

Film-tech-ture: Scripting the Future of Education

But Master Yoda says I should be mindful of the future... ¹

Palmácia, a charming town nestled in the remote corners of Brazil, had fewer than 10,000 inhabitants when I was born many years ago. It's a world away from the hustle and bustle of big cities, with no towering shopping malls or universities to be found. While it does cater to tourists with some activities aimed at showcasing its natural landscapes, mostly it's just a spot to unwind and recharge your batteries.

Having been raised in this place for over a decade, I was also hooked on its peaceful atmosphere. I loved taking strolls around my stepdad's farm, and when that wasn't possible, I'd wander through the backyard of his drugstore, connecting with nature. There was this duck, 'Quén-Quén', I used to chat with about life — I admit, her name was a bit cliché, inspired by the sound ducks make. I also befriended some of the resident kittens; they were great company too. Once inside my room, my interests took a sharp turn towards technology. This was during a time when computers were still bulky, and cell phones were nowhere near as fancy as they are now. Our computer was one of those classic white models you'd see in old pictures, and cell phones relied on infrared for communication, meaning you had to be pretty close to transfer any data.

Growing up, my mom had this rule on computer time — no more than two hours a day. So, I had to get creative. I ended up finding a third hobby: crafting alternative worlds and futures in my mind. It wasn't until later that I discovered cinema, which kind of did the same thing for me. Fast forward several years, and now I live in the vibrant state capital, among over a million inhabitants. As I reminisce, sitting with a small laptop and a touchscreen phone by my side, it's astounding to see how reality has outpaced my childhood daydreams.

Back then, I couldn't even fathom today's commonplace concepts like Artificial Intelligence or Deep Fake. Internet of Things, Big Data, Cloud Computing, 3D Printing — the list goes on endlessly. Unlike me, movies and anime from the turn of the millennium like *The Matrix* (1999),² *Pulse* (2001),³ and *Serial Experiments Lain* (1998),⁴ while each unique in their narratives, effortlessly delved into and portrayed the anxieties and consequences of our growing dependence on technology. They explored questions of power dynamics, ethical dilemmas, and the very real possibility of a future where machines reign supreme over humanity.

¹ Lucas, George, dir. *Star Wars: Episode I – The Phantom Menace*. 1999; Beverly Hills, CA: 20th Century Fox. DVD.

² Wachowski, Lana and Wachowski, Lilly, dir. *The Matrix*. 1999; Burbank, CA: Warner Bros. Pictures. DVD.

³ Kurosawa, Kiyoshi, dir. *Pulse*. 2001; Tokyo: Toho. <https://mubi.com/pt/br/films/pulse>.

⁴ Nakamura, Ryūtarō, dir. *Serial Experiments Lain*. 1998; Tokyo: Triangle Staff. <https://www.crunchyroll.com/pt-br/series/G649DWXJY/serial-experiments-lain>.

Plato's theory on art is that imitates the objects and events of ordinary life.⁵ Looking ahead to 2027, it's predicted that around 14 million jobs will disappear, especially those susceptible to automation. Over 75% of businesses are ready to welcome transformative technologies like big data, cloud computing, and AI, actively seeking professionals adept at integrating and managing these cutting-edge tools. Additionally, more than 80% of companies are expected to adopt digital platforms and apps, which are projected to become the preferred choice of technology for organizations. Looks like the tech revolution is underway, with education and workforce tools emerging as the second most favored choice.⁶

While the term "tech revolution" might sound alarming, Peter Drucker reminds us that the real danger isn't the upheaval itself: "*The greatest danger in times of turbulence is not the turbulence; it is to act with yesterday's logic.*" History supports this view, demonstrating that adaptation is key.⁷

There's a difference between knowing the path and walking the path ⁸

Innovation, as Druker noted, is the specific instrument of entrepreneurship.⁹ Nonetheless, the significant changes it brings often face considerable resistance, particularly from established leaders and institutions. A historical example is Galileo Galilei, a prominent astronomer and physicist of the Scientific Revolution. In 1633, he was condemned by the Inquisition for supporting Copernican heliocentrism. The Church predominantly supported geocentrism, arguing that heliocentrism contradicted the interpretation of Scripture at that time, and thus, was seen as a direct challenge to established doctrines.

