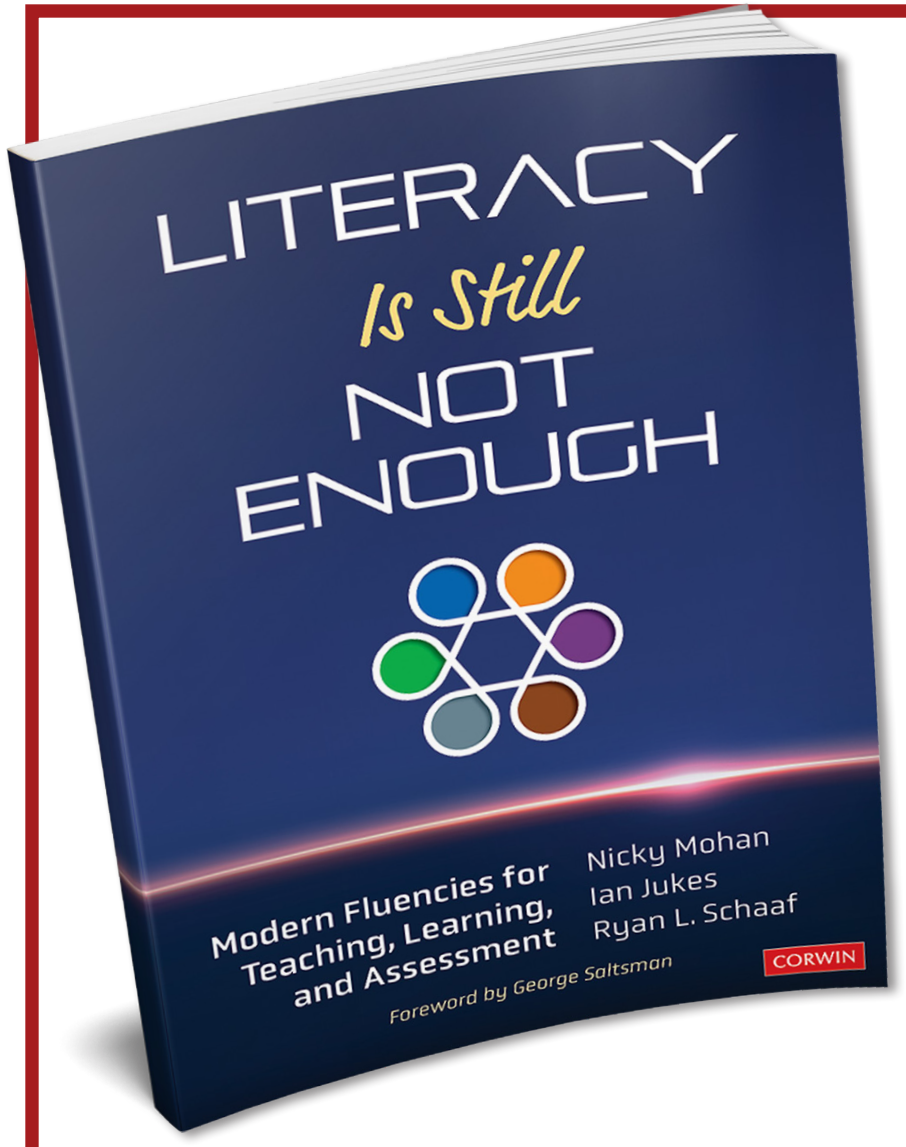

Thank you

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Please enjoy this complimentary excerpt from *Literacy is Still Not Enough* by Nicky Mohan, Ian Jukes, and Ryan L. Schaaf.

