Marc Prensky

Creator of the terms "digital native" and "digital immigrant", writer and lecturer on education

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Interview conducted by:
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Marc Prensky (born March 15, 1946, New York City, United States) is an American writer and speaker on education. Prensky received his academic training at Oberlin College, Middlebury College, Yale University and Harvard Business School. He has written hundreds of essays and seven books, of which the following stand out *Digital Game-Based Learning* (2001), *Don't Bother Me Mom – I'm Learning* (2006) and his last book *Education To Better Their World: Unleashing the power of 21st century kids* (2016). But what really made him well known in the educational world was the creation of the terms *digital native* and *digital immigrant*.

You have been invited many times in Spain. Are you aware that in the world of education in our country you are very well known?

I am very grateful to be well-known in Spain, a country whose people I have loved for almost half a century—ever since I arrived in Andalucia to study flamenco guitar in the early 1970s. It is gratifying that people are discussing my ideas---even when I disagree with some academics' comments on those ideas.

Surely your best-known contribution is the idea of "digital natives". After all the research that this concept has generated -not all coinciding with this idea-, do you still think that it is a concept that corresponds to reality? In other words, do you think that the generations of students of these last decades really have a different brain and learn differently? Are they more capable to learn with technologies?

> "the terms Digital Natives and Digital Immigrants are a metaphor for many societal changes that have taken place since the advent of digital technology"

My sense is that the term "digital native" remains a useful metaphor for many. I get a Google Alert that informs me that the term is used in print, somewhere in the world, almost every day. However "digital native" has been sometimes been interpreted in unhelpful ways, particularly in the UK and Europe. Those who criticize the term "digital native" often to take it to mean that kids born after a certain date *automatically* know more about the details of how technology works than those born before that date. That is ridiculous on the face of it—no one is born knowing Microsoft Word! Rather, the terms Digital Natives and Digital Immigrants are a metaphor for many societal changes that have taken place since the advent of digital technology. In this larger, metaphorical sense the terms represent the big cultural change in human society that parents see in so many of their kids, with kids around the world sharing similar experiences growing up that the adults didn't.

These differences---mainly in attitudes, not knowledge---result in large part from the new technology, but they go far beyond it. In addition to young people often seeing technology as a part of being human (rather than as an external and potentially dangerous tool), their attitudes are currently in flux regarding a huge variety of important areas including, for example, privacy, property, personal relationships, security, sexuality, power, kids, violence, god, justice, money, love, government, and even time, and

> **"**some of the changes will at some point be reflected in human brains in some way**"**

space. Attitudes and beliefs are evolving rapidly and radically from the era of "the last pre-Internet generation" to today's younger generation(s)---a movement that that many, including anthropologists, acknowledge is happening. A great many of these changing attitudes are due to the new generation's experience growing up in the digital age, where young people are hugely empowered early in their lives, a world in which things often happen differently.
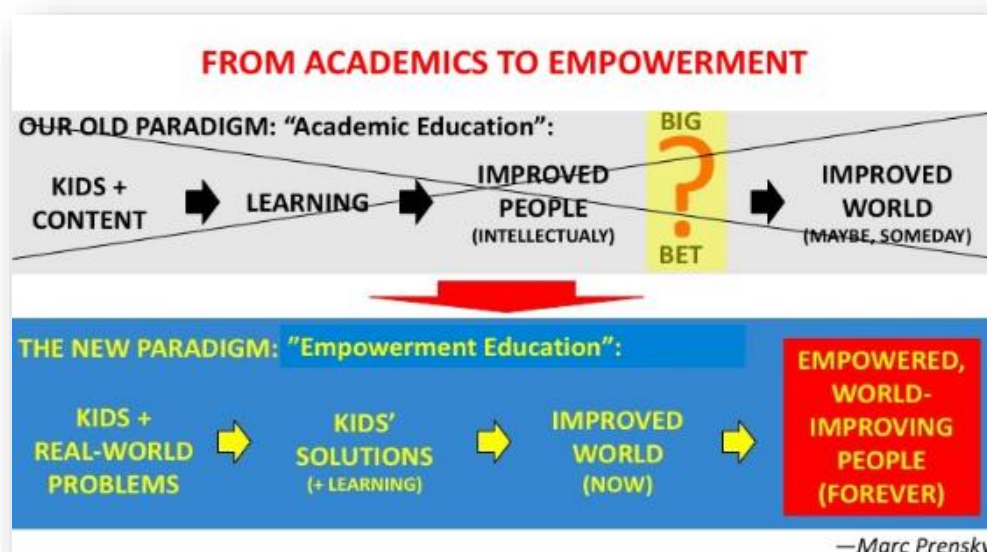
While coming to valid conclusions about permanent, inheritable generation-wide "brain changes" may be premature, we can certainly observe behavioral changes. And it has been well established over the past quarter-century that individual brains do change according to their inputs, and that genes express differently in different environments. But exactly what gets inherited, what new structures may be getting established, if any (as was the case when humans developed speech), whether all human brains are changing and under what conditions, are still questions beyond our current understanding. Hypotheses based on the data and still-primitive instruments we have are interesting---but we should not rush to specific premature conclusions about this. We can, however, observe growing behavioral differences between generations, particularly as humans integrate more deeply with machines, and suspect that some of the changes will at some point be reflected in human brains in some way.