In more recent times, the rivalry between Nikola Tesla and Thomas Edison highlighted the fierce debate over concurrent methods of energy transmission. Edison was a supporter of direct current (DC), while Tesla fervently promoted alternating current (AC), which he had pioneered. Edison didn't just oppose the widespread adoption of AC; he actively engaged in a smear campaign to undermine Tesla and sabotage his dream of making energy freely available. This campaign preyed on people's natural fear of the unknown, fostering doubt and resistance towards Tesla's revolutionary ideas.

As we enter the 21st century, the COVID-19 pandemic has revealed the unique approaches of (some) contemporary leaders when it comes to tackling challenges.

⁵ Plato, *Republic*, trans. Robin Waterfield. Oxford: Oxford University Press, 2008.

⁶ World Economic Forum. "Future of Jobs Report 2023." *Insight Report*. May, 2023. https://www3.weforum.org/docs/WEF_Future_of_Jobs_2023.pdf.

⁷ Drucker, Peter. *Managing in turbulent times*, New York, NY: Routledge, 2011.

⁸ Wachowski, Lana and Wachowski, Lilly, dir. *The Matrix*. 1999; Burbank, CA: Warner Bros. Pictures. DVD.

⁹ Drucker, Peter and Maciariello, Joseph. *Innovation and entrepreneurship*, New York, NY: Routledge, 2014.

Around mid-2020, I came across this amazing opportunity to work as an information technology (IT) tutor at a local social institution committed to empowering young people through free initiatives and programs. My days as a tutor were pretty standard, revolving around tasks like addressing individual student inquiries, grading assessments, and participating on integration events alongside my fellow tutors. Just as I was settling in, the world was blindsided by the pandemic, leaving us all with the pressing question, "What's our next move?"

The answer? Embracing virtual learning, despite its challenges. Classes went online, either in real-time or with pre-recorded sessions. Our activities shifted to a virtual classroom setup. It was a seismic shift, but over a billion students¹⁰ managed to keep learning, graduating, and, despite the chaos, knowledge kept on flowing. I had the happiest day when a student proudly showed me an old computer part through their webcam. Talk about irony.

Breaking away from a potentially disastrous cycle of resistance, (some) global leaders during the pandemic demonstrated a crucial trait: adaptability. They recognized the power of technology as an ally in overcoming contemporary challenges, paving the way for moments like these to happen worldwide. In Drucker's words, leadership is all about delivering results, and he was certainly a beacon of wisdom during these turbulent times, reminding us that "*Knowledge has to be improved, challenged, and increased constantly, or it vanishes.*"¹¹

Roads? Where we're going, we don't need roads ¹²

So, let's circle back to talking about movies. Back to the Future Part II,¹³ the iconic movie from the 1980s, took us on a thrilling ride through its vision of the future, set in the year 2015. Some of its predictions, like video calls and wearable tech, are now just part of everyday life. But others, like those flying cars, still seem like they're stuck in the realm of fiction. It's a fascinating exercise, this speculation about the future, especially when we apply it to education. Consider this: kids currently in elementary school will live a world even more technologically advanced in the next 30 years, pursuing careers yet to come up. But let's also acknowledge the uncertainty that comes with trying to predict the future, as exemplified by The Butterfly Effect (2004),¹⁴ and mirrored in real-world research.

¹⁰ UNESCO. "UNESCO's education response to COVID-19." June 21, 2023. <https://www.unesco.org/en/covid-19/education-response/initiatives>.