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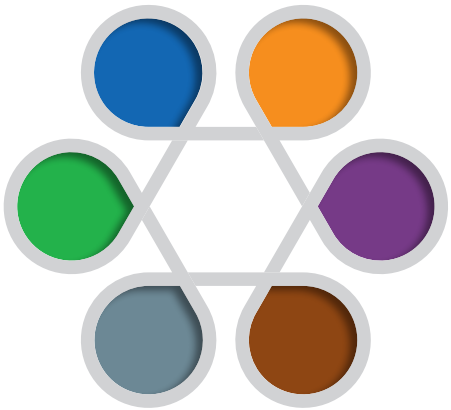
CORWIN Literacy

3 From Literacy to Fluency: The Starting Point



> "Student engagement is a product of motivation and active learning. It is a product rather than a sum because it will not occur if either element is missing."
>
> —Elizabeth F. Barkley

In Chapter 1, we characterized many of today's schools as preparing learners who are "highly educated useless people." We also examined how the world has changed outside of school as the result of disruptive innovation and the ever changing modern workforce. Now, let's step into today's schools and examine what is happening inside the "modern" classroom.

A highly revealing study (Poh, Swenson, & Picard, 2010) conducted at Massachusetts Institute of Technology (MIT) on student electrodermal or neural activity at different times of the day supports our experiences and observations related to cognitive engagement. (To access the full

study, please visit https://bit.ly/LSBECH#-FLUENCY.) A close look at the study shows that students' brains are far more engaged during activities like social interaction, sleep, labs, and study time than they are during class, where their brains register very little neural activity. The startling reality is that there is more active thinking involved in doing chores and watching TV than there is sitting in a classroom. It turns out that comparatively speaking, sleep generates enormous neural activity. From this evidence, we can extrapolate that if you want to exercise your students' brains, you should let them sleep in class. (Just kidding!)

So the main question is, how do we, as educators, change this reality? In light of this study, how do we promote active, engaged, higher-level thinking in today's and tomorrow's learners? And how do we have it all? How do we address the short-term goals of preparing students for the exams while at the same time addressing the long-term goals of developing engaged, lifelong learners during increasingly disruptive times? How do we address the need for students to simultaneously learn traditional curriculum content as well as the essentials of modern learning?

Literacy Is *Still* Not Enough

The first thing that needs to be emphasized is that education's traditional focus on traditional literacies (reading, writing, and arithmetic), while important, is no longer enough. We believe that even if we were to educate all our students to the standards of the 20th century literacies, they wouldn't be literate based on the needs and demands of the modern and future world. Two decades into the 21st century, reading, writing, and arithmetic remain the primary focus of education. A narrow and singular emphasis on traditional literacies means our students will be literate by the standards of the 20th century, but not literate by the standards of the 21st century. A focus on literacy is *still* not enough.

We believe we need to move our thinking, we need to move our teaching, and we need to move learning beyond our current focus on *just* the 20th century literacies, to equipping students with the essential new basics for modern learning. The new basics are mental processes that can be explicitly taught, memorized, learned, practiced, repeated, and, in due course, developed into unconscious habits of mind. The knowledge and skills learned become combined into an intuitive experience.

Noël Burch first theorized in the 1970s four levels of awareness:

1. Being unconsciously unaware (you don't know that you don't know).
2. Being consciously unaware (you know that you don't know).
3. Being consciously aware (you know that you know).
4. Being unconsciously aware (you don't know that you know). (Adams, 2016)

The essential skills for living, working, and learning in the modern world are mental processes that help students learn, practice, develop, and apply so they can, in due course, become unconscious habits of mind. These new mental processes are essential skills that pave the way for success in the modern world. The significant steps in developing modern learning skills involve conscious-to-unconscious application.

We call these modern learning skills the fluencies. The fluencies are the everyday process skills essential for living, working, and lifelong learning in the contemporary world. So let's first try to explain the difference between literacy and fluency.

Think about language. Someone literate in speaking Spanish will have a working knowledge of the language, but if they're only literate, they will have to stop frequently to think about translating their thoughts from English into Spanish. They'll have to think about pronunciation. They'll have to think about the grammatical structure of what they're saying. As a result, while they may be understood, their speech will likely be slow and halting, because they'll have to pause regularly to think about what to say next, and how to say it before they can speak.

Now compare the speech of someone *literate* in Spanish to that of someone *fluent* in Spanish. If they are *fluent*, they can speak fluidly and continuously without having to stop and think about how the language is constructed or having to think through and translate what they need to say next. If they're *fluent*, they have reached a level of *unconscious proficiency* that allows them to think in Spanish without first translating their ideas from English. They don't have to think about pronunciation or the structure of the language or the grammar; they just speak the language. Speaking Spanish has become a fluency. In other words, an unconscious mental process.

