

# Interview with Marc Prensky on Digital Natives and AI Natives: Reframing and Empowering 21st Century Kids

Marc Prensky ile Dijital Yerliler ve Yapay Zekâ Yerlileri Üzerine Söyleşi: 21. Yüzyıl Çocuklarını Yeniden Tanımlamak ve Güçlendirmek

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Söyleşi Interview

## ABSTRACT

On January 8, 2024, as part of the career planning course event, we conducted an online interview with author and educator Marc Prensky regarding his new article "Our Coming AI Natives." During our conversation with Prensky, renowned for introducing the concepts of "digital natives" and "digital immigrants," we explored the transformative potential of generative AI. Prensky provided insightful definitions of digital natives and AI natives, emphasizing the innate familiarity and adaptability of younger generations to digital tools and emerging AI technologies..

**Keywords:** Social Media, Digital Marketing, Future of Marketing.

## ÖZ

8 Ocak 2024 tarihinde, kariyer planlama etkinliği kapsamında, yazar ve eğitimci Marc Prensky ile yeni makalesi "Our Coming AI Natives" hakkında çevrimiçi bir söyleşi gerçekleştirdik. "Dijital yerliler" ve "dijital göçmenler" kavramlarını literatüre kazandırmasıyla bilinen Prensky ile söyleşimizde, üretken yapay zekâ teknolojisinin dönüştürücü potansiyelini konuştuk. Prensky, dijital araçlara ve gelişmekte olan yapay zekâ teknolojilerine genç nesillerin doğuştan gelen aşinalıkları ve uyum yetenekleri olduğunu vurgulayarak, dijital yerliler ve YZ yerlileri hakkında kapsamlı bir açıklama sundu.

**Anahtar Kelimeler:** Dijital Yerliler, Yapay Zekâ Yerlileri, Üretken Yapay Zekâ, Güçlendirme, Gençler.

***You introduced us to the terms “digital natives” and “digital immigrants” in 2001 through two articles, and now you have introduced a new concept in your article, akin to ‘Overcoming AI Natives’. So I would like to start with these concepts. How do you define the concepts of digital natives and AI natives, and what inspired you to use these terms in your discussions?***

The idea of digital natives came to me around the time that I observed young people doing things very differently than I did. So if they needed information, these were young people, especially working for me around the year 2000, and if they needed information, they would go online. They wouldn't do what I did, which was to call somebody up on the telephone. They did a lot of different things than I was doing. As I looked into it, I said: “Well, why are they doing these things this way?” And it was because they had grown up with these tools, with these affordances, as they say, or these capabilities, which they knew were much easier and worked better. So they went right to the things they grew up with, just as I went up to the things I grew up with. Well, when you grow up with somebody, it's like being a native in a culture. It's like learning your language natively as your first language. It's different from everything that you learn after that. And so I started framing these young people as digital natives, and many of you in this room are probably in that category. And it was a useful framing. Framings are never necessarily true, but they can be useful. This was useful because people started saying, “Oh, now I see why my young people do this or act in this way or do things.” They were just born in a different time, and they're natives of that time.

Well, now we're entering a new age of artificial intelligence (AI). And so far, nobody was born in that era, except for a very few, because they are only one year old. We're starting to have young people born in that era, and the rest of us are going to be what I used to call immigrants. We're going to come, as I am and maybe many of you are, to this AI and the generative AI, and we're going to learn

how to do it. We're going to scramble around. I am scrambling around every day trying to learn how to use this better, and it's very powerful. But the next generation, our children or your children, will be native to this stuff. It will come as something that they grew up with that they used every day, whether we liked it or not. That's the important thing. We may not like it. We may not even like them using it, but they will use it just as a lot of young people in schools have already started to use ChatGPT and other things because it's there, it's part of you and it's part of your generation.

Interestingly enough, I was speaking with somebody the other day. I think we already know what the next wave is going to be. We're going to have quantum natives because we are moving from a world that was not quantum--that was very Newtonian-- to a world of quantum physics, where we're now applying that to more and more things and more and more people. But that's for the future. Right now, we're moving into this age of being extended--I call it a new body part. By this generative, I mean all sorts of AI where we can do things that we've never been able to do before. I've already made a GPT where you can ask Marc Prensky all the questions, and it will consult everything that I've ever written and everything written about me--it will speak to you and do all that. That's already here. Anyone can do that. It costs almost nothing to do it. So all you need is computer power and connections. And those things, not everybody has, but we have to bring them to everybody. I'll stop there. Where would you like to go?

