INTRODUCTION

Imagine

Take a deep breath.

Now another one.

Sit back, get comfortable, and close your eyes.

Now think about the perfect school and let your mind wander for just a bit.

You may be seeing a school you know. Perhaps you saw one from your childhood that holds warm memories. Or maybe what popped up first in your imagination first was something out of "The Little House on the Prairie." Makes no difference.

Remember we are imagining the perfect school, and we're not going to get there overnight. In fact, nothing is ever perfect – but at least we can try to start moving in that direction. So, let's just take an imaginary "time out" and pretend that we get to start over. Completely over.

1892 AND THE COMMITTEE OF TEN

Before we get too far into designing a school from scratch, we need to think a bit about how we got here in the first place. By the late 1800's the United States stretched from coast to coast and, as always, there was controversy over issues of what should be taught, to whom, and when. Few people know about the Committee of Ten – even though their decisions in 1892 have shaped most of our lives.

The Committee was appointed by the National Education Association and was chaired by Charles Eliot, president of Harvard University. Their task was to standardize high school programs across the country so that colleges could be certain that they were accepting students who could be academically successful. Their finished report might sound familiar to most of us today. To start with, it laid down two "tracks" for high school students: the "University Preparation Track" and the "Terminal Track." Students who would never be considered for college were placed on the "Terminal Track." In 1892 that had little to do with a person's intelligence. More often it was because they were poor, the wrong color . . . or because they were women.

Other familiar aspects of the report included "Grade Levels," a 1st– 8th grade "Grammar School," a 9th-12th grade "High School" – and the familiar system of Carnegie Units that are needed in order to graduate.

Even though many students could not meet the standards of high school and dropped out of school before they finished, this system seemed to work well for the country throughout the first half of the 20th century. With two World Wars to fight – and an industrialized society to build . . . there was always plenty of work for those high school dropouts. My own grandfather was a perfect example. He only made it through the 6th grade, dropping out to work on the family farm. In 1934 he brought his wife and young daughter to California. He got a job in the new Ford Motor Company factory in Long Beach and retired with a gold watch and enough Ford stock to start college funds for his great-great grandchildren.

We can all tell similar stories about young people who were not successful in school – but have been successful in life. Unfortunately, those days are over, and it's taken us the last half of the 20th century to accept that we need to seriously question the work of the Committee of Ten. Children who can't find success in school today are going to have a much harder time competing in the 21st Century marketplace.

Of course, our schools look very different from the ones our grandparents attended … or do they?

I remember wondering about the inkwells in the desks at my elementary school in Pasadena, California. I remember cloak rooms and clay pots that had been there since the school was built circa 1910. Smart Boards have replaced the old blackboards with white chalk that I used when I started teaching in those same rooms in 1968 … but I'm certain my room would have reminded my grandmother of the schools she had known.

So what has changed? Short answer? Everything.

We all know that we live in a world that would not be recognized by our grandparents - or even our parents. Yet not only do we send our children to the same school *buildings*, we tolerate - and even insist upon - the same educational practices that may have served our parents well but failed many "Baby Boomers" of our generation and continue to fail so many of our children today. Neale Donald Walsch put it this way: "You are educating your children for your past and not for their future."

ELON MUSK AND ANALOGY THINKING [1]

It's pretty much human nature when something isn't working well to try to identify the problem as soon as we can and immediately figure out how to fix it. When it comes to teaching kids how to write, however, it's a little more complicated than that.

Elon Musk, CEO of Tesla and SpaceX, suggests that there are two ways to think about solving any problem. The first approach is the one we usually take. He calls it "Analogy Thinking" and it goes like this: We see something that isn't working very well. We take it apart, analyze it, figure out what part of it isn't working right, change that, and put it back together again. The end-product may be "new and improved" … but it's basically just the same old thing with new bells and whistles – and sometimes with a complicated new instruction manual!

When it comes to education that's what Dr. William G. Spady says we have been doing with every attempt at school reform since 1892. He calls it "rearranging the deck chairs on a sinking ship." It has occurred to me that since Spady wrote his 1998 book *Paradigm Lost: Reclaiming Education's Future,*[2] we have simply been adding deck chairs to the point that they can't be moved around anymore and the ship is sinking under its own weight.

Let's go back to imagining your perfect school.

You probably started with a school that you remember liking a lot. Maybe that was a childhood school, or perhaps it's the one you teach in now. Since I'm a Baby Boomer and I have fond memories of my first-grade class in 1951, my thinking might go something like this:

> "*George Ellery Hale Elementary School in Pasadena, California was a wonderful school, and old Mrs. Horton was a great teacher. So, let's update the textbooks, buy some new furniture, and iPads and internet … and there you've got it.*

Oh wait. That doesn't work for you?

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[1] Elon Musk on First Principles: https://www.youtube.com/watch?v=L-s_3b5fRd8 (22 min. 37 seconds)
[2] Spady, William G. *Paradigm Lost: Reclaiming America's Educational Future.* Arlington, VA: American Association of School Administrators.

So … you tell me yours. I'm serious. Take out a piece of paper and write draw what you see. Take your time …. Write about it. Make a list of what you liked … and while you're at it … list some of the things you would change.

What about that first school where you taught when you were fresh out of school yourself. Were you as surprised as I was when that first check arrived and you realized you actually were getting *paid* for getting to do what you had always dreamed of doing? What was it about that experience that you liked so much?

Or if that one doesn't work for you … try to think about an experience with teaching or learning that you really did love. Again, stop there for a while …. Draw pictures, make lists. Your perfect school doesn't even need to be like anything you've ever seen before, so take your time and have fun with this.

That's Analogy Thinking and it's really, *really* fun. Fun, that is until too many designers get in the room and start arguing for *their* perfect school.