Here's another example: using a pen, or if you don't have a real pen grasp a pretend pen, and write your name using your *dominant* hand. Once you have done that, switch the pen over to your nondominant hand and do the same thing again. You will probably notice that it is a little harder to write with your nondominant hand because you have to consciously think about what you're doing. Writing with your dominant hand is an unconscious act; it's automatic; it's a fluency. Writing with your nondominant hand is a conscious act; it is a literacy; you have to think about it. That's the difference between literacy and fluency.

Fluency transcends merely knowing how to do something. Fluency is about doing things automatically without being conscious of every action. It's like riding a bicycle. Do you remember learning to ride a bike when you were a child? Between then and now, have you gone away from riding a bike for an extended period—like years? So you get on a bike after not riding one for many years; how long does it take you to get comfortable? For most people, it's a matter of minutes, because riding a bike is a fluency. It is an unconscious, learned act. Once you get used to the brakes, the pedals, the gears, the handlebars, and the seat, you don't have to think, you just ride. Instead of focusing on the mechanics of bike riding, you can focus on the destination. Fluency goes one step beyond literacy. Fluencies focus on the metacognitive skills needed to apply literacy skills from one task to another and rapidly make nuanced decisions about how to use them. How is fluency different from literacy? In learning to speak a foreign language, a literate person can speak, listen, and read for comprehension when using the new language. In contrast, a fluent person uses their understanding of the language to create something new, whether it is a story, song, play, poem, or conversation.

Fluency of ideas refers to the speed, quality, and quantity of responses an individual can use to create answers to questions or quickly make new connections between ideas. A fluent brain quickly sorts through alternatives and identifies the most appropriate solution. Imagine a quarterback standing at the line of scrimmage, getting ready to take the snap as they rapidly scan the entire field. Depending on the situation, the quarterback may choose to throw the ball to exactly where the play was initially planned. At other times, the quarterback may improvise based on what's happening on the field at that very moment. The more experienced and cognitively flexible or fluent the quarterback is, the more likely they will be able to think on the go, and the more options the quarterback has to choose from, the more likely they will be to successfully throw the ball where they want.

The same thing is true for any fluency. A writer who chooses between 30 turns of phrase, or 30 examples of how to make a point, has a far greater ability to identify the most appropriate word or phrase to make their point than the individual who can only come up with a single example or use a limited vocabulary. A writer who has 30 ways to describe a "dark and stormy night" will be able to construct better prose and poetry than one who only thinks, "The weather was bad." That's the difference between being literate and being fluent.

Conscious Application of Essential Skills

In a conscious application of skills, you develop expertise, but you must think about how to apply the skills. Having to think before doing is an essential and useful stage in skill development. Think back to when you were first learning to drive. In the beginning, you were very conscious of turning the steering wheel, stepping on the brakes, stepping on the gas, using the turn signals, and checking the mirrors, along with a whole bunch of other driving skills. It was hard to do this all at the same time. Simultaneously learning these new skills was a necessary first step in learning how to drive. It is for this very reason that we don't just give student drivers their licenses. They are just not ready to operate a vehicle independently without an experienced driver being there to guide them as they learn the necessary skills.

Since they are new drivers, they must think before applying these skills, and as a result, in the beginning, they often don't operate the car smoothly. They lurch, stall, and stop abruptly. In the beginning, driving is a halting, uneven, uncomfortable experience. To become an independent driver, learners need sufficient practice and experience so they can learn to apply all these skills unconsciously and intuitively.

Experienced drivers can perform these skills at a high level of mastery while still carrying on conversations with their passengers, listening to music, and sipping on their coffee. They can do this because they don't have to think; they just drive. Learners also demonstrate this when they learn a new mathematics skill, grammatical rule, or reading technique. At first, they must consciously think about performing these skills. It is only after practice and repetition that the skills are developed to the point where learners can perform them with little to no thought required.