***Actually, in your latest article, generative AI was highlighted as the next evolutionary capability, having the potential to significantly impact individuals-- particularly the younger generation, because your focus is on this generation. So, I would like to ask: Can you explain how generative AI is expected to impact both new and experienced workers, as well as younger individuals?***

Well, it starts very young. So here's a story I heard the other day, which is that a father is sitting with his little, I think, two or three year old on his lap looking at the computer, and he's talking to the computer, and he says, "Okay, show me a dog," and it comes up with a picture of a dog. "Show me an alligator," and it comes up with a picture of an alligator. The girl says, "No, I want a dog alligator." So the father just goes to generative AI and says, "Show me a dog alligator," and it appears. What's happened now is that by just saying words, by just speaking, we can make things happen. We can make things appear. And we're just at the very beginning of this. But it's incredibly powerful. I saw somebody had made images. They took images of famous people from history, from Nefertiti to Napoleon to anybody you want to Genghis Khan, I think was in there. And they took those pictures with the AI. In the pictures we have, they turned them into modern-looking people. They said, "Okay, get rid of all their old clothes and everything, modernity!" And then they made them smile. Suddenly, Shakespeare looked like your friend, or Dante looked like your friend. And what I think is going to happen is that these people will become our friends. We will be able to be friends with people from the past, and we will be able to invite them to virtual dinner parties. We will sit down, and they will be in all our classrooms. You might be sitting next to Shakespeare, Dante, Genghis Khan or any of these people. And that's just a very, very different world. So right now, we are in a world where you can use generative AI as an assistant, and it makes you very, very powerful. So if there's anything that you had trouble doing before... "Oh, I didn't have the time to email a thousand people individually," and "I will do that for you." "Oh, I didn't have the time to go through these 300 pages and correct them," and "I will do that for you." So it's an assistant. It's also an advisor. You can say, "Well, how can I rewrite this better? How can I do this better so that it will appeal to some particular audiences? I want to write this for statesmen. I want to write this for politicians. I want to do this." It knows how to do that. So it can be an assistant. It can be an advisor. These are the roles that we see now. But we don't know even what's coming. What does this mean? Well, one thing it

means is that we're all going to have to become more creative, because when all the routine parts of what we do as humans can be done faster and better just by telling it to do that, then we won't have to do those things anymore.

And the question is, what will we do? We will invent. Machines, so far, are not the best, they're not better than us at inventing, they're not better than us at imagination. They may be, but it doesn't matter, because, from my perspective, we are the machines. Generative AI is not something that's different from humans; it's something that is part of humans. They may not all have access to it, but it is a part of us. If I choose not to use it, if I write something and don't run it through ChatGPT or generative AI, I am just leaving out a part of myself that I could be using. And this is a very new paradigm, because, in the past, everything that was ourselves was in our brain. So you would go to school and your teacher would say, "No, don't use a computer; don't use a calculator; don't use this; don't use things that are not in your brain." That's changing. All those things that used to sit outside of us, like the calculators and the computers and all this, are moving into our bodies. They are us. So now we can access all of history. If I write or say I have an idea, I wonder what Leonardo da Vinci thought of this idea. I wonder if -you know- I have a political idea. I wonder what Atatürk would have thought of this idea, just because we're here and we are in Türkiye. We can find out. It can just go right into our writing, right into our understanding. And that is just something we could never, ever do before. So I don't think it's just going to extend us. It's going to change us. It's going to change who humans are and what they do in the world.

**Marc, as you mentioned in your article "Our Coming AI Natives," you highlighted the notion that human evolution starts with the development of internal organs and proposed a post-biological evolution characterized by the emergence of new capabilities. Why do you believe generative AI represents the next step in human evolution, and how will it shape our future?**

What I call the post-biological evolution of humans started with language. Language was something that we invented. It started, went on to, agriculture, taming fire, and adding all these capabilities: social organization, science, and writing in print. These were originally new things for us. And now they are part of humans. We don't think of humans as people who don't have these things. We think of people who have all these capabilities. And then the digital capabilities started to come. So we have the capability that we're using at the moment, where we're talking to each other from different sides of the planet. With no problems. And soon, thanks to computers, we will get rid of the language barrier. So I will talk in English, and you will hear me in Turkish. And when you talk in Turkish, I will hear you in English, and language will no longer be a barrier.

Another barrier that we've had for a long time was history and learning. And so in order to grow up, you had to; we had to put things into our head, or you had to put things into your head. And that's why you went to school for however many years—6, 12, 20, or, in my case, more than 20. And all that time, things were being put into our heads: books, authors, writings, scientific information, all these things—how to do this. Well, that period is now over. We don't have to put as much into people's heads because it's already accessible to us just by asking. We saw this happen very much with YouTube. So anybody who wants to learn how to do something, whether simple or complex, will go usually to YouTube and they'll say, find me a YouTube video that tells me how to, in my son's case, fly a plane. And the son's in; that helped; that shows me how to write an essay; that shows me how to do this. And that exists. So that was step one and that's almost a step toward AI. But AI now will go back and look at everything that it was trained on, which means increasingly all of the internet, all of human information, every book ever written, all of human history, that it can read in seconds and find the parts that are relevant. So what, for me, brings all of that stuff into our heads as we're creating, and it can tell us: "Did you think of this? Did you consider this? What about this?"

