An Opportunity to Reimagine Learning

Pandemic Catalyst

AugmentedSocietyNetwork

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To generate real and virtual content that will inform, generate conversation, assist in the development of policy, and inspire others.

To develop experimental, theoretical, and real products and publications combining unlikely or disruptive sources to generate new and exciting thought, creativity, and partnerships.

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We have a one-time opportunity to remake education; not just to modify aspects of what we already do, but to start at zero and imagine a system that supports humankind.

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Contents

Introduction

Why, and how, did we pull together 30 people from all over the world to pool ideas on reimagining education?

It started with the pandemic, the event that upended all of our lives.

In a series of web meetings between April and June of 2020, members of the RSA and the Augmented Society Network arrived at three general topic areas where the pandemic was forcing us to reimagine our whole conceptual framework:

- **education** (how we learn),
- **value** (ways to quantify and qualify what is important),
- and **resourcing** (how we produce, trade, and obtain what we need or desire).

In July and August of 2020, further global web meetings started honing in on eight aspects of education that seemed ripe for reimagining, these became our eight themes.

Between August 2020 and February 2021, we explored and wrote about these themes.

Over the centuries there has been no shortage of inspiring ideas for the evolution of education. Understandably one could become quite frustrated that smart ideas presented 50 years ago have still not come into practice because the education tanker moves ever onward in its own vast ocean.

Why now?

Whatever façade we placed on the state of Education and its efficacy over the past few decades was effectively removed by the Covid-19 Pandemic.

The pandemic's forced halt to the status quo, culminating in lockdowns, remote learning and the instant disappearance of entire industries, made every one of us to take stock and recognize that wholesale change is required for all of society to enjoy sustained, meaningful growth. Embracing the pandemic as a reason to see things completely differently, and imagine what a future of education, or the seeking of knowledge, could become in the future; this is what drove this project.

The RSA's Augmented Society Network unites Fellows and other members of society around the world in exploration, collaboration, and reflection on the future of human interaction with technology.

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Augmented Society Network Mission Statement

- To create an inspiring platform for collaborators and thinkers to explore the impact of augmentative technology on society and the environment.
- To generate real and virtual content that will inform, generate conversation, assist in the development of policy, and inspire others.
- To develop experimental, theoretical, and real products and publications combining unlikely or disruptive sources to generate new and exciting thought, creativity, and partnerships.

We have collaborated in order to bring divergent thoughts to light, to enable creativity and collective thinking to emerge at a time when physical togetherness is difficult, and to inspire conversations on how we utilize this global full-stop to bring about much needed evolution in the education systems and programmes globally whose issues were clearly illuminated due to the Pandemic' disruption. From the beginning, it was clear this would prove to be organic in both delivery and content.

Divided into eight themes with accompanying material from authors and contributors representing five continents (including technologists, futurists, venture capitalists, influencers, educators, researchers, and students) the project set forth to bring together their different perspectives, visions, and life experiences.

This publication is the beginning. We have embraced all perspectives. This is the starting line. We strive to build stronger bridges across the digital divide, foster greater discourse and discovery, and strengthen society as we emerge from a period of time where chaos and uncertainty took hold of the world. We are engaging in an incredible opportunity for something different to emerge, an extraordinary time to be proactive and affect change. Nothing we have to say here is truly new, but we aimed to offer considered perspectives and themes collected in one place as they may not have been presented before. Collectively, the pathways forward and the opportunity to build on them may prove to be what is new.

What needs to be taught to be productive members of society in the 21st Century?

Nurturing self-esteem and self-awareness (awareness of how one is feeling and an accurate sense of how others perceive us) is crucial. When we feel grounded in ourselves, we're better equipped to serve others. And what needs to be taught is "learning to learn." Reinforcing at the earliest of ages that all through life we have the opportunity and imperative to continue to learn helps empower all to create and lead productive, meaningful lives and improve society.

Molly Tschang
Executive Coach and Radio Show Host, USA

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How is this publication laid out?

Within each of the eight themes, you will find the following:

1. **Introduction**: A general description of the theme
2. **Main essay**: For each theme, one person was primarily tasked with writing about the salient aspects of that theme from their perspective. These pieces generally do not encompass the entire theme, they address what that author views as a critical aspect of the topic that is ripe for change.
3. **Supplement(s)**: As other contributors reviewed the themes, they noted other critical aspects that needed to be addressed as well. These are shorter pieces that explore these other facets.