¹¹ Ulrich, Dave. "What Do Thought Leaders Think?." *LinkedIn*. December 18, 2018. <https://www.linkedin.com/pulse/what-do-thought-leaders-think-dave-ulrich/>.

¹² Zemeckis, Robert, dir. *Back to the Future*. 1985; Universal City, CA: Universal Pictures. DVD.

¹³ Zemeckis, Robert, dir. *Back to the Future Part II*. 1989; Universal City, CA: Universal Pictures. DVD.

¹⁴ Bress, Eric and Gruber, Mackye J., dir. *The Butterfly Effect*. 2004; Burbank, CA: New Line Cinema. DVD.

A 2017 report from Dell Technologies and the Institute for the Future suggested that about 85% of the jobs in 2030 haven't been conceived yet.¹⁵ The British Council puts the estimate at 65%.¹⁶ At the end of the day, the only thing we can really count on is change. In Drucker's words: "*It is the very nature of knowledge that it changes fast and that today's certainties will be tomorrow's absurdities.*"¹⁷

As a kid, the idea of programming was like something out of a sci-fi movie to me. My IT classes were more about what buttons to press than anything deep. Those lessons weren't half bad, especially considering high school didn't offer any IT courses. As I delved into researching for this essay, I found myself wondering, much like Robert Zemeckis, whether exposing children to programming, data analysis, and algorithms from an early age would bring us closer to a world filled with flying cars and hoverboards. Turns out, it's not such a straightforward answer.

These skills rely heavily on grasping the basics, like reading and mathematics. However, over 600 million children and adolescents worldwide are not meeting basic proficiency levels in those core subjects.¹⁸ While it's apparent that we can't abandon traditional education entirely, it's equally evident that there's a deep-seated issue with education quality and what goes on inside classrooms. Here in Brazil, our education system remains deeply rooted in tradition, heavily reliant on test-based assessments. Until university, extracurricular activities receive little emphasis, if any, as admission criteria solely revolve around a standardized test with 180 closed questions and an essay. Moreover, even after university admission, students are likely to encounter challenges in the job market.

I've grown up with my parents emphasizing the importance of education for securing a good job. Back in their day, having a diploma almost assured financial stability. In contrast, for newer generations such as Millennials and Gen Z, merely obtaining a degree falls short, as today's job market demands a blend of skills that are rarely cultivated within the walls of a classroom. Teachers, in turn, often express frustration over the limited time within our rigid curriculum, seeing it as a major obstacle to imparting essential 21st-century skills. Coupled with strict directives from educational authorities prioritizing literacy and numeracy, educators find themselves constrained.¹⁹

¹⁵ Institute for the Future for Dell Technologies. "Emerging Technologies' Impact on Society & Work In 2030." *The Next Era of Human-Machine Partnerships*. 2017.

https://www.delltechnologies.com/content/dam/delltechnologies/assets/perspectives/2030/pdf/SR1940_IFTFforDellTechnologies_Human-Machine_070517_readerhigh-res.pdf.

¹⁶ British Council. "Preparing young people for the careers of the future." Accessed May 18, 2024.