What about that?" It takes over the role that we previously had teachers do. And the reason we have great teachers like you that they have a lot in their heads and can put it together for us in new ways. Well, now we have a part of ourselves that can do that if we ask the right questions. So asking the right questions is starting to be a much more important part of growing up and learning to become a person. Because if you ask the right questions, it's right there with all the answers. It's not there for everybody yet, but it's coming fast. We now have all the satellites up there. We have five billion smartphones in the world. Almost everybody is going to have one in 20 years, or maybe before that. So this is now a human capability. The human capability is to consult everything from the past every time you want to do anything.

***So, from this perspective, Marc, I would like to move on to a more specific question because you emphasized the shift from the traditional model of putting things into young people's heads to bringing things out of their imaginations. How do you think generative AI will affect education and creativity for young people in the 21st century and in the years to come?***

I think that 20th-century education, as we did it, is sitting in rooms, learning in advance. That's what we do all over the world. We spend years sitting in classrooms, learning in advance. I think that that is going to go away for most people, not for everybody. There are people who like it. There are people who love it. There are people who want to become scholars. And that's fine. But even they will do it in a new way. For me, my solution, and this is not everybody's, is to say, "Well, what do we do instead of putting things into our heads?" My solution is to try to accomplish things. We try to impact the world. We think about what we want to do in the world. What dreams do we have? What problems do we see? What people do we want to help? And this can happen at any age. You can think about this. And then, what do we want to do? What do we imagine will help them? What do we imagine will solve that problem? What do

we imagine will work for those people? And then, with the capabilities that we have for doing things with AI, we will start getting more and more things done.

We will start accomplishing. So when we have young people, and I don't know whether they'll be in schools or in what I call empowerment hubs, but when we approach a young person, we'll say to that person, not what class do you like? What subject do you like? How did you do? What are your grades? That's what we ask today. Tomorrow we'll say: "What did you accomplish? Show me something. Point to something and show me it's better." I want you to say: "See that?" Before, it didn't exist, or it was bad. And because of what I did with my team, it's so much better.

So I think that's what's going to be the next wave of bringing up young people. Obviously, they're going to need some learning to do these things, but that comes when they're doing them. And then they're going to want the learning because they want the accomplishment. That's a real switch in the world. It used to be, well, you're young, and you don't know what you want to do. You don't know much. We'll send you to school. You'll learn a lot of things. And then, hopefully, at the end, you'll figure out what you want to do, what job you want to do, and how you want to contribute. A lot of people suffer from that because they don't really figure it out or they get pushed by their parents, culture, or other things in certain directions. But what if it was the opposite? What if we just started with the very young and said, What do you want? Oh, I want a pig dog, or I want to do this. I want something different. I want that place to be cleaner. I want this to look better. I want this to not be so hard. I want the climate to change. I want all these things. And here's what I imagine could happen: And now they have the power to start making this happen. And we have to help them figure it out. And we have to say to them that we have to show them, in fact, from the very beginning, that they have these powers. They don't know that they have these powers yet because they're so new. And I look at somebody, like, I hope you all know who Greta Thunberg

is—the Swedish young lady who's working for climate change. And she's very frustrated. She's very clear about what she wants to do. She wants to get adults to take actions that prevent some of the worst parts of climate change. And what did she do? She started out demonstrating in the rain what people have done for thousands of years. She then went to mass communications, spoke to the World Economic Forum, and spoke to the United Nations. And people listen politely. Nothing happened. And then she said, "Oh, well, maybe I can organize young people." So she started these, what are called Fridays for Future. Her strikes—small school strikes in different countries—maybe even a little larger, but for one day. And maybe that did something more. But here's the power that somebody like her now has in our world. She can reach out and contact or try to contact every young person in the world. Certainly every young person who has a phone or is connected. And she could say, if she wanted to, that my dream is that you all go on strike from school permanently. You just don't go to school anymore until something happens. Don't listen to your parents. Don't listen to the world. Just do this. But also start putting in your ideas of how to make things better. Start visiting your political representatives. Start going to these people. Start putting pressure. You have the power to do this. So because she now has the power to reach out to a generation and get them to do things that they've never done before, and for them to do these things, I just see a lot of change coming as these people become natives at doing this. Not today, because they don't know they can. But as this becomes part of their growing up, part of their humanity, part of who they are as people, and powerful, I think that change will come. While you're speaking, there are ethical considerations that I want to bring to my attention, because thanks to these technological advancements, there have been potential changes that you just mentioned, but also conflicts associated with those technological advancements.