Please use this project to drive your thinking and creativity, use it to push for change, and use it to generate something new. Education has systemic issues, but we must be brave, see learning as a human right, acknowledge the digital divide and recognize who is not in this conversation and must be so that our future is truly inclusive. Above all, use it to create a better world for all and make learning a lifelong, joyful activity that is accessible to all.

"Covid didn't change directions, it isn't just a temporary disruption, it just sped things up that were going to happen anyway."

President of The Woodrow Wilson National Fellowship Foundation, formerly President and Professor of Education at Teachers College, Columbia University.

Zoë Camper, Jonathan Tavssberger, and Mitch Weisburgh - Editorial Directors

Theme One: Basics — What all Humans Need to Thrive

If a key purpose of education is to prepare people for success, shouldn't we address "what is this success that education is preparing us for?"

Of course, this is a topic that mankind has debated for at least thousands of years. We know we cannot solve this conundrum in just a few pages, but at least we can raise some of the questions and speculate about some possible goals based on the roles, requirements, and gaps of societies today.

Strictly speaking, this theme is not primarily about education, but sets up the environment and end goals for which education could be the means for achievement, and then provides a link between education and those ends.

You might think of these as System requirements for education and society: the learner, the educator, the education system, what goes in and what comes out, in other words the fundamentals.

What needs to be taught to be productive members of society in the 21st Century?

Teaching kids as early as possible about the importance of Soft Skills is the key to better individuals and a better society in the 21st century. Skills such as self-knowledge, collaboration, communication, adaptability and others are increasingly more important than Hard Skills.

Marcelo Mejlachowicz
Educator, Brazil

Access to Customized High-Quality Education Must be the New Normal for Everyone

Lead: Cyrill Wiget

Editors: Anna Morrison, Jonathan Tavssberger

Humankind has developed over millions of years and has continually adapted its skills in a constantly changing environment in order to survive. Our species have proven to be extremely flexible with an innate ability to learn new skills over the course of time. Over 2500 years ago, Heraclitus already noted "The Only Thing That Is Constant Is Change".

Until the first industrial revolution in the late 18th century, changes happened in a relatively manageable way over many decades or even centuries. Since then, change has occurred at a mind-blowing pace. We experienced three transformative steps of industrialization — firstly, the introduction of the steam engine; secondly, electricity and industrial production; thirdly, the use of electronics, telecommunications & computers — and are in the middle of the fourth industrial revolution, often referred to as Industry 4.0.

Steam power and electricity led to highly efficient and cheap automated production. Consequently, many home workers feared that they might be replaced by machines. In fact, while many people did lose their jobs, burgeoning positions and industries created more, and more highly compensated, jobs

than were lost.

The same applied when computers and electronics were introduced to society. Since economic data has been measured, the world is experiencing increasing job opportunities and, therefore, giving more people access to food, health and education.

It would be negligent to say that all went very smoothly and did not have any impact on our society. Within only a few generations, we had to accept new geopolitical and economic situations and adapt our skills to new technologies and needs within constantly shorter periods of time.

Vast majorities of society's members have been able to grow with the economy and to adapt to the change, while acquiring the new skills needed. That said, without access to the right skills, tools, connections, or opportunities many lost out. If you look at the whole, most people would not trade lives with the majority population before the first three Industrial revolutions.

As we look at the pandemic, specifically, and the Fourth Industrial Revolution more generally, without some intervention, some members will thrive, while others will end up worse off. How do we tilt the playing field for the greatest benefit for all?

As a human society, we are responsible for everyone to have access to food and health plus outlets for learning the new processes and expectations to come due to increased utilization of technology and robotics in all areas of management and manufacturing. If we continue to educate only to the level of what technology can already do for us, many more positions will be overtaken in the future. Unrestricted access to education and an ability to acquire the right skill set for thriving and participating in our society is a requisite for providing access in a sustainable manner to food, health and a dignified life. But which skills are needed to be able to thrive in the future? How do we determine which skills we need to cope with change?