At a recent event in Madrid you suggested that "we don't need classes", an idea that connects with the pedagogical anarchy of some 20th century visionaries who demanded the death of the school in its traditional sense. Do you really believe that the school has died? What is your model of training in the basic stages of teaching? How do you propose to remodel the education system?

> "What is evolving in our time, I believe, is the idea of what "being educated" means, and what a "good education" is"

We all want our kids to be educated, and for them to become good, effective, world-improving people---that is why we pay for schools, public and/or private. What is evolving in our time, I believe, is the idea of what "being educated" means, and what a "good education" is. In the recent past---unlike in our agricultural past---we have held a view that kids could not do anything useful for society until they had spend 6-20 years in school "learning" whatever curriculum we prescribed. And mostly for financial reasons, we delivered this curriculum almost entirely in classes of students of the same age, testing to see how much it had been "learned," and ranking students accordingly. Because most of us went through this model, many assume it is somehow the "natural" or "best" model for educating kids. But it is not the best model or even a good model, for our future. Our educational paradigm today is to put these supposedly "helpless" kids into classrooms, and direct "content" at them. We hope that most will learn the content and as a result and become "better" people, almost exclusively in an intellectual sense. We then place a **big bet** that these students will someday go out and improve their world--- In truth, few do and most don't.

I do not think schools will disappear, but classrooms, as we know them today, almost certainly will, because the new, emerging paradigm for education is to put kids together, from their earliest school days, with real-world problems that they recognize as such, which is done much better in teams (which can easily be virtual and worldwide) than in classrooms. The kids then come up with solutions to the real problems, often solutions we have not thought of. So, unlike today, things get better BECAUSE our kids are in the schools and the schools are in our communities (and our world). The bigger reward from this paradigm, however, comes later—as people whose education consisted of bettering their world continue to do so for the rest of their lives, because they know, as a result of their education, how to do so.

FROM ACADEMICS TO EMPOWERMENT

—Marc Prensky

In your latest book, "Education to better their world," you talk about how change in education needs to change the curriculum so that children improve the world and not just improve individually. How could such a change in educational model be made if, for example in the case of Spain, the government tends to show a preference for learning theoretical content?

I now think that the best way to create a transition to World-improving, Empowerment / Accomplishment education is to first create a separate, parallel, equally-valid education **along side** the current academic (or, as you say, "theoretical") education. This can be done by governments, much in the same way as they created, in many places, "vocational tracks." (It can also be done by creating separate "schools within schools.") The new "world-improving accomplishment" track---into which teachers, student and parents could "opt-in" would have as its goal creating good, effective, world-improving people who know they CAN improve their world, who know HOW to improve their world, because they have done so over and over again AS their education (rather than a goal of "academic achievement," or specific job or career preparation.

The methodology (i.e."pedagogy") in these schools would consist almost entirely of successive, world-improving projects (each with Measurable Positive Impact) by students in groups---local and world-wide. This separate-but-equal "track" of parallel and equally-valid education for

all who opt-in could run all the way from kindergarten to university.

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Today, schools that offer "Accomplishment-Empowerment-Real-world Project Education" are emerging at all levels around the world. Having such a parallel "Accomplishment" educational track benefits everyone: Those teachers who want to do something different can opt in, while those teachers who want to continue doing the old will not be pressured. Those parents who want something different for their kids have an alternative to choose that is not of "lower status" (such as vocational schools are), and that leads to a university education (although one that is different). Those students who want to be educated in the real-world rather than just in a classroom, can opt for accomplishing real projects in areas that interest them. And the places that do this kind of education will benefit from the projects being done in their communities, small and large. Yet another benefit of having two "tracks" is that *they can be compared* in terms of results, engagement, student and parent satisfaction and other dimensions, using newer and more appropriate metrics than just academic rankings and test scores.

> "technologies can be used far more powerfully as tools for getting useful things accomplished in the world"

Taking into account the model of education that you propose, what role do technologies play? Are schools really prepared to empower children in a digital world? What do you consider to be the main problem for the development of digitally competent schools - resources, teacher training, policies...-?

Technologies are hugely important in this new model, because they are becoming an important part of being human—one of our biggest challenges as humans in our coming decades and centuries is to successfully integrate humans with our increasingly exponentially more powerful machines and technologies.

But the way technologies fit in to the education of the future is not at all the way they are used in education today. Today technologies are used for getting things done that we could already do in classrooms (e.g. reading, writing research, note taking, etc.) in new ways. But technologies can be used far more powerfully as tools for getting useful things accomplished in the world. Using technology only for things humans could do in the past may add speed and or accuracy, but it adds little that is fundamentally new to education. Instead, our kids should be thinking about how to use new and emerging technologies to make their teams more powerful to solve problems they encounter in the world. As an example: Faced with the horrible school shootings in the U.S., kids who want to act are choosing, with our encouragement, to protest and vote—useful, hopefully, but those are things we could do a century ago. Today's newly empowered kids — "extended minds all networked together" — ought to be coming up with new and better solutions to this problem---and their education and educators should be empowering and encouraging them to do so.