Unconscious Application of Essential Skills

Experienced drivers have reached a level of unconscious ability. We do not mean they can drive while asleep. In this context, unconscious

ability means performing a task instinctively, without realizing or being aware of one's actions. When they attain this level, they can focus on higher-level cognitive functions. They don't just respond; they can also anticipate what other drivers are going to do and take corrective or preventive measures before something happens. This unconscious skill level doesn't just apply to learning to drive; it also applies to reading, writing, arithmetic, research, problem solving, and any other skill needed to develop practical intelligence. Unconscious skills are what conventional notions of multitasking are all about, which is being able to do several things unconsciously and simultaneously. Small and Vorgan (2008) referred to this ability as *continuous partial attention*.

Acquiring the processes of the modern learning fluencies is about developing robust and reliable chains of unconscious procedural practice. When we first learn how to back up a car, it's challenging. We have to consciously and separately think about each step—how to turn the steering wheel, how to use the mirrors, how to step on the accelerator, how to apply the brakes. But once the skills are linked and the process chained, it's easy. It becomes an unconscious process; it becomes automatic; it becomes a fluency. Mastery involves the development of chains of procedural fluency. And once those procedures have been learned and internalized—once they've become chains—they've become an unconscious, structured mental process for life.

Modern Learning Fluencies

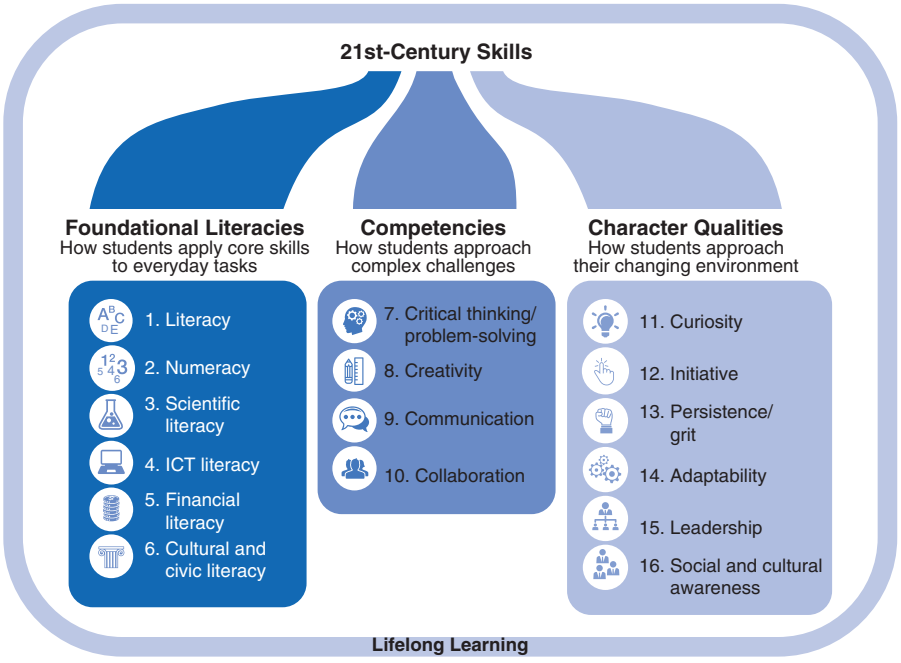
We believe that when we're talking about modern learning and the new basics needed to be successful in the fundamentally different and continuously changing world we live in, our goal must be to help our students become fluent, not just literate. Literacy is *still* not enough.

So what are the essential fluencies for modern learning? What are the critical mental processes that *all* learners need to acquire above and beyond an understanding of traditional content areas? What are the new basics, the process skills that are important now and will remain just as essential and relevant 50 years from now when today's learners are retiring from their careers?

These are tough questions. There are any number of essential skills lists circulating out there. One of the most well-known is the list developed by the World Economic Forum that identifies foundational skills, competencies, and character qualities, shown in Figure 3.1.