One approach is to imagine a utopian world in the future? How would an ideal world look, how would we prefer to live? This approach might enable us to move forward and create an optimal way to reach our defined goal. This route apparently bears several risks. Firstly, every individual has his or her own idea of what a perfect world looks like, making it nearly impossible to find a common ground that everyone agrees on. Secondly, as previously mentioned, we live in a constantly changing world, our desired future world is based on our current impressions, and as they will change over the course, so does our imagined utopia. No one was able to predict in the 19th century, how the world would look in the 21st century. If they had, would we be facing all the negative consequences realized today? As an alternative approach, perhaps instead of guessing the future, maybe we could try to figure out the skills and strategies required to thrive within a constantly changing world that provides no absolutes in relation to our future. Ultimately, the real need is the provision of tools for

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navigating a path when the landmarks and destinations are not yet clear.

It is often said that the past isn't a good predictor of the future. Still, we can be better prepared for the future, not just by understanding the past major industrial revolutions and their triggers, but also what factors led to success in society's transformations. Before major technological developments occurred, most of the workforce was working exhaustively for a living. The vast majority of families focused on many different jobs, predominantly producing food (self-sufficiency and self-sustainability) as well as other goods. Although people had to work much harder for that, they were a bit less dependent on just one income source. Industrial production offered full-time jobs and people suddenly had a steady income stream that allowed them to buy products which they couldn't afford before. Leisure activities became more popular, at the same time the workforce became much more dependent on their employer.

The 20th century created a lot of wealth and the workforce, generally, got wealthier too, and even more dependent and interconnected around the world. Globalization allowed us to specialize many regions and industries further, produce goods cheaper and more efficiently. This specialization on the other hand has many drawbacks. Many regions are becoming economically as well as politically dependent on others, losing important know how in the process. Shipping goods around the world, increased mobility and dumping toxic waste in less regulated countries have an impact on our global climate, and relocation of production causes displacement and pain to groups who were previously employed. The globalization doesn't only produce winners, but also many who are left behind. Not surprisingly, in several parts of the world we are facing a rising protectionism and even nationalism.

With Industry 4.0 and our experience with the pandemic, there are clear economic and geopolitical tendencies that we trend back to the model of the pre-industrial. Globalization and the externalization of the common good show their limits, with rising awareness of climate change and the need for sustainable development. Deglobalization and decentralized production may not only prove much more cost-efficient through the newest technologies, but also positively support sustainability and inhibit climate change. We may see a working model where members of society working, living and producing much more locally and individuals diversifying their income streams.

The global pandemic has forced many employers and employees to enable home working/working from home' in order to survive. As a direct consequence of the pandemic major global organizations are now recognizing the benefits of home offices, and the financial implications due to reduced infrastructure costs particularly within expensive city-centers. Furthermore, these entities are able to hire people from different locations for remote work, which might overwise have been difficult or more expensive in their local area. Employees, on the other hand, are able to organize their time much better as well as save a lot of money and time not having to commute. Media and current academic research consider us to be in the middle of the 4.0 industrial revolution. What

What needs to be taught to be productive members of society in the 21st Century?

When I was thirteen years old, I took part in my school's science fair. It was something I was very hyped about, and I remember studying for and preparing my project for weeks prior to the actual exhibition. My idea was sound and so was my research — but when I had to explain the finer workings of my set to the judges and the guests, I fell short. My experience is a toned-down example of the problem so many youngsters face today. It is easy to abide by a textbook and all that it entails within a classroom, but in this day and age the transition from a student to an adult playing a part in society requires the skill of translating rote knowledge to actual, innovative ideas that fit more practical molds. In addition to learning how to apply textbook knowledge to derive solutions, it is also important to learn how to professionally conduct yourself and present your solutions in a dynamic environment. I am still a growing teenager and I am witnessing firsthand the differences between the easy set of school life and the unknown wilderness of life after graduation. To be held responsible is very daunting, and I think in order to assist young adults in seamlessly entering professional life, the spotlight should be focused on helping them analyze and utilize what they have learned.

Ayesha Tahir
Student, Pakistan

does it mean for us? The 4th industrial revolution can be characterized by the unlimited combination of the digital, biological and physical systems, enhanced through artificial intelligence, cloud computing, robotics, internet of things, wireless technologies and many more.

