Section One

Understanding the Dynamics of the 'XYZ' Era of Education

This chapter defines three specific generations of individuals currently in the classroom, introducing the unique dynamics created by the combination of these three vastly different groups. Within this context, it addresses the need for teachers to adjust their teaching strategies to meet the unique needs of their learners while relating these core ideas to other information currently available in the field of teacher education.

The 'XYZ' in the title of this book refers to the three generations populating today's classrooms and the implications this has for teachers trying to create a high-impact learning environment. The term "Generation X" was coined by Canadian Douglas Coupland, whose first book, *Generation X: Tales for an Accelerated Culture,* became an international bestseller and popularized the terms "McJob" and "Generation X." Generations Y and Z took their names in logical progression. Although demographers draw their lines in slightly different places, the following generational delineations are generally accepted:

- Generation X: 1960–1979
- Generation Y: 1980–1995
- Generation Z: 1996–Present

In other words, right now we have primarily Gen X teachers instructing Generations Y and Z. And this particular divide is creating a unique set of circumstances in our classrooms.

Of course, there have always been generational divides between teachers and students—such is the nature of the supreme arrogance of youth. But the differences between the current generations in our schools are unprecedented—because they bridge the *digital* divide. They reflect the extraordinary differences in the way we now communicate, socialize, play, and learn created by the introduction of the Internet. What this means in the classroom is that, for the first and perhaps only time in history, we currently have what Marc Prensky in *On the Horizon* refers to as "digital immigrants" teaching "digital natives" (2001).

This unique situation has profound implications for our classrooms—and not just in terms of technology infrastructure.

For clarity, let me state up front that this book does not address the need for technology in our classrooms or the issue of technical literacy for teachers. Schools are all too aware of these requirements and most are responding admirably. Despite a chronic lack of resources, technology is being embedded in the teaching process: teachers e-mail homework to their students; video conferencing enables cultural exchanges; and educational websites such as Mathletics are being included as core curriculum (www.mathletics.com).

This book addresses a lesser-known consequence of the digital divide—the fact that exposure to digital technology from birth hard-wires the human brain to learn differently. In the online environment, today's kids are exposed to high levels of sensory stimulation and learn experientially. You may notice they don't read the instructions on a computer game—in fact, there usually *aren't* any instructions—they simply immerse themselves in the virtual world and learn by trial and error. And they learn easily and quickly.

For most of these students, their online learning experience isn't replicated in the classroom. In fact, the traditional classroom—so familiar and normal to Gen X teachers—presents Gen Y and Z with an almost *opposite* learning environment from the one they naturally thrive in.

To bridge this divide, as teachers we need to understand not only the world of our students but also our own biases created by our upbringing. No matter how technically literate we might be *now,* we have to remember that our childhoods were technologically barren compared with those of

our students. As children who watched Neil Armstrong walk on the moon, we might have felt we were growing up in an age of technical marvels. However, as a mouse click at www.apolloartifacts.com will tell you, Apollo 11 had less computing power than a mobile phone.

Consider the radical differences in standard technologies across the XYZ generations:

Digital Immigrants	**>**	**Digital Natives**
GEN X (1960)	**GEN Y (1980)**	**GEN Z (1996)**
TV	High-definition TV	Web TV
Video	Video games	Online gaming
Analog cell phones	Digital cell phones	Bluetooth phones
PCs	World Wide Web	Second Life (virtual world)
Vinyl records	CDs	DVDs
Fax	E-mail	Skype

Consider also the different world of work schools are now preparing students for, compared to previous generations.

The school system for Gen X students was a construct of the industrial age. Schools prepared students to work in a manufacturing-based economy. Factory workers needed to turn up on time, listen to and obey instructions, and perform rote tasks. The traditional school system—ruled by the bell, with students listening in silence and learning by rote—turned out ideal factory fodder.