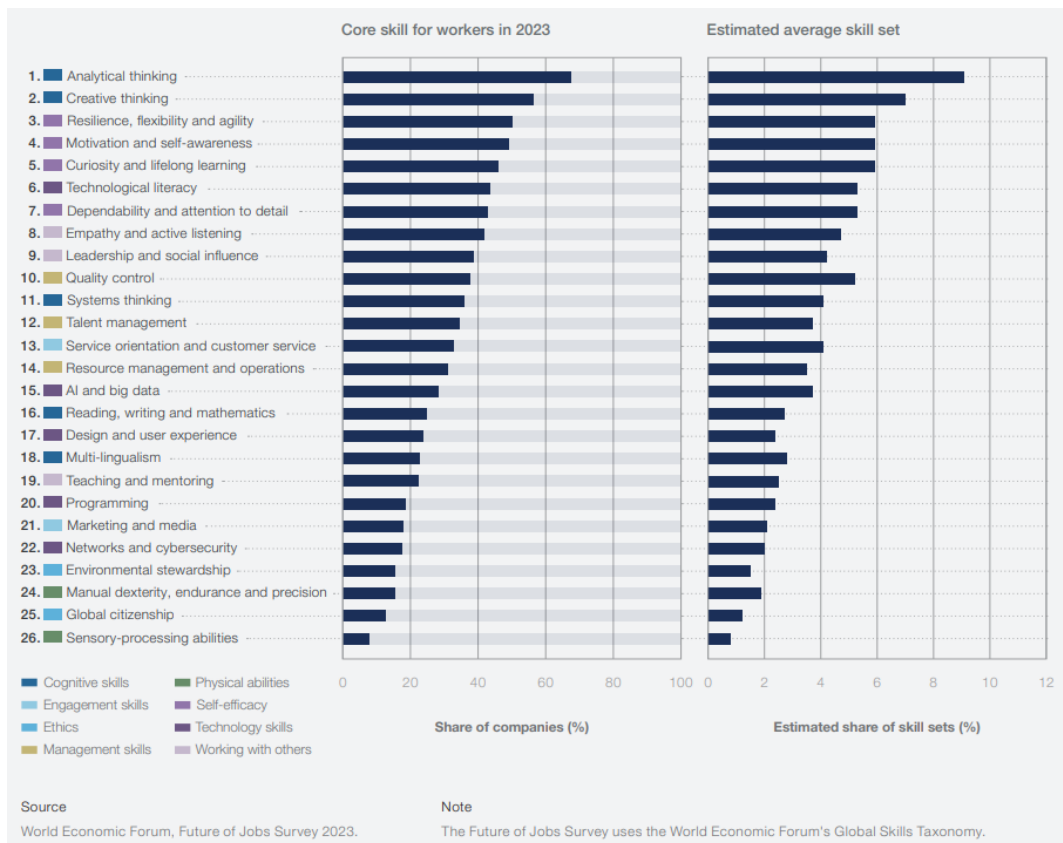
<https://www.britishcouncil.org/education/skills-employability/tool-resources/vocational-education-exchange/career-guidance/preparing-young-people-careers-future>.

¹⁷ Drucker, Peter. *Post-capitalist society*, New York, NY: Routledge, 2012.

¹⁸ UNESCO Institute for Statistics. "6 Out of 10 Children and Adolescents Are Not Learning a Minimum in Reading and Math." September 21, 2019. <https://uis.unesco.org/en/news/6-out-10-children-and-adolescents-are-not-learning-minimum-reading-and-math>.

¹⁹ The Economist. "Driving the skills agenda: Preparing students for the future." *An Economist Intelligence Unit report, sponsored by Google*. 2015.

<https://static.googleusercontent.com/media/edu.google.com/en//pdfs/skills-of-the-future-report.pdf>.



One of the key takeaways from Drucker's essay, "Managing Oneself,"²⁰ is his rejection of the educational system's notion that there's only one valid approach to learning. Instead, he advocates for individuals to take ownership of their journey and invest in personal development. Unlike the traditional teaching model, Drucker, much like the demands of the job market and real life, emphasizes the importance of flexibility and, above all, lifelong learning. As he aptly puts it: "*Knowledge-based skills change often and without regard to traditional demarcations and jurisdictions.*"²¹

In my experience, getting a spot at a public university was just the beginning. Due to gaps on earlier math education, I initially struggled wrapping my head around key subjects for my Computer Science major, like calculus and physics. So, seeing the rise of remote learning since 2010, which has attracted millions of students,²² I decided to embrace the trend. In addition to attending university lectures, I supplemented my learning by watching educational videos on YouTube — a strategy adopted by 98% of its current users.²³ Instead of sticking only to textbooks with abstract math problems, I hunted down exercises online that were grounded in real-life situations. Furthermore, I actively participated in discussions and sought to challenge my peers' perspectives, rather than just handing in assignments.