All past major economic shifts initially have had a negative impact on society's disadvantaged and predominantly underprivileged people, although these shifts have, in some cases, produced improvements in society. Over the course of time, as more jobs are created, overall wealth drives upward. Ultimately, those that are able to adapt to the new situations thrive. When information technology became accessible for the masses, many people feared being replaced by computers. When we consider labor market statistics, we are reminded that not only are more jobs created, more people are able to gain access to the labor market globally. Jobs have continued to change drastically; many have disappeared, many new job fields have however arisen. People were often retrained for new tasks and jobs. At the same time, they have adapting to the new technologies within their area; new educational approaches were applied to educate and train; and society adjusted very smoothly without any major disruption. Currently, our society is in a similar situation to when computers were introduced to the masses in the Seventies. From that experience, we know that current technologies like artificial intelligence, robotics and the Internet of Things continue to replace many of our human-held jobs. That said, new jobs will continue to be developed to meet the demands of these new technologies. New products and job fields will evolve within society as a direct result.

Rapid change has an enormous effect on job skills. Stephane Kasriel, CEO of Upwork and member of the World Economic Forum council, puts the half-life of a learned skill at about 5 years. This has two implications. First, for all of us, our current skills will be worth about half as much in five years as they are now. Second, Michael Moe, cofounder of GSV Ventures, posits that about half of all workers will need to be reskilled or upskilled over a five year timeframe in order to keep working. Lifelong learning is an imperative.

How do we prepare ourselves for success and productivity through this perpetual change? First, we need to accept that change is a permanent process. This actual transition is not ending at a predefined time, it is an infinite process. If we accept change as a constant in our life, we can see change not as a threat, but as a great opportunity to develop ourselves as productive participants in society and pursue our passion. Accepting and being open to change is the utmost qualification for thriving in the future. Neglecting or resisting change is no longer a viable option. To be open for change and to understand how our environment interacts is not evident to us just at birth. We learn the skill to accept and handle change and to handle of flexibility to handle change through experience, our direct and indirect environment, but also through intentional learning.

Education is, beside health, food and shelter; the key prerequisites for being able to live and probably one of the most important elements to successfully thrive

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in our world. In all major economic shifts or revolutions, people with meager or no education were the ones who suffered the most. The inability to adapt and quickly learn new skills were preventing them from participating in the new job market, leaving them behind economically and societally. Countries with excellent education generally perform much better economically than countries with poor or little public education. Gaining knowledge continues to be the key element to positively participate in the job market as well as adapt skills within any disruptive economy.

The new technologies of Industry 4.0 give every individual, at least theoretically, not only access to high quality education in any desired field, it even allows customization of the learning experience for their own needs and capabilities. Theoretically in Industry 4.0, everyone should be able to acquire the knowledge that they need to thrive. Education in Industry 4.0 should enable people to focus on their strengths, abilities, and interests, not by feeding them what they aren't capable of or willing to study. Doubtlessly, basic skills including literacy in digital devices, reading, writing, math and (social) sciences will remain fundamental within the further development of soft skills. Without these skills learning and participating in society might become very difficult or even impossible. The focus of future education should be less fact-based. The difference between traditional and future education will be a transition from what we learn to how we learn, therefore, access to customized high-quality education has to be the "New Normal" for everyone.

We mentioned the pace, but also consider the innovative impact we are experiencing in the economic world. Since ancient Greece, the public educational sector has barely experienced a disruptive change. Surely, new practices enabled educators to teach more content and to include students with disabilities. Our experience of the education system reminds us that creating a defined and often limited curriculum that is adapted periodically by an administrative body restricts creative and innovative teachers and educators and prevents engaging and motivating students to thrive. The pandemic has impressively shown that in-person teaching is important, primarily because of socioeconomic factors, but also the pure knowledge transfer can also be done through distance learning, often much more effectively.

