

ÉPOCA MAGAZINE INTERVIEW WITH MARC PRENSKY (Entrevista Revista Época Com Marc Prensky)

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Q1. The term “digital natives” emerged in 2001. With the progress of internet and with more and more older users, is the term “digital natives” still a generation determined by age?

It never really was, except indirectly. Digital Natives and Digital Immigrants are terms that explain the cultural differences between those who grew up in the digital age and those who didn't. Those who did (the “Digital Natives”) have different attitudes and comfort levels towards technology as a result of their experiences.

Today there are many more adults who have “immigrated,” and, in the U.S., pretty much all our school age kids have grown up in the digital age. Brazil may be different, and I see your point that a young person who encounters digital technology for the first time when he or she is 10 can still, even when they learn to use it, effectively be a Digital Immigrant. So in some places there may be an element of the Native/Immigrant distinction that is social, or class-based. (I will be in Brazil this July, invited to speak by the Cultura Inglesa Rio. I hope to learn more about the country and its digital and educational issues.) Fortunately, the class situation is mitigated to some extent by the wide dissemination of television, game consoles, and now cell phones to more and more young people around the globe.

At some point, of course, everyone will have been born in the digital age. While there will still be differences between generations, they will be more a matter of degree than of kind. In a recent article, http://www.innovateonline.info/pdf/vol5_issue3/H_Sapiens_Digital-From_Digital_Immigrants_and_Digital_Natives_to_Digital_Wisdom.pdf, I have suggested that we are all moving to something new: *Homo Sapiens Digital* or the “Digital Wise Person”, where wisdom and understanding of the world requires using digital tools to combine what human minds do well with what machines do better. In this future world, the age distinction, and the Native/Immigrant distinction overall, will certainly become less relevant.

Q2. Many schools have assumed that teaching the new generation is about buying a digital board or installing the latest generation of computers. But there are several examples of schools (at least here in Brazil) that realized that using sophisticated tools doesn't necessarily lead to success. What really works to teach the new generation?

Putting new technology into classrooms does not automatically lead to increased learning, because technology supports pedagogy, and not vice versa. Adding technology helps *only* if there is a pedagogy in place that the technology can support.

Unfortunately, technology doesn't support the old pedagogy of "telling" or "lecturing" except in the most trivial of ways, such as showing pictures and videos. So it is essentially useless to add technology on top of that pedagogy and think it will make much difference. As one student said: "Some teachers make a PowerPoint and think they're so awesome. But it's just like writing on the blackboard."

For technology to have a positive effect on student learning, teachers must first move to a pedagogy that technology *can* and *does* support. In my book I use "partnering" as a catch-all term for the type of pedagogy in which the responsibility for using the technology falls on not on the teacher, but on the students. This pedagogy goes by many names, including student centered, case-based, inquiry-based, challenge-based, and others.

The basic difference between the old pedagogy and the new is that in the old pedagogy students are just told—and there is nothing for them to do but take notes. In the partnering pedagogy, students teach themselves (with their teachers' guidance.) They therefore have a real need for all the technology tools that can help them learn and create.

Q3. In your book, you say that the right way to teach digital students is partnering, with well defined roles given to students and teachers. What are these new roles? Could you give some example of how this would happen in the classroom?

The key roles of the teacher in partnering pedagogies are those of coach and guide, goal setter and questioner, learning designer, context provider, rigor provider, and quality assurer. The roles of the student include researcher, technology user and expert, thinker and sense maker, creator, world changer, and self-teacher.

For example, suppose we wanted our students to learn about the oil spill in the Gulf of Mexico. Teachers could, if they had the knowledge, lecture about it. But it would be much better for both teachers and students—and for learning in general—if teachers instead created relevant guiding questions (depending on age and level) for students to answer, and if students, on their own, did research and created answers and explanatory projects in writing, video, or other media. The teacher's role would then be to review and discuss these answers and creations with the class to be sure that all students fully understood all the issues, and were producing materials of sufficient depth and rigor for the level at which they were. Additionally, the teacher would encourage student exploration and creativity in these areas, and the sharing of student findings with the world.

