for *versatilists*, those “who are able to apply a depth of skill to a progressively widening scope of situations...” (p. 2).

### **The Skills Dimension**

Fadel, Bialik and Trilling describe this dimension thus: “Skills represent how we use what we know” (p. 121). Early on in this chapter, they suggest that the common concern that a focus on skills might take away from the understanding of content is another false dichotomy—that, in fact, deep learning occurs when the two are linked. This joining of skill and content facilitates learning transfer, a goal they describe as “elusive” (p. 105). Education transfer occurs when a person is able to apply learning acquired in one context, such as a classroom lesson, in a different context, such as in a lesson on a different subject or in a professional setting.

In identifying the essential skills to include in their framework, Fadel, Bialik and Trilling drew on a core strength and value of CCR: synthesis. They analyzed survey data from many sources on the topic of the readiness for employment of recent high school and college graduates. They distilled this data, with the aid of input “from policy makers in ministries, departments of education, and schools” (p. 110) down to “the four Cs: creativity, critical thinking, communication, and collaboration” (p. 110).

They suggest that **creativity** may be the single most important factor in solving the challenges humanity now faces. An increasing focus among educators on problem- and project-based learning models reflects an awareness and valuing of creativity. Here again we are reminded of Godin's emphasis on having students learn to solve interesting problems. To do this, creativity will be a boon.

The authors trace **critical thinking** to Socrates, a pleasant reminder that in aiming to reform and update education, all that is old need not be discarded. "In essence," they write, "the critical part of critical thinking refers to questioning claims, rather than accepting them at face value" (p. 115). In our hyperconnected, information dense world, the importance of this skill cannot be questioned.

The value of having strong **communication** skills is self evident. As the authors point out, all professions require some amount and some form of communication. And for others, such as journalism or education, communication is central. They highlight the link between active communication and collaborative work, thus illustrating both the independence of these skills as well as their interrelatedness.

The final *C* stands for **collaboration**. Fadel, Bialik and Trilling write that "collaboration among people with different skills, backgrounds, and perspectives" (p. 119) is the best way to address complex problems. At the same time, they warn of the dangers of groupthink if collaboration is poorly executed. They offer some suggestions for fostering good collaboration, including "establishing group agreements and accountability," "teaching listening skills," and "teaching the art of asking good questions" (p. 120). They conclude this section by describing some of the outcomes of well executed collaborative learning environments, including greater enjoyment, increased self esteem and higher academic achievement.

### **The Character Dimension**

Fadel, Bialik and Trilling describe character education as "...the acquisition and strengthening of virtues..., values ..., and the capacity to make wise choices for a well-rounded life and a thriving society" (p.123). They go on to cite a global survey that indicates that employers around the world call for more character education. With this need clearly expressed, they describe six character qualities, which they synthesized from "many frameworks around the world" (p. 128). They avoid the often-used term "character trait," which suggests a

fixed feature of one's personal makeup, and use instead "character quality," which indicates something that can be cultivated.

Their six essential character qualities are mindfulness, curiosity, courage, resilience, ethics, and leadership. Each of these is accompanied by a non-exhaustive set of "associated qualities and concepts" (p. 130). For instance, listed along with the essential quality "courage," they include "bravery, determination, fortitude, risk taking, [and] persistence..." (p. 130) among others. The book continues with a fuller elucidation of each character quality.

To define the first quality, they cite Kabat-Zinn (1990): **mindfulness** is "the awareness that emerges through paying attention on purpose, in the present moment and non-judgmentally, to the unfolding of experiences moment by moment" (p. 131). They describe the benefits of mindfulness for students as including reduced stress, increased focus, improved memory and greater self-acceptance.

Some of the associated words under the essential character quality of **curiosity**, include "open-mindedness," "initiative," and "enthusiasm" (p. 133). Fadel, Bialik and Trilling look to Aristotle, whose view of curiosity "as an intrinsic desire for information" (p. 133), holds up today as a meaningful and relevant description of this quality. It is easy to understand why curiosity should have a place in the character dimension of a comprehensive model: it drives learning and pushes one to seek answers and to fill gaps in one's understanding.