***I would like to move on to ethical considerations. There have been potential challenges and conflicts associated with technological***

***advancements. In your opinion, what challenges might arise as generative AI becomes more prevalent, especially concerning ethics and societal impact?***

The ethics really are about harm, in my view. It's about doing good versus doing harm. If I brought up young people in the world, I would say the first thing I would say is to do the most good you can and the least harm you can. And that is, and also try to do unto others, not as the golden rule says, as you would have them do unto you, but do unto others as they would have you do unto them. So listen to them, see what they're asking for, and if it's positive, help them. But when it comes to harm and big ethical considerations, this is nothing new that has anything to do with technology. This has to do with humans. There are humans who want to harm other humans. And this happens when they have more powerful weapons. It happens when they're older. It happens when they're parents. It happens when they're teachers. It happens when they're bosses. This is part of humanity that we try to tame. We try to rein it in. That's what morality and all these things are, saying don't use whatever power you have to hurt people. And we usually limit that to people, which I think is not enough because we're people, but we'll still kill and eat animals, for example. We don't kill and eat each other. We once did. So the question is not one of technological harm. It's not what AI will do. It's what we will do when we become the next level of people extended by AI. When we became the next level of people extended by science, well, we could do a bunch of things. We could cure disease, and we could build atom bombs. And we did both. Okay. So it's the real question—the fundamentally human question.

***It was a privilege to hear these ideas, Marc. Thank you so much. I'd like to move on to my last question, which is about your institute, the Global Institute for Empowerment, Accomplishment, and Impact by Young People. What inspired you to create this institute and what is its purpose?***

It's to help young people, as we discussed at the beginning, understand that they are now much more powerful human beings than young people ever were in the past, and to help move from the idea that, as a young person, all you can do is take things in to the idea that even as a young person, you can put things out, as you so nicely said, and you can accomplish real things in the real world with real value. And so that's what you have to feel empowered, and you have to accomplish and have an impact.

Here's what I would love to have everybody have as a result of my organization: I'd love everybody to be able to say, I can, I choose, I accomplish, and I see positive results and impact in the world because of what I did. And then I do it over and over again. So it becomes a spiral that moves everybody—us and humanity—higher and higher. So the purpose of this organization is really to help people, to help young people understand how empowered they are, and to help those of us who are adults and older people, and I'm probably the oldest person in this room right now, to help the young people. Because as we help them, when we start now, when they grow up in another 20 years, they're going to have a different world. They're going to have a different attitude about what they're capable of doing and about how, when they see problems in the world, they can fix them. When they have dreams in the world, and everybody has dreams, if those dreams are positive, they can realize them. If they see people who are suffering and not as well off as they are, they can help them instead of hurting them. So that's really where I want to go. I want to go to a positive world where everybody feels powerful. Every young person, and then eventually every person, feels powerful to make the positive changes that will give us all a better world, even when we are faced with the kinds of big problems that we're faced with today.

***How can our students, or young people, be part of this institute?***

What I advocate for is for all of us to set up what I call empowerment hubs, and an empowerment

hub is thinking of it as an alternative to a school, and maybe you have both for the moment. Schools are places where you go to learn in advance. We all know that we all do that, but if you went to an empowerment hub, we would say to you, "Hello, tell me your dreams. What are the problems you care about? Who are the people you care about? And now let's work together to accomplish something that makes a positive impact on that part of the world". So these empowerment hubs can happen individually. They can happen in schools, in companies, and in organizations. They already exist in many places for age design to change. And you can create one in your own home or with people; you know, it's just the concept of saying we are going to tackle a problem together that we all care about. We're going to do it with a small team. We're going to work to understand the problem. Imagine a solution, implement that solution, and then iterate that solution and spread it around to people if it works. And that's a methodology. Some people call it feel, imagine, do, or share. It's a design methodology. Start with the people you want to help or the issue you want to help. Imagine a solution, implement that solution, and then make it better and spread it. I think everybody can do that. And you could certainly start at your university as an empowerment hub. Plenty of schools are starting them. Plenty of clubs are starting them. Plenty of companies are starting them. So wherever you are, if this is an

idea that appeals to you, I am here to help. I have this organization. We have a website. We have books. We have all sorts of things. My email, you can share as much as you want. It's my name, marcprensky@gmail.com. You can contact me. I will try to help you. Mostly if we have this idea that young people are powerful, that people are humans now, not even then it's nice when they're young, but humans are becoming a much more powerful species. Thanks to us. We invented this stuff, just like we tamed fire, just like we invented science, just like we invented writing and printing. Now, how do we use this in a positive way for all of us? How do we start early? That's what I tried to do in the world.

***Thank you so much, Marc!***

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