In stark contrast, Gen Y and Z graduates will primarily be employed as knowledge workers in services-based economies. In these economies, most repetitive functions are automated, and workers are valued for their ability to synthesize information, solve problems, think laterally, and be innovative. At the same time, technology convergence, globalization, and environmental concerns are increasing the number of telecommuters working from home—people who don't have to "clock in" and can choose the hours they work.

As Ken Robinson explains in *Out of Our Minds*, to develop workers who will succeed in this new environment, schools need to foster creativity, self-motivation, and flexibility—without letting the educational model descend into anarchy (2001).

Thus, as teachers today, we are teaching students whose brains are hard-wired differently from ours in a learning environment designed for a

different economy. Simply put, we and our conventional classrooms belong to a bygone era of learning.

Which begs the questions: What educational philosophy can we use for today's students? Where do we find new approaches that better fit the generation of students in today's classrooms? Do we need to essentially reinvent the educational wheel?

Hopefully not. But to be effective in today's unique teaching environment, high-impact teachers need to view the entire educational mechanism from a different perspective. We need to base our teaching choices on the generations doing the learning—not on our own experiences of education.

But if experience can't be our guide, where do we look to find the most effective ways to motivate, inspire, and teach? Perhaps the answer is very close at hand. Perhaps the answer can be found in closely observing kids and teens when they are *not* in school. In other words, we need to observe students in their natural world and ask: In this place, what works for them? What are they excited about? What are they interested in? What are they curious about?

If we can isolate and identify what works in their natural learning environment, we can then bring those strategies into the classroom and create lessons that truly work for our new generations of digital natives.

The Alien School

To grasp the significance of the deep divide between the generations, take this idea further and imagine the following situation. A highly evolved race of alien demagogues is cruising the universe studying the ideal learning environments for different species. They arrive at a small blue-green planet, about 4.5 billion years old, three out from a pale yellow sun.

Our alien visitors have never come across human beings before and aren't even aware we have an existing education system. But they have a tried and trusted process for constructing highly effective learning environments. Their starting point is to *learn how humans learn naturally.*

Like zoologists trying to create an artificial environment that captive animals will thrive in, the aliens start by studying how children and teens assimilate new information in their natural habitat. Their mission is to find out what makes these strange creatures interested, intrigued, and curious. Unencumbered by the knowledge of how traditional schools operate, they observe kids in their home environment—at play and with their friends—to discover what physical, emotional, intellectual, and social stimuli promote learning.

What do they observe? Perhaps they notice how movement helps the human body stay awake and engaged.

Perhaps they realize how much kids learn from their peers and the significance of *social interaction* in children understanding, engaging with, and remembering new information. Perhaps they see how small successes build confidence and how much children need the encouragement of celebration.

They're bound to observe the prevalence of *music*—the way kids have a soundtrack to almost every aspect of their lives. Perhaps they recognize the potential of music to encourage positive behavior in the classroom, from using it in the background to set an emotional tone to signaling the beginning and end of activities.

They certainly notice that kids learn best and fastest when they're having fun—or when they can see an immediate benefit from applying their learning. From this they extrapolate the importance of making learning meaningful. As Joe Kincheloe, Patrick Slattery, and Shirley Steinberg explain in *Contextualizing Teaching* (2000), the aliens realize their school would be wise to focus instruction on information that is related to the students' real world.

The aliens also observe the accelerated pace of experiential learning and the impact of visual and audio stimulation on capturing attention and assisting recall.

After more in-depth research, they discover that when kids are scared or stressed they *stop* learning. In fact, when alien scientists study the human brain, they discover that, in situations involving threat or anxiety, brain function changes quite dramatically. Specifically, they find brain activity decreases around the midbrain and neocortex while it increases in the brain stem and cerebellum. This in turn generates behaviors that are instinctive and habitual, while decreasing the higher-order information processing that is an essential function for learning.