Q4. Does the role of the parent also change when it comes to helping their children do their homework? If so, how?

When a child's teacher is partnering with his or her students, the role of the child's parent is to encourage their child to be an independent learner, and to accept and reinforce the roles for teacher and student described above. A parent can also, if able, take on any of the teacher roles.

Just as with teachers, parents should never do work, or use technology, *for* the student. But parents can encourage students to use computers and other materials—at home or in libraries or schools—to find things out for themselves. They can also support students' use of cell phones and other useful technologies, when available, to do this.

Q5. In your opinion, what is the biggest challenge for teachers from now on? And for parents?

The biggest challenge for teachers—who are, after all, tools for learning (and, as humans, potentially the very best tools)—is to remake themselves into *21st century tools* for learning.

This means moving from lecturing to partnering, from being the controller and “ruler” of their classes to being the guide and coach of their increasingly self-activating students. It means moving from creating lectures and explaining to all students at once, to creating guiding questions for students and learning how to help their students find the answers to those questions quickly and accurately by themselves and with their peers.

As one teacher who has made the move puts it: “I used to teach my subject. Now I teach my students.” The effective 21st century teacher does both, and, in addition, prepares his or her students for a largely unknown future, by focusing on skills rather than knowledge.

For parents, the greatest challenge is to understand and accept that to succeed in the 21st century their children require a different kind of education than they, the parents, received. Parents need to recognize that the reason for this is that the context that their children are growing up in and will live in has changed dramatically.

Q6. You state that teachers don’t need to have the same knowledge about technology as their students. How is this possible?

It is possible in the same sense that people who teach about books or movies do not need to necessarily write or make them. People with a deep knowledge of what a medium can do don’t necessarily have to know how to *create* in that medium in order to help those who are creating.

If a particular teacher loves technology, and knows how to use it to create, that is fine (although they should never use the technology *for* their students.) For most teachers, however—many of whom do not understand the rapidly changing tools and are afraid of them— it is far better to let the students figure out how to use the technology available. The reason is because the students can, they want to, and they can, in general, do it easily. The teachers can remain in the role where they are generally more comfortable and for which they are well-suited i.e. the role of constructive critics of their students’ work. All teachers should know what the different technologies do and are good for, but teachers do *not* necessarily know how to use these technologies “hands-on” to be effective.

A useful way to look at this is through a verb-noun distinction. We most often see technology as various “nouns”, i.e. email, Wikipedia, PowerPoint—tools that accomplish things. But these are, in education, really tools to learn and practice certain *skills*: email is a tool for *communicating*; Wikipedia is a tool for *learning*; PowerPoint is a tool for *presenting*. What is important to recognize is that the verbs (i.e. the skills we want our students to learn and master) stay pretty much the same, while the nouns (i.e. the tools), especially today, change rapidly. For communicating, for example, email has already changed, for many young people, to texting and twitter. For learning, many students have moved from Wikipedia to YouTube. For presenting, PowerPoint may change to Flash or HDML4.

Teachers need to focus on the verbs, and not the nouns. Verbs such as thinking critically, presenting logically, communicating, decision making, being rigorous, understanding context, and persuading (there are many more) will not change in our students’ education. But the best tools to learn and practice those verbs will change, and often. That is why it is so important, in these times of ultra-rapid change,

that educators don't over-invest in any one tool (as we have, in the past, say, in textbooks: a "noun" that no longer serves us well.)

Q7. Teachers knew that the traditional way of teaching (students listening teacher explanation and taking notes) was not working before the development of the internet on a large scale. Also many teachers were already doing great work using techniques that had no connection with technology tools (ref the teachers referred to in Doug Lemov's book "Teaching like a Champion"). After all, hasn't engaging students always been a huge challenge? What is the difference now?