The vast majority of public and private schools weren't prepared for distance learning. Teachers had to become creative and innovative on the fly, learning how to interact with their students. Teachers found themselves transferring knowledge to the students through live sessions or recorded videos, as well as coaching students in individual 1:1 video chat. Many students at a certain age are definitely able to self-study vocabulary, listening to a Spanish podcast and writing a summary or watching the YouTube video of how to solve an equation more than others. The great advantage of this is every student works at their own pace and uses all the tools at their disposal. The teacher takes on the role of supervisor, advisor or coach on a very individual level. Struggling students that might have tendentially ask for less help in class would undoubtedly benefit from having a teacher available via the click of a mouse/ finger tap on a screen.

General human skills, empathy, the unmeasurable.

Skills built by all not just schools.

Embedded skills.

What needs to be taught to be productive members of society in the 21st Century?

Basic values - live with peace, respect all life forms, maintain the dignity of place you live in and around.

Harshita Verma
Educator, India

RSA | Fellow

Many schools and teachers have reported that one of the main challenges of distance learning is connecting with the students that are lacking in good infrastructure and connectivity. The pandemic has shone a light on the children from economically disadvantaged families that often don't have a workplace to work without disruption, including lacking adequate equipment including computers, headsets or even a broadband connection. Not surprisingly, the educational gap and the consequences on their future success in the workforce is already falling apart at this stage. Many disadvantaged families that don't have broadband connections at home, have at least one smartphone in their households. Technically, with new wireless technologies like 4G and 5G, it should be possible to provide broadband access for everyone. Schools in many countries provide their students with tablets or laptops for their learning journey. Allowing students to work independently at their pace and giving them access to the internet helps integrate these tools as great aides. Millennials and younger generations already use their smartphones as primary gadgets. They could not imagine a world without their gadgets. Access to high quality education and new technologies must be made accessible for everyone. Broadband internet access and even the most basic equipment should be available to everyone regardless of their socioeconomic status.

The pandemic has shown us that one requirement for education and learning in the 4th industrial revolution is access to technology and content along with the skills to learn and to teach using technology.

Historically, once someone was out in the workplace, business and industry assumed responsibility for education and learning, beyond the basic education of a college degree or professional accreditation. There was a collaborative support system: employees were loyal to the company through from hiring to retirement, and the employer trained in whatever new skills might be required.

This has not been the case for a number of years. The pace of changes in job requirements has accelerated, people hop from company to company, employers search the cheapest location and method of production, excessing employees who do not fit the new model. There is little loyalty from either employers or employees, most employers do not undertake to train their employees in new skills, and instead just replace them. The companies themselves are being closed, merged, or sold.

Yet, broad numbers of high paying medium-skilled and high-skilled jobs go unfilled, and high numbers of people are on the sidelines when, if they possessed the skills that employers need in the locations where employers produce, could be employed.

Until recently it has been sufficient to have a solid basic education, an apprenticeship or college degree. In the 21st century, with constantly changing job requirements, lifelong learning has become the new buzzword. The career planning of the workforce has continued to be led by the employers, based upon

their needs and vacancies that arise. The large companies that do continue to offer in-service training, focus the training to meet the needs of the company, not necessarily to make an employee more marketable.

To have a greater chance of success, today's employees need to be agile and be the driving force to establish their professional career. They require the skills to be able to navigate job and career changes, technological advances, the ability to communicate their value, and access to resources for skill and knowledge acquisition.

While the cost of college in the US, for example, has increased faster than inflation, with all other learning offerings that exist today through technology, many types of education and training have not only become cheaper, they have become more diverse and accessible. Further education or training can be pursued asynchronously, students don't have to abandon their workplace. Web resources, bootcamp courses, MOOCs, certificates, and certification assessments, in many respects, make preparing oneself for a career in another field, or learning a new procedure, today much easier than it was decades ago.

The upcoming generations are also much less interested in finding their life-time job upon entering the workforce. Moreover, they can barely imagine remaining at the same employer or job their entire lives. Although many have invested in further education to gain specialized knowledge for specific careers, the migration towards people being jack-of-all-trades is already evident. For many there will be opportunities to be skilled-up in a number of professions and areas, allowing them to be fully adaptable and transferable. Ultimately, this mobility may with a price. However, lifelong learning with a broad focus is a must and it would be wise to take full responsibility in planning ahead so that are able to thrive in both their professional and personal life.

Thus, in the 4th industrial world, learning for most people will continue to take place beyond secondary school, and it must be accessible and affordable. This most likely will only take place through some increased use of technology.