Based on this finding, the aliens decide that for effective learning to occur students need to feel emotionally safe. They correctly deduce that, even in a relatively mild threat state, learners will neither perform at their best nor will they process or encode information at a level conducive to long-term retention. They realize that for effective learning to occur, students need to be relaxed, focused, and at ease—generally feeling pretty good about themselves and the learning environment.

Meanwhile, the alien observers notice that kids don't appear to learn well if they're bored and hypothesize that one way to avoid this is to physically engage them in and emotionally connect them to the learning process.

The aliens don't know it, but they have stumbled across an educational theory human teachers have been aware of for over 20 years—the theory of creating an enriched environment for learners, as put forward by Marian Diamond in her book *Enriching Heredity* (1988). Simply stated, Diamond spent years conducting experiments comparing the developing neurology

of the brains of rats in enriched environments (these guys had plenty of things to do) with those raised in more mundane environments (these guys were bored most of the time). The results were clear—the more enriched the environment, the better the brain develops.

Finally, after months of research, the aliens move on to the next step: designing their school. Having observed the natural world of human learners and identified the importance of highly stimulating classrooms, what sort of educational environment will our aliens design?

Surely it would be highly interactive and engaging—full of music, movement, surprises, color, and laughter. Students would either enjoy the learning experience or keenly understand the relevance of content—and probably both! Learning would be embedded during play, application, performance, and conversation. Wouldn't it?

How likely is it that our alien designers would suggest the best environment for human beings to learn in is a classroom where kids are expected to sit still and listen to someone else talking for 45 minutes at a time?

In fact, wouldn't this traditional environment seem *alien* to today's students?

Before you dismiss this imaginary situation as simplistic, forget the aliens and think about the difference between the traditional classroom and the world kids inhabit outside school. For example, consider the issue of social interaction. In the world beyond school, students communicate with each other—if not their parents!—*all* the time. They share, discuss, plan, interact, and live life through text, online chat, YouTube, Facebook, blogs, phone calls, and sometimes even real face-to-face conservation.

Yet students stride directly from that reality, where they share every thought with their social network, into a traditional classroom and are told to turn their phones off and be quiet. In this new situation, their only official outlet for verbal interaction is to speak in front of the entire class. For most students, this is not a comfortable mode of communication, but rather an extremely high-stress situation, very *un*like their normal social interactions where they are protected and emboldened by the anonymity of the Web.

This is not to say that students should be permitted to continue with their social lives during class—it merely illustrates that the huge divide between the current adult and youth generations is being replicated in our classrooms.

To bridge this divide, we teachers must begin by setting aside our traditional ideas of how things should be in the classroom and accept that our students really have grown up on a different planet. To create intelligent life in our classrooms, we must study the environment Gen Y and Gen Z thrive in *outside* school and use these stimuli to promote learning.

Essentially, this is how the collection of High-Impact Teaching Strategies in this book developed. They all in some way try to recreate the environment in which today's kids learn easily and quickly—based on our rapidly developing understanding of how the human brain encodes, processes, stores, and recalls information. They are designed to:

- Reduce or remove any trace of threat from the learning situation
- Make content meaningful for students
- Promote physical stimulation to keep brains alert
- Use social interaction to assist understanding and recall

The strategies are partly based on and use ideas from the constructivist approach to teaching. At the simplest level, constructivists do not believe that knowledge is simply transferred from the mind of the teacher to the mind of the student. Instead, as the teacher speaks, they believe students are processing the information and *constructing* meaning from it based on a wide range of factors.

These factors might include—but are certainly not limited to—any previous experiences the students might have had with the topic, such as their emotional state at the time of the lesson, their feelings toward the teacher, and their feelings toward the topic. Consistent with this philosophical approach to instruction, this book explains how to design instruction so the meaning students construct most closely matches what you intended them to learn.