Engaging students has always been an important part of a teacher's job, although educators have always known that even with their best efforts they couldn't engage every student, and that they often missed many of them. Sadly today, despite many teachers knowing (and seeing daily) that the traditional ways no longer work, they keep doing them, lacking alternatives. And while certainly there are today, many good teachers doing great work, those teachers are, percentage-wise in most places, typically in the minority.

Today's students have changed, and the things we need to do to engage them have changed as well (although less so for our top students, who tend to be more self-motivated and engaged.) Teachers tell me "I could stand on my head and do cartwheels in front of my students, and it wouldn't matter."

The difference now is that students expect different things than traditional teaching provides. Here are 10 things that today's students tell me they expect from their education:

1. They want to be respected, trusted, and have their opinions valued and count
2. They want to follow their own interests and passions
3. They want to create
4. They want to use the tools of their time
5. They want to work on group work and projects (with ways to prevent slackers from getting a free ride)
6. They want to express and share their opinions
7. They want to make decisions and share control
8. They want to connect with their peers around the world
9. They want to cooperate and compete with each other
10. They want their education to be not just relevant, but REAL

I applaud Doug Lemov for having achieved much in the small, carefully controlled environments of his Uncommon Schools. Other small charter schools—all of which all carefully hand-pick their excellent teachers—have achieved success as well.

But in education we have two simultaneous goals. We want to educate our students for the day they leave us (and go to the next grade, or to a job) and, at the same time, we want to educate students for the rest of their lives. In the past, when things changed very slowly (or not at all), those two goals were the same. But now they have diverged, widely, because our students' long-term future will be very different from their life today in a great many important ways.

Lemov addresses only the first goal, i.e. preparing our students for the day they leave us. To do that, since we still have basically a 20th century system, Lemov's goal is an excellent 20th (or even 19th) century education. He's probably right in saying that those who follow his recipe closely produce that

kind of education. He may even be right in saying that many of those who receive that education have success on 20th century-type tests, and even get into our 20th century college system.

What we need, though, is a *21st century education* for our students. We need to prepare them for a largely unknown future in which they will have to survive not on what they know, but on what they can do, and on how rapidly they can learn and change. Lemov's "techniques" for classroom management do not address this at all. He advocates chairs in rows and the teacher in the front (except occasionally), explaining to and calling on students. I strongly believe that what we will get from such a system is students who are well-prepared for a 20th century world that no longer exists.

(There is another important fallacy about Lemov's approach: it cannot be done to any scale. 20th century teaching, in Lemov's view (and I think he is right in this), is a lot like golf—there are a lot of little skills to master, and they all have to work together to have a good outcome. Lemov presents teachers with a list of more than 50 techniques (all broken down into smaller sub-techniques) that teachers would have to do better to be the old-fashioned "champions" he espouses. While many of these things make sense, particularly in the context of a 20th century classroom, they read very much like a golf book or magazine—i.e. work on this, work on that (most of the things he espouses require a great deal of skill, effort and practice to accomplish.) But as hard as they work and try, most golfers never get very good. There are only 100 players on the PGA's top tour. Only a handful of those have won tournaments, and only a handful of those have won majors.

There is, in fact, a reason for this, and it is known, in statistical circles, as the Lotke curve. If I may get technical for a moment: Many assume that the abilities of all teachers would fall, like many things in the world, along a bell-shaped or "normal" curve, with most teachers at or near the average (middle), and fewer out on the tails, as either extremely good or bad. Were this the case, Lemov's approach might, in fact, work. But it is not the case. In teaching, as in golf, you have independent (although complementary) skills—Lemov's 50— *each of which has its own bell curve*, just like driving, chipping and putting do in golf. In such a situation you get a Lotke curve—the number of people mastering all of the skills (or enough to be very successful) is exceedingly small. In pointing out his "champion" teachers, Lemov is essentially telling us: Look at Tiger Woods, Ernie Els, and Phil Mickelson. Here are 50 things they do. Just practice them and you'll be a great golfer.

Unfortunately, no matter how hard people try, it just doesn't work out that way, except in a small number of cases—far smaller than the number of good teachers we would need—and even that assumes we want 20th century teachers, which we don't.

