From Pages 21 to 23 of our book: Humanity 2050 - Full Book

Today's Education Challenge: Closing the Growing Exponential Gap

We have long maintained that educators are never being challenged as before, as they are being asked to prepare students for a world that no one understands, for jobs that do not exist.

In this YouTube video, engineer Peter H. Diamandis explains that we are moving from a linear world to a world of exponential technological change. Here is a link to the video:

https://www.youtube.com/watch?v=jndZviHWE28&t=4s

In the graph from the video, Diamandis, who can credibly be referred to as the Godfather of abundance thinking, provides us with a picture of the growing and accelerating disconnect between exponential technological change and our linear mindsets. He then correctly defines this growing gap as one of today's foremost educational challenges.

You can see the chart at minute 2:40 of the video. We recommend watching the first 3:10 of the video and then fast forward and watch from minute 9:14 to minute 10:10 to get the best visual of exponential technological change you will ever see which we have included above: https://www.youtube.com/watch?v=jndZviHWE28&t=2s

This growing disconnect is not new; according to economist Jeffrey Sachs, this disconnect has been growing ever since the launch of the scientific and Industrial Revolutions, as he explains in his book Common Wealth:

"For the past 200 years, technology and demography have consistently run ahead of deeper social understanding. Industrialization and science have created a pace of change unprecedented in human history. Philosophers, politicians, artists, and economists must constantly scramble to catch up with contemporaneous social conditions. Our social philosophies, as a result, consistently lag behind present realities."

Author and Columnist Thomas Friedman, in his book Thank You for Being Late, makes the same point more emphatically when he quotes Eric "Astro" Teller, the CEO of Google's research and development lab, as saying: "…people hear about advances such as robotic surgery, gene editing, cloning, or artificial intelligence, but have no idea where these developments will take us. "None of us have the capacity to deeply comprehend more than any one of these fields – the sum of human knowledge has far

outstripped any single individual's capacity to learn – and even the experts in these fields can't predict what will happen in the next decade or century."

Somehow, we need to close the gap in our thinking to effectively address the changes coming our way because it seems clear that the pace of change will continue to accelerate. We believe that the better we understand the nature of exponentials, the greater is our potential for filling this gap. Indeed, understanding the impact of exponential technological change is essential to understanding the 21st Century and to building a 21st Century mindset.

Understanding the Neck of the Curve, where 97% of Change Takes Place.

One important point to understand about exponential change is that over the first twenty to twenty-five doublings, not very much happens, as we see this with another example where we compare the doubling of a penny every day for thirty days with the prospect of receiving $4 million at the end of those same thirty days.

We ask our students: would they rather have a penny that doubles every day for thirty days, or $4 million? We repeat the question after ten days, when a penny doubled is only worth $5.12, and again after twenty days, when a penny doubled is only worth $5,242.88, and once again after twenty-five doublings, when the penny has increased in value to $167,772.16. Those who stick with the penny doubling after thirty days are rewarded with $5,368,709.12. T

he really important point to be made here is that 97% of the change takes place in the last five doublings. This is one of the most important points to take away from this book.

The reason is simple: technological change is exponential. Understanding that we may not see the full impact of exponential change until it is too late may very well be what is happening to our world with Artificial Intelligence

As we discuss in future chapters, we may no longer be at the knee or the curve. We are at the neck of the curve, where the pace of change is starting to look infinite, approaching a straight line upward. Hang on to your seatbelts! Humanity has never experienced anything like this rate of change.

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