²⁰ Drucker, Peter. *Managing oneself*, Brighton, MA: Harvard Business Review Press, 2008.

²¹ Drucker, Peter. *The age of discontinuity: Guidelines to our changing society*, New York, NY: Routledge, 2017.

²² Hamilton, Ilana and Beagle, Veronica. "By The Numbers: The Rise Of Online Learning In The U.S." *Forbes Advisor*. March 22, 2024. <https://www.forbes.com/advisor/education/online-colleges/online-learning-stats/>.

²³ Youtube. "Gerando impacto nas diversas comunidades do Brasil." *Relatório de Impacto*. 2022. https://www.youtube.com/intl/ALL_br/howyoutubeworks/progress-impact/impact/.

Despite being in STEM, it took me some time to catch up with the crowd of graduates who use generative AI in their assessments. I suppose part of it was my lingering Hermione Granger-esque skepticism towards shortcuts. That began to change when I noticed that most professors not only utilize, but advocate for AI because of its effectiveness in teaching.²⁴ These days, a professor presented us with an incredibly challenging assessment, claiming it was entirely original, nowhere to be found online. Naturally, I took that as a dare. After hours of searching high and low, I had to admit defeat. When I finally asked the professor where he got such a brilliant idea for an assessment, the nonchalant reply was, "Oh, just ChatGPT." And that was anticlimactic. Later, the same professor made this lively Kahoot! game session, where the winner would get an extra point on the next test. Turns out, research mirrors the class experience: gamified approaches are super motivating for around 70% of students. And when it's challenge-based like this, it can boost performance by nearly 90% compared to traditional lectures.²⁵

Finally, I ensured that my learning extended beyond the confines of university requirements. Whenever possible, I actively engaged in Massive Open Online Courses (MOOCs) and various training programs, like the professional certificates offered by the exceptional Grow with Google initiative.

Currently, I hold an associate's degree in Systems Analysis and Development, which I obtained through a full-ride scholarship, and I'm nearing completion of my Computer Science degree. In addition to securing an internship, I'm also receiving grants for tutoring and for pursuing a personal project correlating cinema history and technology.

Drucker once said that all opportunities stem from change.²⁶ While I don't believe my story is nearly as inspiring as his, I'm glad I heeded his advice rather than the people who insisted that certain interests were reserved for boys.

I'm simply saying that life, uh... finds a way ²⁷

During the pandemic, we saw a trend of public figures turning to social media to show support for the guidelines set by healthcare professionals. They emphasized the importance of staying indoors, wearing masks, sanitizing hands, and following other recommended safety measures. It became a worldwide phenomenon.

²⁴ Hamilton, Ilana. "Artificial Intelligence In Education: Teachers' Opinions On AI In The Classroom." *Forbes Advisor*. December 05, 2023. <https://www.forbes.com/advisor/education/it-and-tech/artificial-intelligence-in-school/>.

²⁵ Legaki, Nikoletta-Zampeta, Xi, Nannan, Hamari, Juho, Karpouzis, Kostas and Assimakopoulos, Vassilios. "The effect of challenge-based gamification on learning: An experiment in the context of statistics education." *International journal of human-computer studies* 144 [December 2020]: 102496. doi.org/10.1016/j.ijhcs.2020.102496.

²⁶ Drucker, Peter and Maciariello, Joseph. *Innovation and entrepreneurship*, New York, NY: Routledge, 2014.

²⁷ Spielberg, Steven, dir. *Jurassic Park*. 1993; Universal City, CA: Universal Pictures. <https://www.netflix.com/br/title/60002360?source=35>.