Note that Lemov's "Uncommon Schools" program reaches under 6,000 students (with a goal of only 12,000) out of 55 million students in the U.S., and one billion in the world. They have only 200-300 teachers out of the 2.2 million in the U.S. (.0001%), and their goal (i.e. what they think they can produce) is only double that.)

So I doubt very much whether Lemov's ideas, although based on observations of good teachers, will greatly improve many people's teaching. It is a fallacy that many share to think a list (typically a long list) of techniques is going to make a large number of people great golfers, artists, game designers, or, in this case, champion teachers. As the Lotke curve shows, there is a reason why we have so few champions—relatively few people can do everything needed and make it matter.

But the *real* danger in Lemov's book and approach is that *it never brings education into the 21st century*. "We should show reverence for the past, but not live in it," says designer Deborah Needleman.

I do share with Lemov the position that improving what goes on in our classrooms *is* the right way to improve our kids' education, and I agree that we want our teachers to change. But what we need our teachers to do is not master the skills of the past, but instead master the skills of 21st century teaching: of partnering, coaching guiding, goal setting and questioning, designing learning, providing context and rigor provider, and assuring quality. Some of these skills, to be fair, are addressed by Lemov—but only in a 20th century classroom context.

By focusing only on the teachers' doing the traditional pedagogy better, the results—even if they are good—hardly matter. What good is it to learn to "stand still when you give directions" (a Lemov recommendation) if giving directions to the entire class at once is the wrong thing to do? It is not even clear that raising our students' grades on standardized tests—even if we could achieve it— is the right goal to be pursuing. Will that actually prepare our students best for their long-term future? The changes Lemov suggests, while they do improve the old system, do not take into account our changing students, nor do they see things from their point of view. Because they don't focus on preparing students differently by changing the goals and the pedagogy, in the long run those ideas will fail us.

But, as I said, I do agree teachers need to change what goes on in the classroom. Still, very few, if any, teachers are going to change 50 things—it will be great if they can change just a few. (I suspect if you gave *any* people, in *any* profession (including journalists) 50 things to have to change or improve in order to do their job well, you would succeed only in confusing and demoralizing them.) So my own list of things for teachers to do differently is far more modest. All of the six things listed here involve motivating students to want to learn, and all are all doable immediately. I believe all teachers can motivate their students by:

- making their education real (as opposed to just what is needed, say, to get into college)
- knowing and using each student's passion
- lecturing and "telling" far less
- using existing relaxation programs to put students in the right frame of mind for learning
- connecting students with peers around the world
- using the cell phones that the students already have in their pockets (and sharing them when they don't) for instruction.

Longer term, we will be best served, I think, by an education system that teaches every student, in every subject and situation to:

- Figure out the right thing to do
- Get it done
- Work well with people and machines to do it
- Do it creatively, and
- Continually do it better.

That is the subject of my next book.

Q8. You suggest in your book that the best way to motivate students is through his or her passion. How are “digital natives” more prepared to find out and follow their passions?

It’s not that Digital Natives are more or less prepared to find and follow their passions. It’s that up till now, most teachers (speaking at least for the U.S.) did not think student passions were an important part of learning, and so they ignored them. Most U.S. students will tell you that most of their teachers don’t know their passions, and most U.S. teachers will admit that they don’t know the passions of most of their students. I suspect this is the same in other places.

In the past this may have mattered less, because young people were not as encouraged (by the media etc.) to be as individual and creative, nor did most jobs require it. But today they are and they do. Those students in the middle and bottom tiers know they no longer have manufacturing or other traditional jobs waiting for them. Absent these traditional routes to employment, their passion is all that is left to guide them as the new world quickly evolves.

The good news, though, is that technology has opened up numerous new ways for young people to discover and follow their passions. Innovations such as cell phones, You Tube, search, social software and other technologies let young people pursue whatever interests them, and connect with others who do too, in a much deeper way than in the past.