There's also Tony Wagner and Ted Dintersmith's Essential Modern Skills outlined in their book *Most Likely to Succeed* (2015), The East

Figure 3.1 World Economic Forum 21st-Century Skills



Source: World Economic Forum. (2015). New vision for education: Unlocking the potential of technology. Retrieved from http://www3.weforum.org/docs/WEFUSA_NewVisionforEducation_Report2015.pdf

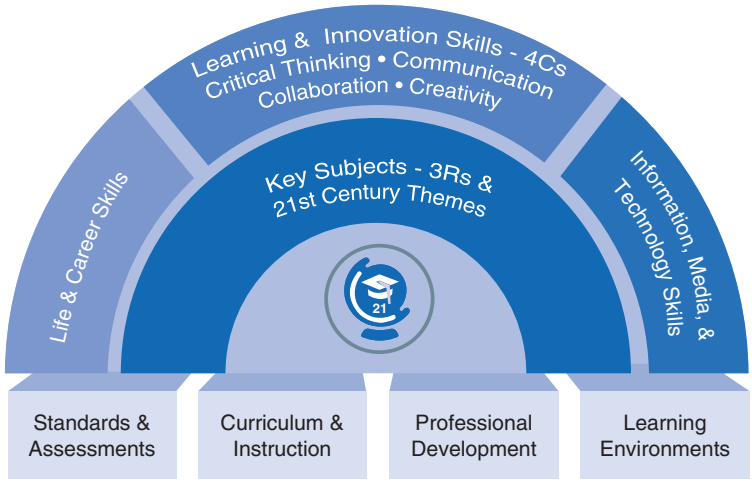
Asia Society in Partnership with CCSSO (Mansilla & Jackson, 2011), and the Partnership for 21st Century Skills (2009), shown in Figure 3.2.

Nicky and Ian examined, compared, and combined several modern skills lists being promoted or profiled. They discovered there were at least 150 different "essential skills" that have been identified in one or more of these lists. There were far too many skills to teach individually without absolutely overwhelming an already overcrowded curriculum.

Together, we methodically reviewed all these lists and their skills and distilled and categorized them down to a list of six essential fluencies we believe are future-focused and future-proof and that these six fluencies will empower individuals for lifelong personal and professional success. These are six skill sets that can be seamlessly integrated into any subject area at any grade level. We are confident that learning these six fluencies is as relevant and essential today as reading, writing, and arithmetic were for success in the 20th century.

These fluencies include Solution Fluency, Collaboration Fluency, Information Fluency, Creativity Fluency, Communication Fluency, and Global Citizenship.

Figure 3.2 P21 Framework



Source: Partnership for 21st Century Skills. (2009). P21 Framework definitions. Retrieved from https://files.eric.ed.gov/fulltext/ED519462.pdf

The Path Forward

Although this chapter provides a thorough analysis of the essential skills of modern learning, there is still so much more to describe, like how we can embed and teach these skills together with existing curriculum content. If learners are to develop the essential, modern-day skills they need to survive and thrive in an ever changing world and economy, then educators must also develop new mindsets and skills to reflect the realities of modern times. Developing these skills is what we examine in the next chapter.

Summarizing the Main Points

- If we were to educate all our students to the standards of the 20th century literacies, they wouldn't be literate based on the needs and demands of the modern and future world.
- Fluencies are the everyday process skills that are essential for living, working, and lifelong learning in the modern world.
- Any mastery involves the development of chains of procedural fluency. Once those procedures have been learned, they form chains and become unconscious, structured mental processes.
- Fluency transcends merely knowing how to do something. Fluency is about doing things automatically without being conscious of every little step.

- The Modern Fluencies are Solution Fluency, Collaboration Fluency, Information Fluency, Creativity Fluency, Communication Fluency, and Global Citizenship.

Questions to Consider

- How do we promote active, engaged, higher-level thinking in today's and tomorrow's learners?
- How do we address the need for our students to learn both traditional curriculum content as well as the essentials of modern learning?
- What are the new process skills that are important now and will remain just as important and relevant 50 years from now when today's learners are retiring from their careers?
- Explain the difference between literacy and fluency.
- Summarize your understanding of what the authors describe as modern-day fluencies.