Incorporating High-Impact Teaching Strategies into your teaching does not mean you have to throw away anything that currently works in your classroom. Whether you are a new or experienced teacher, the techniques are intended to stimulate your thinking on how to maximize the impact you can have on today's students. Naturally, how you choose to incorporate these ideas into your presentation style will depend on the unique combination of your personality, students, subject, and the learning context in which you teach.

Equally, these are by no means *all* the strategies you could use to build, maintain, and facilitate a high-impact learning environment. They were selected by virtue of being practical, realistic, down-to-earth ideas that will help you to create a positive learning environment for digital natives. Specifically, they all meet the criteria of requiring little or no extra budget, offering opportunities for immediate implementation, and reducing wasted effort on the part of the teacher.

This last point is important. Whether you are nurturing young students or guiding teens or even adult learners, most teachers desire a relaxed, pleasant cruise toward learning objectives. The strategies in this book will

help you to design lessons that harness the natural energy and enthusiasm of your students. The point is, if we allow students to guide the learning process, we are more likely to move quickly and efficiently toward our teaching objectives, with little if any wasted effort.

Developing teaching techniques that are effective while also being energy efficient is a critical issue for most teachers (Larkins, McKinney, & Oldham-Buss, 1985). Personally, I've encountered very few who, on completing a full day of teaching, are bursting at the seams with energy and exuberance. Not many stand at the door of their classroom, watch their students depart, then race home for a long night of dancing, revelry, and general debauchery. More commonly, they go home exhausted and crawl into bed for a nap before dinner.

For our own sanity, we need to move away from the teaching style in which the teacher is doing the majority of the work and instead involve our students more proactively in the learning process. They are, after all, the people who need to engage with our content. As the following proverb illustrates, simply telling students new information or showing them a slide about it doesn't necessarily achieve that.

> Tell me, I hear.
>
> Show me, I see.
>
> Involve me, I understand.

In other words, effective learning requires us to *involve* our students. While this idea appears very simple, and one that many educators would fully endorse, research shows it can be challenging to actually achieve in the classroom (Greenco, Collins, & Resnick, 1996).

Creating high levels of student interaction requires us to pay careful attention to a wide range of details: the emotional mood we set, the language we use, the memory strategies we choose, the methods of connecting students with the content we select, the ways of bringing movement into the classroom we introduce, and the opportunities to create productive social interaction we find, just to name a few.

These and a host of other details are addressed in this book, which focuses directly on how to bring to life the key findings of current educational theories in the classroom.

Doing so in no way detracts from traditional educational psychology or foundations of education textbooks. I fully endorse many of these texts, with three of my favorites being Anita Woolfolk's *Education Psychology* (2000), N. L. Gage and David Berliner's (1998) book by the same name, and Jeanne Ellis Ormrod's *Education Psychology: Developing Learners* (2000).

It also directly supports many of the more nontraditional texts, such as Eric Jensen's *SuperTeaching* (1988) and *Teaching with the Brain in Mind*

(2005), Bobbi Deporter, Mark Reardon, and Sarah Singer-Noire's *Orchestrating Student Success* (1999), or Louis Schmier's *Random Thoughts: The Humanity of Teaching* (1995). All of these books are excellent resources that present important theories any teacher can use to inform and improve their method of instruction.

However, while also being a nontraditional text, *High-Impact Teaching for the 'XYZ' Era of Education* is not about theory. Despite occasionally mentioning both theories and researchers, its central focus is on how you can use these theories at a practical level in the classroom to engage current generations of students.

The strategies it presents are based on a combination of two things: first, 25 years of involvement in the growing field of brain-based research and its applications to the teaching profession; and second, my own extensive experiences in educational systems throughout the world.

However strange a technique may seem to you, please know that *all* the strategies are tried and trusted. I both use them in my own teaching and have observed their successful incorporation into classrooms all over the world.

An Encyclopedia of High-Impact Teaching Strategies

Finally, before you begin to dip into the pages ahead, a word about how to use this text. This is essentially a reference book, packed with ideas to support you in teaching today's students. The sections are not intended to be read consecutively.