For instance, a widely known YouTube video, with nearly 2 million views, featuring 25 celebrities singing John Lennon's "Imagine" while in isolation.²⁸ In Brazil, our own public figures joined in, offering advice through videos and using phrases like "we're all in the same boat" to convey solidarity in our shared challenges.

I mean, I get the idea. Especially considering that in 2020, despite Brazil witnessing over 2000 COVID-related deaths, the President evaded accountability, stating he wasn't a "grave digger."²⁹ But let's pause and ponder: are we truly sailing in the same boat?

Research conducted across Organization for Economic Co-operation and Development (OECD) participating countries sheds light on how students in vulnerable situations have been disproportionately impacted by the pandemic:

- Internet access across countries: In Denmark, Slovenia, Norway, Poland, Lithuania, Iceland, Austria, Switzerland, and the Netherlands, over 95% of students have access to a home computer, whereas in Indonesia, it's only 34%;
- Disparity in privileged schools: In the United States (US), almost all 15-year-olds in advantaged schools have a computer at home, compared to just 75% in disadvantaged schools. Similarly, in Peru, it's 88% versus 17%;
- Availability of learning equipment: Countries like Austria, Iceland, Luxembourg, Macao, New Zealand, the United Kingdom, and the US have more than one computer per student. Oppositely, in Albania, Brazil, Greece, Kosovo, Montenegro, Morocco, Turkey, and Vietnam, there's only one computer for every four students or fewer;
- Online learning support: In Singapore, four Chinese provinces, Macao, and Denmark, 90% of students have effective online learning support, while in Argentina, Costa Rica, Kosovo, Panama, Luxembourg, Japan, Peru, North Macedonia, Belarus, and Morocco, it's less than 30%.³⁰

Now, the thing about Peter Drucker is that he wasn't your typical, detached businessman; he had a genuine interest on social justice. His words really capture it all: "*Every single social and global issue of our day is a business opportunity in disguise.*"³¹

AIIESEC, an organization cut from the same cloth, was born just after World War II, thanks to the vision of seven young individuals who aimed to promote cross-cultural understanding. One of the ways AIIESEC makes a difference is through its Global Volunteering program, which gives young people the opportunity to contribute to volunteer projects with NGOs, schools, or foundations across the globe, all in line with the United Nations Sustainable Development Goals.

²⁸ CBS News. "25 celebrities sing "Imagine" in isolation, creating a moving montage." March 19, 2020. Music video, 2:02. <https://www.youtube.com/watch?v=omEDLKS5pbY>.

²⁹ Gomes, Pedro Henrique. "Não sou covheiro, tá?", diz Bolsonaro ao responder sobre mortos por coronavírus." *GI*. April 20, 2020. <https://g1.globo.com/politica/noticia/2020/04/20/nao-sou-coveiro-ta-diz-bolsonaro-ao-responder-sobre-mortos-por-coronavirus.ghtml>.

³⁰ OECD, PISA. "Learning remotely when schools close: How well are students and schools prepared? *Insights from PISA.*" *OECD Policy Responses to Coronavirus (COVID-19)*. April 03, 2020. <https://www.oecd.org/coronavirus/policy-responses/learning-remotely-when-schools-close-how-well-are-students-and-schools-prepared-insights-from-pisa-3bfdaf7/>.

³¹ The Drucker Institute. "Opportunity in Disguise." January 14, 2011. <https://drucker.institute/news-post/opportunity-in-disguise/>.

It was during my time as a volunteer member of the sales team, where my role was to convert interest into confirmed program participants, that I truly understood the real effect of each transaction: it didn't just impact me, but also my colleagues, the exchange student, the project participants in the host country, and the wider local community.