Additionally, technology allows young people to make real, meaningful contributions much earlier. A young man who loves motorcycles told me how he had created and posted to You Tube many videos about repairs that he had figured out for himself, and wanted to share with the world.

Q9. Some critics of “digital natives” and “digital immigrants” state that it could be dangerous to change schools and the way of teaching without considering two things: the different levels of knowledge in how to deal with technology inside the group of “natives” and also the fact that most of this generation just doesn’t have access to technology at all. What is your opinion about this?

First, I think it is much more dangerous NOT to change schools and our way of teaching, since most acknowledge that the old way no longer works. But it is important to realize that the change required is NOT just adding technology—or doing the old way better—it is finding a new relationship (as partners) between teachers and students. Once this is done, students will use whatever technology is, or becomes, available to help their learning, with powerful results that will, I think, surprise us all.

While there are certainly different levels of knowledge among so-called “natives”, this is something that is in no way “dangerous.” It is, in fact, easily overcome given the propensity of this generation to share and teach each other. (Digital Immigrants often don’t realize this because they were brought up *not* to share, on such slogans as “Information is Power” and “Keep it close to the vest.”) For the natives, sharing is power.

It is hard for me to believe, given the penetration of cell phones in the world, that most teachers couldn’t find enough in a classroom to have teams of 2-3 students using them (even one would do for a start.) Note that complaining that “only half my students have cell phones” is the same as saying, positively, that “100 percent of pairs of my students have a cell phone.”

The price of technology is coming down so quickly that even poor areas will soon be able to buy useful devices for those who can’t afford them. The “Hole in the Wall” program in India and the OLPC program

from Nicolas Negroponte have demonstrated that once the technology is available, it is only a matter of, literally, minutes before young people begin using it constructively. Providing just one \$100 Flip video camera to every world classroom would do wonders for students' creativity, learning and sharing. (Are you listening Bill Gates?)

Q10. How do you see schools in the near future? Will technology replace classrooms?

Although I don't think herding kids into classrooms is the best way to teach 21st century kids, I'm afraid we are likely to see the current types of schools and classrooms for some time. One big reason is that schools exist, to a large extent, to keep kids safe while their parents work.

The fact that classrooms will not go away makes it even more important that the teachers inside those classrooms change to a pedagogy that works for 21st century students—i.e. to some form of partnering—and don't waste their time trying to improve the old pedagogy that no longer works.

In the long term, I have great hopes for technology as a learning tool. It is already not bad for motivated learners: pretty much anything a motivated learner could want or need to learn is already online, and its presentation is getting better daily. Many schools and school systems offer online classes and even require that students take them.

But the big problem that we still have with online learning is the same one as we have with learning in general: motivating the unmotivated. We need to learn to create tools and methods that all students want to use, that contain the ideal mix of individual and group participation, and from which any student can learn what he or she needs. Eventually we will get there. Game-based learning is one possible approach, and there are others. Until then, shifting to a partnering pedagogy in our classrooms is our students' best hope.

Of course, young people will always need places to get together for sports, dramatics, and other group participation activities, and we may always have schools. But the classroom, as we know it today, will eventually, I predict, outlive its usefulness for teaching.

When that will happen, though, is anybody's guess.

Marc Prensky

Marc Prensky is an internationally acclaimed thought leader, speaker, writer, consultant, and game designer in the critical areas of education and learning. He is the author of Teaching Digital Natives: Partnering for Real Learning (Corwin Press 2010), Digital Game-Based Learning (McGraw Hill, 2001) and Don't Bother Me, Mom, I'm Learning (Paragon House, 2006). Marc is the founder and CEO of Games2train, a game-based learning company, whose clients include IBM, Bank of America, Pfizer, the U.S. Department of Defense and the L.A. and Florida Virtual Schools. He is also the creator of the site www.SocialImpactGames.com. Marc holds an MBA from Harvard and a Masters in Teaching from Yale. More of his writings can be found at www.marcprensky.com/writing/. Marc can be contacted at marc@games2train.com.