Next on the list of essential character qualities is **courage**, which they describe as "a subjective experience, where an individual overcomes fear and chooses to take action in the face of uncertainty" (p. 136). Courage—also called "fortitude"—is one of the four cardinal virtues of classical philosophy. Given the challenges facing the world today and those of finding one's way through childhood and adolescence, the inclusion of courage as one of six essential character qualities in a new educational model is unquestionable.

**Resilience** is fourth in the lineup. There is an efficiency in the authors' choice to include a list of associated words and terms with each essential quality. Along with "resilience" comes "perseverance," "tenacity," and "grit" (p. 137). The descriptions of each of the six character qualities in the book is relatively short. They speak for themselves. How could the cultivation of a quality that can be described as *sustained effort in the face of adversity* not be an important aim of education and, indeed, in a life well lived?

For **ethics**, associated words include “respect,” “justice,” and “honesty” (p. 139). The authors make an important point about including ethics in the dimension of character rather than in that of knowledge, stating that one can have conceptual knowledge of ethics as a field of study while not being ethical in one’s behavior.

The sixth and final essential character quality in the framework is **leadership**, which brings us back to Godin’s framework. He states that schools should teach students only how to solve interesting problems and to lead. About the latter, he writes, “Leading is a skill, not a gift. You’re not born with it, you learn how. And schools can teach leadership as easily as they figured out how to teach compliance.” Fadel, Bialik and Trilling mention “quiet leadership” and the role facilitation plays in alternatives to outdated “top-down” views, thus indicating that leadership can be developed in and practiced by all personality types.

### **The Meta-Learning Dimension**

Fadel, Bialik and Trilling refer to the meta-learning dimension as “thinking about thinking” and “learning how to learn.” To begin a discussion of this final piece of the four-dimensional model of education, it is helpful to recall the diagram of the entire framework from the cover of the book. The dimensions of knowledge, skills and character each receive a single circle in a three-circle Venn diagram, which is enclosed by a larger circle. The space outside the Venn diagram but still enclosed within the larger circle is labeled “Meta-Learning.”

Pairing this image with the following from Fadel, Bialik and Trilling shows the interrelationship of the four dimensions of the CCR model: “[Metacognition] can improve the application of knowledge, skills and character qualities beyond the immediate context in which they were learned” (p. 146). Here again is the notion of transfer, which features throughout the book. And successful transfer means that knowledge, skills and character qualities learned and cultivated in a school setting can be applied in new settings—in the workplace, within families, and in other endeavors. In short, meta-cognition is an essential part of lifelong growth and learning.

### **Final Thoughts**

Though *Four-Dimensional Education* focuses on K-12 education, I, as a university educator, find great value in the framework presented by Fadel, Bialik and Trilling. By design, the framework is simple enough to remember without needing documentation. Teachers can use it to prepare new lesson plans, to reassess existing ones, and to plan semester- and year-long

courses. And the model is useful at increasingly greater scales: at the department, university, and ministerial levels.

Fadel, Bialik and Trilling describe the framework as “a foundation for clear discussions that respect the complexity of the many related variables of each educational component” (p. 61). It is in this effort to bring clarity to the inherently complex—not by giving prescriptive answers but rather by providing a meaningful starting point—that the value of their contribution lies.

## References

- Fadel, C., Bialik, M., & Trilling, B. (2015). *Four-dimensional education*. Center for Curriculum Redesign.
- Godin, S. (2010). *Linchpin: Are you indispensable? How to drive your career and create a remarkable future*. Hachette UK.
- Kabat-Zinn, J. (1990). *Full catastrophe living: Using the wisdom of your body and mind to face stress, pain, and illness*. Delacorte. Delta.
- Trilling, B., & Fadel, C. (2009). *21st century skills: Learning for life in our times*. John Wiley & Sons.