Before the first industrial revolution, people were working much more independently and needed a much more diversified skill set to earn a living. Many families were covering many of their own basic needs themselves and a sharing economy was widely unknown. Industrialization allowed more specialization. People became employees, earned a stable income and the possibility to buy more goods and services increased. The last century became the century of big corporations with thousands of employees, being an employee was the norm with a clear dependence on the employer. The invention of the internet has allowed us to market services and products directly to potential customers. It has become easier to start a business or to have an additional income as well as a main job (selling on Ebay, driving Uber, subletting apartments on Airbnb for example).

Until the last few decades entrepreneurship was considered a very risky

endeavor and employment a safe haven. Volatility in sectors mixed with mergers and automation will see even greater change in the future. Being laid off late in one's career continues to be very devastating, especially if you don't have skills that are in ready demand for high paying/essential jobs. Independence through having an independent business definitely is a challenging project but for many people provides much more satisfaction. Entrepreneurship demands many skills including being able to work independently and stay focused. It is imperative that upcoming generations have the capacity to work and learn independently, with minimum instructions.

Every person has different goals in life. Some strive for corporate careers with the expectation of financial wealth, focusing on an academic career or growing their own business while others consider a life in pure nature without any distractions or material dependency. Nevertheless, both stable, volatile, and all possibilities between have one thing in common: all people live in the same universe where the same set of rules apply to the careerist as to the naturalist: "The Only Thing That Is Constant Is Change", as Heraclitus stated. We must accept change and be open and ready for it. Basic educational background and understanding of the world is needed to be part of it.

All human beings need access to knowledge and be allowed to participate, if they wish. No one can be excluded from it based on their socio-economic background. Access to, understanding of and ability to apply new technologies in our favor is a must. In order to thrive in a professional environment, but also in our private environment, we need to learn constantly throughout our whole life. Constant learning aligns with constant change. To master that, we need to be able to work and learn independently, with intrinsic motivation. No one is going to be out there telling us what we should do. Even if it is utopian to believe that by applying all these recommendations that we will succeed for sure, these recommendations at least give us the tools to thrive in the direction of growth and prepare us to adapt our journey when roadblocks appear. And rest assured, they will.

What do you believe needs to be taught to be productive members of society in the 21st Century?

I remember a few months ago, I was in design and technology and we were leaning how to do CAD. We sat down at a computer and had to make a 3D camera. I remember being fascinated by all the different tools and how you could make something out of nothing. I wanted to learn more about it and looked forward to doing more of it every week.

Emily Bonham
Secondary School Student, Scotland

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Theme Two: What Are the Universal Foundational Skills for the Fourth Industrial Age?

If education, in its current form leaves us deficient in anything but rote memorization and the regurgitation of data — that can be easily found, but maybe not trusted, by querying Google, Siri or Alexa — how does a future iteration of Cs (4 or 5) need to be considered to enable us to learn AND process using the growing number of digital and real world tools at our disposal?

In a State of Abundance All You Have is Philosophy

Lead: Nitzan Hermon

Editors: Timothy Stiven, Mitch Weisburgh

Education gets its merit from sense; It is through different types of education that we are able to make sense of the world, take action to live and thrive. As humans we all need to understand the historical information available, then take what we have and continue to learn so that we can develop inferences to prepare and plan for the future. Plans need to be completed and mentally executed through the deployment of a discrete set of skills.

The classic view is that education helps us make sense of the past, prepare for the future, and develop the skills to navigate that future.

This pursuit is well-intentioned, but its foundation is a reliance on a monolithic view of the world. It is deterministic in knowledge and allows for little true diversity. It puts blinders on the existence of individual experience and the range of possible futures.

It is under this frame that the epistemic idea of disabilities came to reality, with its moral and creative cost, where all this time, a complexity lens would frame it as co-abilities (People-Centered Economy, Cert, Nordfors). When we define an ability, we also define a disability, and those definitions both illuminate a path and close off other paths that could have merit. A more expansive view, one of possibilities rather than abilities, without limiting ourselves to deterministic definitions, allows us to embrace the complex nature of our environment.