> "Digitally competent" education… means kids acquiring more and more experience in using their huge computing power and connectedness to solve problems in powerful ways"

"Digitally competent" education does not just mean kids (or teachers) having computers. It means kids acquiring more and more experience in using their huge computing power and connectedness to solve problems in powerful ways. It means surveying millions of people from your desktop. It means solving problems with people around the world. In the new, "accomplishment" education the "training" teachers need is not in using technologies themselves, but in knowing how to best kids to come up with creative technologically-enhanced solutions to real problems. This is far more of a "coaching" than an "instructing" model The coach is not the best player on the team—the coach is the

person that can get the most out of each player and make them work well collectively.

There is no doubt that technologies are one of the driving forces behind our world today. Where do you think they are leading us and how will they change education? Will we stop going to face-to-face universities? Will the teaching of the future be online?

Technology is leading all of us into a new age of human-machine integration and symbiosis—the chief scientist at NASA calls it "The evolution *of* the humans *by* the humans". Although modern technology will bring issues and problems to solve, the overall result will be hugely positive for coming generations. (We should take note, when comparing positives and negatives of innovations, that humanity still has big issues with some of the earliest transformational technologies for humans—e.g. speech and fire—but no one advocates stopping using them.)

"Technology is leading all of us into a new age of human-machine integration and symbiosis**"**

Education—which I define as our best, or recommended, path to becoming good, effective, world-improving people—is evolving as humans evolve. This "best path" will likely, as our capacities increase, become a combination of (1) teams of people continuously doing real, world improving projects they choose and enjoy, and all getting better at it, (2) individual and team coaching in getting the projects done, in interacting, and in applying each person's unique concerns, strengths and passions to bettering their world (with the coaching done, by both humans and machines as appropriate), and (3) technology-based delivery of any needed content or skills that people need to have in order to get their projects done.

Research in Educational Technology, and in education in general, has been called into question due to its scarce impact on the educational reality. What is your opinion and where would the solution be? How could we connect theory and practice?

I know you are a research group in educational technology, but I will suggest we have to be very careful when we talk about "research" in an educational setting—I think our approach ought to be completely reevaluated. "Research" sounds like it should be useful---and looking at things in a careful way can certainly be helpful. But there is a huge difference between what is called "research" in physics, and

"research" in the so-called social sciences (of which education is one) This is because humans are so complex, with so many variables that cannot be individually controlled, that research in ANY of the social sciences has none of the validity of studying "things" (as in physics). So the results must be looked at, taken, and used very differently.

ALL social science research must be taken only as indicating a possibly interesting finding and direction, but NOT leading to any definite, valid universal conclusions. The phrases "research shows..." or "the research shows..." are among the most abused ever in education---and should be banned, unless we specify "Which research? Where? With whom? Under what conditions? Where is it reproducible? What does other research show? and more." The desire of some to make education "research-based" (now big in the U.S.) is very dangerous.

Please note that I do not question the motivation of researchers to add value—I question the process.

I believe the most important "research" we can do in education today is to look at the entire process of "education" with new eyes, and not through the thick lenses of our traditions. Who are the kids of today? How empowered are they? How much of the past do they ALL really need to spend valuable time on? How do we prepare each one of them for their individual future in a human-machine world?

Finally, we would like to ask you about open journals. Our journal is very young and is a project that we maintain a group of university professors with our time and effort to make it free and open, but it is not a journal of impact, so not everyone wants to publish in it. What do you think about open publications versus paid publications? What do you think the future of scientific publications is?

> **"**It is people's comments, more than the paper, that is, perhaps, most important**"**

I haven't thought about this very much, but I do know my ideas started to spread when my article "Digital Natives, Digital Immigrants"—which was published in 2001 in the free online journal *On The Horizon*—was found by people in Tasmania and New Zealand. I think everything should be published, online, at no charge, as soon as possible. If some editors want to collect their "favorites" and publish them together, that is fine. But EVERYTHING published should probably be preceded by a statement like: "Here's why I (or we) think the following may be useful---What do you think of it? Is it meaningful for you? Why?" It is people's comments, more than the paper, that is, perhaps, most important. How do we collect and publish these? Today academia counts publications and citations. Can we improve on that? Perhaps scholars can be judged on their comments as well as on their publications.

We are also moving to semantic, rather than just keyword search (have you seen Google's new "Talk to Books" app (https://books.google.com/talktobooks/) ? This may have some impact.

These are just some preliminary thoughts, but the question of how we spread and evaluate ideas is an important one, particularly in our new online era.

We really want to thank you for conducting this interview. Your participation is really valuable, not only for the researchers, but also for the students who are currently in training. It has been a pleasure to have your participation.

El placer es mío.

Saludos,
Marc