As you'll see, the remainder of this book is essentially an encyclopedia of empirically proven High-Impact Teaching Strategies, organized in alphabetical order.

Why the alphabet? Isn't that a bit random? Well, yes it is—and deliberately so. The truth is, there is no obvious order in which to organize High-Impact Teaching Strategies. Depending on your content, your objectives, your students, and perhaps even the time of year, your classroom will need different combinations of strategies at different times.

In other words, these strategies are the building blocks of High-Impact Teaching, in the same way that the letters of the alphabet are the building blocks of language. Put letters together in different ways and they create different words. Put the strategies together in different ways, and they achieve different learning objectives.

Moreover, you'll find some strategies that you end up using almost *all* the time—just as a vowel appears in almost every word, while other

strategies—the *q* and *z* equivalents if you will—will be used rarely, but to great and interesting effect.

This is merely an analogy. The strategies aligned with the vowel letters in this book will not necessarily be the ones *you* most commonly use. High-Impact Teaching relies on personal choice and interpretation. The teaching "language" you create from these letters is up to you.

But the analogy is useful at a simple level. Just as you don't need every letter in the alphabet to create a sentence, you don't need every strategy in the book to create an effective lesson. Similarly, some strategies will appear several times in the same lesson, just like double letters, while others will naturally and commonly fit together, like the consonant digraphs *th* and *ch.*

Finally, the strategies are presented literally as the ABCs of High-Impact Teaching to stress that we must understand these fundamental building blocks of interactive learning if we are to create meaning and understanding among the 'XYZ' generations in today's classrooms.

These strategies are the key to communicating with today's students because they create the stimuli that prompt natural learning in digital natives. Used correctly in your classroom, they will give you a strong foundation on which to build teaching strategies that bridge the digital divide.

The 26 High-Impact Strategies

A = Acknowledgment

Just as people appreciate being valued in their personal lives, students appreciate having their efforts valued in the classroom. Acknowledgment doesn't just give students an incentive to try hard next time, it's also an important life lesson.

B = Being Open

We must tread carefully when we ask students questions or open up a topic for class discussion. Without careful, conscious attention to the way we phrase these requests, we may accidentally reduce—or even shut down—students' responses.

C = Crest of the Wave

Learning occurs best in short waves of student interest and momentum. If we are sensitive to when learning "crests," we can maximize these moments with clear instruction as critical mass builds up. Then, as the wave begins to break, we can change the pace, simultaneously allowing

students to consolidate the information they've just learned at the crest, as well as reset themselves for the new section.

D = Directions

Giving effective directions looks deceptively simple. However, in reality it is far from easy to achieve and relies on technique and practice. To be truly effective when giving directions, we must understand what we are doing, master some basic techniques, and consciously put them into practice.

E = Entertainment

For today's students entertainment is ubiquitous, instantly available, and expected. This is the environment our classrooms must compete with. As teachers, we need to realize that, while entertainment is not education, education may at times need to be more entertaining.

F = Frames

Left to their own devices, students will naturally view content from their own perspectives. In other words, they will *frame* the content, based on their own experiences and points of view. Alternatively, as teachers, we can frame the content for them to shape the learning they extract from the experience.

G = Getting Responses

A primary way to verify student engagement is to ask for frequent responses. However, we need to clearly *specify* how we expect our students to respond. Knowing what they are expected to do will allow students to feel more comfortable with the responses they provide. This will heighten students' sense of security within our classrooms, increasing participation.

H = High-Quality Responses

When we want students to respond with quality responses and engage in a useful classroom dialogue, we need to give them time to organize their thoughts and prepare their answers.

I = Involve, Don't Tell

Within most lessons, there are central, essential pieces of information students most need to know. Instead of simply stating or explaining them, we need to create ways that students can truly be *involved* in learning them.