Drucker believed that the crucial step was to translate empathy, the skill of understanding others' perspectives, into action: “*Plans are only good intentions unless they immediately degenerate into hard work.*”³² We're not all sailing in the same boat, and those of us fortunate enough to occupy privileged positions bear a responsibility to support others. Keeping this principle at heart, AIESEC now operates in over 100 nations, collaborates with 5000+ organizations, and arranges over 30,000 opportunities annually for youth from diverse backgrounds.³³

I just have never... — ... heard a program speak of love? ³⁴

Although the COVID pandemic has ended, many people still feel just as lonely as before when they step outside. In 2023, a survey unveiled alarming statistics, indicating that one in four adults reported experiencing loneliness. This feeling isn't just emotionally painful; it carries significant health risks, comparable to smoking 15 cigarettes a day.³⁵

Charles Darwin, the author of “*On the Origin of Species*,”³⁶ a cornerstone of evolutionary biology and one of the most influential academic works of all time, believed that humans are inherently social animals. Anthropologists and archaeologists support this view, theorizing that our species survived the ice age primarily because of our social skills. By forming communities, communicating to solve problems, and creating better tools, we were able to thrive in harsh conditions. Years ago, Peter Drucker also emphasized the importance and inevitability of interpersonal connections, stating, “*Teamwork is neither ‘good’ nor ‘desirable.’ It is a fact.*”³⁷ History demonstrates that our survival has always depended on one another.

³² Nieto-Rodriguez, Antonio. “Peter Drucker’s view on Project Management – Interview with Richard Straub, founder of the Global Peter Drucker Forum.” *Global Peter Drucker Forum*. July 05, 2018. <https://www.druckerforum.org/blog/peter-druckers-view-on-project-management-interview-with-richard-straub-founder-of-the-global-peter-drucker-forum-by-antonio-nieto-rodriguez/>.

³³ AIESEC. “Leadership is for every young person.” Accessed May 19, 2024. <https://aiesec.org>.

³⁴ Wachowski, Lana and Wachowski, Lilly, dir. *The Matrix Revolutions*. 2003; Burbank, CA: Warner Bros. Pictures. DVD.

³⁵ Nicioli, Taylor. “The loneliness epidemic: Nearly 1 in 4 adults feel lonely, new survey finds.” CNN. October 24, 2023. <https://edition.cnn.com/2023/10/24/health/lonely-adults-gallup-poll-wellness/index.html>; Johnson, Sarah. “WHO declares loneliness a ‘global public health concern’.” *The Guardian*. November 16, 2023. <https://www.theguardian.com/global-development/2023/nov/16/who-declares-loneliness-a-global-public-health-concern>.

³⁶ Darwin, Charles. *On the Origin of Species*. Oxford: Oxford University Press, 2008.

³⁷ Drucker, Peter. *Managing in a time of great change*, New York, NY: Routledge, 2012.

Today, as we face a loneliness pandemic, technological advancements and new forms of learning continue to emerge. Although beneficial in many scenarios, technology cannot fully replicate the classroom environment, characterized by human interaction, where minds develop crucial skills such as communication, collaboration, and conflict resolution — abilities imbued with human nuance that transcend mere binary code.

I'll be back ³⁸

I have this friend who's majoring in History at my university. One day, he cracked a pun about himself and his classmates, saying: "We don't study history, we make history." At the time, I found it hilarious.

Now I'm starting to think there's truth to that statement. We're truly protagonists in a significant period of history, not just playing supporting roles. Winston Churchill, British prime during World War II, once cautioned us that ignorance of history leads to its repetition.³⁹ But these times feel unprecedented.

For me, one of the most crucial lessons left by Drucker is that we are not mere victims of turbulence; we possess the power to adapt, act, and overcome, no matter how intimidating the circumstances may appear.

³⁸ Cameron, James, dir. *The Terminator*. 1984; Los Angeles, CA: Orion Pictures. DVD.

³⁹ International Churchill Society. "Folger Library – Churchill's Shakespeare." *Churchill in the News*. October 21, 2018. <https://winstonchurchill.org/resources/in-the-media/churchill-in-the-news/folger-library-churchills-shakespeare/>.