1951 - THE BABY BOOM

When the Committee of Ten decreed that all high schools be organized around Carnegie Units, the high school curriculum was standardized across the country making it possible for universities to decide who was "college material" and who was not. Fifty-four years later, in 1951, in order to accommodate the baby boom of 1946, assessment and evaluation also had to be standardized in order to cover the curriculum that had already been standardized in 1897. Since then, countless programs of school reform have come and gone, but every single one of them have been based on Analogy Thinking.

So, in a nutshell, that's pretty much where we are now … except for the *most* radical change that has ever hit education – and the world: The microchip, computers, the Internet, instant access to information and, of course, social networking.

It's interesting to see how educators who are stuck in Analogy Thinking have used computers to further standardize their programs, while others have been able to take a step back and look at the bigger picture – one that almost always forces them into First Principle Thinking.

The real problem as I see it is that we are still trying to tweak an educational system that is over 200 years old and is rooted into a social structure and economy that has long since become history. Our schools have been compared to the "dead horse" that we continue to beat hoping that they will rise up and function as they did for us and for our parents.[3] The increased number of families who choose to homeschool their children – as well as the boom of public and for-profit charter schools – are all evidence that we need to go far beyond "tweaking."

None of this, however, helps the teacher who is still trying to serve the children in his or her classroom, so major school reform is not going to be the focus of this book. To extend the metaphor of the sinking ship, we may not be able to rearrange all the deckchairs – but on a small scale one teacher can make one stateroom look nice and keep a few of the children safe as we wait to be rescued by enlightened policy makers.

FIRST PRINCIPLE THINKING [4]

With First Principles you boil things down to the most fundamental truths …

and then reason up from there."[5] Elon Musk

The other way to look at a problem is what Musk calls "First Principle Thinking." This is how he looked at storage batteries and rocket engines when he came up with the ideas that are the basis for Tesla and SpaceX – as well as PayPal which he co-founded in 1999. *First Principle* thinking takes time. "With Analogy thinking, Musk says, "we are doing this because it's like something else that was done, or it is like what other people are doing. With First Principles you boil things down to the most fundamental truths … and then reason up from there."

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[3] https://www.amazon.com/You%60re-Riding-Horse-Dies-Get/dp/1884548253 https://www.amazon.com/Stop-Beating-Dead-Horse-Education/dp/061598844X#reader_061598844X (Books on order)

[4] Elon Musk: https://www.youtube.com/watch?v=L-s_3b5fRd8 (22 min. 37 seconds) / https://medium.com/the-mission/elon-musks-3-step-first-principles-thinking-how-to-think-and-solve-difficult-problems-like-a-ba1e73a9f6c0

[5] http://www.businessinsider.com/elon-musk-first-principles-2015-1

Very different from simply "re-arranging the deck chairs."[6]

So now, let's go back to imagining and think about something else:

What is something new you have learned lately? It doesn't have to be something big … maybe it was just how to start your car with jumper cables. (OK … I thought of that one because I've never learned how.) Perhaps you found a new recipe and realized that you needed to do a little research in order to find a particular ingredient. Or, if you're my age, you decided to learn how to find apps for your phone.

What popped into my mind was an experience I had a couple of weeks ago with a friend who was having trouble with her iPad. I was amazed when we walked into the Apple Store because I don't use Apple products. I have only seen these from the outside, so I imagined that they were *"stores."* You know … where you go to buy stuff … and have salespeople try to sell you what they think you should buy. Not so. What we found was something that reminded me a lot more of a modern, upscale library of sorts … with knowledgeable people ready to answer questions when I was ready to ask them.

If you compare learning in an Apple Store to learning in almost any school in the country, you'll begin to get a feel for *First Principle Thinking*. My guess is that Elon Musk wasn't interested in fixing what he saw as broken; he was more interested in creating the world as he would like to see it become. Perhaps that is why, in 2002, he decided to drop out of a Ph.D. program at Stanford after only two days. He was 20 years old and had just become a US citizen. "School" as we know it was just not working for him.

I'm just guessing, of course, but perhaps he realized that even at the graduate level, "school" just prepares us for the world as it is, not as he believed it could be. That was probably about that time he arrived at the same conclusion that others have in the past. Eric Hoffer put it this way:

[6] It's important to note that this idea did not originate with Elon Musk. Over two thousand years ago, Aristotle defined a **first principle** as "the **first** basis from which a thing is known." ... In practice, you don't have to simplify every problem down to the atomic level to get the benefits of **first principles thinking**. You just need to go one or two levels deeper than most people. (Google search – origin-first principles)

In times of change, learners inherit the Earth,

while the learned find themselves beautifully equipped to deal with a world

that no longer exists.

Elon Musk did not try to fix Education … he just left. Unfortunately, that's what so many of our kids do today – maybe not in the same way as he did - but their minds just go away and focus on what they want to do when they "get out of school." As one kid put it "I have to power down every day when I get to school."

I'm not writing because I think education needs to be fixed. I'm writing because I like to imagine another way to learn. A more natural way. The way the human brain likes to learn. The way we are learning all the time – whether we realize it or not.

I have been away from public education for 20 years. In 2017 I attended the annual convention of the Association for Supervision and Curriculum – one of the largest educational organizations in the country. As I was walking around the exhibit area, I knew exactly how Rip Van Winkle must have felt! Twenty years had passed, and I had entered a new world. I met many "kids" who as students had benefited from the creativity and innovations of the 1980's.[7] As confident young teachers they have developed exciting new educational software and see themselves as entrepreneurs who want to transform education to better serve their own children and future generations.

[7] More about the 1980's in Chapter 4: Rethink Writing