J = Jump Up

In a High-Impact Classroom, students learn while standing—as well as sitting. While traditional teaching links *learning* to *sitting,* this idea is not based on science. The fact is, students do *not* learn better sitting—sitting reduces blood flow to the brain.

K = Keen Visuals

Teaching usually relies, in one form or another, on *words.* However, the learning process is more likely to be successful if we reinforce these ideas with visuals. One of the primary ways human beings intake, process, and encode new information is through *visual imagery.*

L = Labels

Labels are words that cause a reaction in us because of our prior experiences with them. They can be both positive and negative and are context specific. By using negative labels, we make our teaching lives harder. On the other hand, using positive labels can help our students achieve more than they believed possible.

M = Music

Music should be a natural and consistent part of most classrooms. Properly employed, music can create a heightened social learning context, motivate students to engage more rapidly, and quickly establish a sense of safety.

N = Novelty

Students rarely arrive to the classroom in anticipation of being intrigued, fascinated, enthralled, and mesmerized. So when we introduce novelty, an almost magical rise occurs in their attention and energy levels.

O = Ownership

When students are personally involved in creating, presenting, and evaluating content, a subtle, although important, shift occurs in their perspective of the classroom. It gives them a new orientation toward the class, one of involvement and responsibility.

P = Pause

When we give our students new visual information, we must also give them time to process it. Depending on the complexity of the visual, this

may take only a few seconds, or as much as a minute. Regardless, we always need to make time for students to organize a mental image of the material and get used to it.

Q = Questions

How we ask questions is a key aspect of making this part of learning successful. Precisely phrased questions help us achieve the highest possible impact when we align students' thoughts in the proper direction during classroom discussions.

R = Revolutions

The circular nature of expectation and discovery is often the driving energy behind successful teaching. When students become fascinated with solving a puzzle, intrigued by unraveling a mystery, or simply want to know what comes next, they begin to take a high level of ownership for their learning. We can create this effect by introducing an *open loop,* which we then close as the learning comes full circle.

S = Socialization

For teaching to be effective, students need to talk about what they are learning. This is because, when talking about a topic, they must first think about and mentally process the information. As they discuss the content, they verbally process the ideas. As a result, they come to a better, deeper, and more complete understanding of what they are studying.

T = Tiers

An interactive lesson requires carefully regulated, sequential steps that build deliberately and distinctly on each other. Properly employed, this tier structure helps students understand ideas in the fastest manner possible, without unnecessary diversions and distractions.

U = Uniquely Memorable

It's not enough to teach our students content—we also have to teach them how to *remember* that content. One of the most fundamental issues for teaching a truly High-Impact Lesson is to somehow make it uniquely memorable to our students. And that means using explicit memorization strategies as we teach.

V = Vocal Italics

New lessons frequently bring new terms, phrases, and ideas. When students come across these new words, they often need time to fully

understand them before moving forward to related new thoughts and ideas. In these situations, giving our students a brief well-timed moment of focus will allow them to understand and remember the new term.

W = Walk Away

When a student speaks as part of a lesson, it is important that everyone can hear them clearly. If we obey our conversational instincts and move closer to the student while they are speaking, they will lower their voice. Moving in the opposite direction will have the opposite effect. The student will speak louder.

X = X-Ray Vision

Our brain constantly creates mental images to orient ourselves to the world. As teachers, we want to avoid mental images that accidentally direct students' focus toward *negative* actions or consequences. Instead, we need to consciously create images of *positive* actions or consequences in our students' minds.

Y = Yesterday Lives!

Stories help our students gain insight as to how to apply what we are teaching them and make connections for themselves. No matter how technologically sophisticated the current generations in our classrooms, announce you're going to tell a story and even the most cynical student settles in happily.

Z = Zones of Instruction

Using instructional "zones" builds on the psychological idea that similar stimuli generate a consistent emotional response. We can use this phenomenon to create a predictable learning environment in our classrooms by deliberately and consistently giving different types of instruction from particular locations.