We are currently living through a collective wake up call, understanding the limits of planning and the open-ended nature of our connected reality. We see the price of forgoing our epistemic humility. The cost of drawing maps of the past as a future view is generations of people reminding themselves to be

creative later in life, spending time and resources to unlearn linear, artifact-based thinking.

The pandemic and global economy turned the light on our interconnectedness, yet our education is one of artifact-based thinking. It seeks efficiency, but we forget that linear, efficient thinking operates within the world of limited material. If I were an artisan, I had limited material; using that material wisely would have a material effect on my studio. But the modern knowledge worker lives in a world of abundance. And in abundance, it is context, masked as a question, an inquiry, or ways of thinking, which is scarce.

How can we negotiate with this epistemological and ontological openness? We need to redefine concepts of creativity, the price of knowing, and our sense of epistemic comfort. This could be the true calling of education today.

Learning should be a joy and full of excitement. It is life's greatest adventure; it is an illustrated excursion into the minds of the noble and the learned. Taylor Caldwell 1900 — 1985

Creativity is an act of unknowing.

Creativity is a state of thinking, being, and unknowing. It is not a state of production. One of the legacies we carry with us from engineering is measuring creativity based on output.

And by doing that, we conflate creating with producing.

If I give you a cup in the middle of the desert and ask you to fill it with water, it will be a significant effort. You will need to go and find water, with no taps; it is a challenge. You might succeed or fail, and you will need to think of new ways on how to produce water in the process.

But what if I make the problem even more creative? You see me, you see the desert. I do not give you a cup and I do not ask you to bring water.

Creatively, you can infer that without water, we will die. You can infer that you need a vessel to carry the water. Through your own inferences, you can understand that your task is to find a vessel (which could be a cup), to find water, to fill the vessel, and to transport the water back.
The water is, of course, analogous to ideas and inspiration. Our cup is stationary (in states of knowing and being). It is a fixed context, a mental model. It is known.

When someone asks us to fill the cup, we know we need water, but we don't know where to look. We can call this production; a known model, an unknown process.

The latter example is entirely a creative process where both the process and the thinking models are unknown.

The Price of knowing

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Knowing comes with a price. It asks us to freeze reality, write scripts, roles, and goals for ourselves, and the spaces we meet, learn, and work. When we know something and we encounter a problem, we focus on solutions, we design solutions to be put in place, that stay in our original understanding or framework, incrementally adapting for externalities. When we do not know, we open up to more possibilities, we explore and orient before moving to a solution stage.

In this current moment of remote learning, it is tempting to look for solutions perpetually. When reflecting on our fatigue and lack of creativity in online discourse, we might identify problems; for example, the Zoom grid we find ourselves in is symmetrical, where our identities are not.

At this point, there are two avenues to explore: the technological or the humanistic. The technological one might look for new digital means to break that, for example, Microsoft's shared background in video calls, to create a shared sense of space. The thinking might be that we are more creative when we share the same space, and so by creating a digital version of a shared space, we will be more creative. But that is, a pseudo-space: and in fact, a pseudo-reality. Solutionism relies on simulation.

The psychological, humanistic approach will accept reality for what it is and ask for additional thoughtfulness and reflection from those in the grid. People are tired, people are not being creative, the humanistic approach deals directly with the people.

I intentionally use the term grid and avoid the term matrix, which came up in a recent conversation. The matrix, being a fictional, pseudo concept, is in itself a form of mediation. When we operate in pseudo-spaces, we compromise for pseudo-identities and mediation of creativity.

Solutionism comes with a cost: more technology creates more mediation, adds friction to communication, and makes it harder for individuals to wholly show-up, and develop a space of co-creation and thirdness.

Epistemic comfort

Abundance asks for creativity more than knowledge. There is no point to building towers of expertise; AI is drowning out such domains. Once a field is processed and cemented, the efficiency machine, algorithms, status quo, and single-minded humans who accept both, can process it.

Generous design does not need to climb to the top of a tower. There are too many towers to climb, and by the time you go to the top of one, there is a taller one built right next to it.

It understands that in a world of artificial intelligence (AI), cause-and-effect

Describe a moment in your life when you experienced the joy of learning

During the Covid-19 pandemic, when I saw the Earth reviving itself, I understood the damage done by us humans could be minimized.

Harshita Verma
Educator, India

thinking is not enough. Fully wrapping our arms around a system is a luxury we no longer have.

The interconnectedness of our lives makes order impossible. So, rather than writing up maps, we should carry a compass.

So much of our lives is about navigating the unknown; unknowing is a human state. The life-long learner accepts the liminal, open-ended universe. They are strong through intellectual vulnerability and adaptability. All rigidness crushes under the weight of change.

Great design is not a beautifully designed object put on a pedestal. It is the shining of different lights on that object. It is not the war of language, but the dance of opinions.

Being territorial about knowledge is as futile as trying to catch air. It is about walking in the dark, instead of waiting for someone to turn on the light, moving from the meta meaning to the lived experience and back.

The old trajectory of a monolithic self, acquiring knowledge in return for a career, leads to unemployment rather than retirement.

To engage generously across disciplines, to learn and teach, and to have a capacity to show up in ambiguity is the secret to a life of reinvention that binds our inter-relational experience.

Artifact thinking to process thinking

Traditional artifact thinking is driven by industrial ideas of efficiency and a narrow definition of collaboration. One that asks for people to stay in their lane and produce. The protagonist of the future is in intellectual movement; it is the learning to learn, instead of learning anything specific.

The ability to navigate oscillations and to author their context is what beats the efficiency machine. Process thinking asks for conviction and executive function, which is the ability to negotiate externalities with our creative surplus.

Creative surplus is the creativity that no one is asking for (yet). In the second water example, no one asked for water, yet provisioning for water will prove essential.

Is the job of a software engineer to devise a way to accomplish some operation (utilizing creative surplus), or is it to create X lines of workable code a day? Without care and attention creative surplus will disseminate as the background of one's work, or worse yet, as professional resentment. The continued development of the creative surplus, especially in collaboration with others, is a life-long process, and requires us to rethink how we educate and learn.

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This is not to denigrate solution or efficient thinking. Efficient thinking is essential. It is what gets our cars on roads and medicine in our stomachs. But it is not all there is.

Process thinking tolerates limited knowledge and does not need authority.

As an abundance of tools and answers shelters more of our creative lives, the questions' context matters. The authoring, borrowing, and integration of these contexts will give us the capacity to learn and navigate profoundly unknown situations with resilience and creativity.

From math to analytical thinking

The shift from matter (words, numbers, code) to meta (connection, models, systems) does not skip quantitative science. If you are a knowledge worker and not a scientist working to discover fundamental mathematical principles, there is little need to study how numbers add, subtract, and multiply. There is, however, material value in understanding why and how they do. Rather than memorizing multiplication, we should be teaching K-12 the history of Numerics and the value of the decimal point. Instead of looking for efficiency with the quant space, we should spend our time teaching students the importance of complexity, the limit (and usefulness) of Bayesian thinking, and how to draw their models. Biased algorithms show us the shortcomings of the field of AI not collaborating with the model directly. AI can algorithmically determine that I have queried about cameras and so can show me advertisements of cameras, but it cannot determine what I really want and serve up something that can actually help me.

A future driven by self-optimizing code will ask for conversation in the context (meta), over that done in numbers and code lines. The ability to thrive in the meta is the realm of the actualized human being.

Linking empathy in design thinking, the need to become human centered problem solvers is key.

From Reading to Writing

Counterintuitively, the writer asks questions, not provides answers.

The writer negotiates ideas and language; they marry what they know with inspiration to take a different shape in their reader's mind.

When writing from an intellectually dim position, they narrate the journey to invite criticality. Productive writing does not communicate facts, but the process of arriving at thoughts.

Reading without writing is what machines do. Reading as a form to amass knowledge is diminishing in value in the 21st century. As the previous paragraphs deposit, there is no point in memorizing; but there is great importance in oscillating, navigating, and contextualizing.

From job titles to self-authorship

Job titles are a shorthand for the world to understand you. They are useful and necessary because we lack the incentives to understand everyone we encounter fully. When we acknowledge the reductive language of job titles, mainly, if placed next to our inner world's rattling complexity, a chasm appears. We are a moving river of contexts, history, life experience, inspiration, and guesses about the future. The actualized lifelong learner can self-author their narrative: to go through cycles of imagination, curiosity, articulation, and integration of their creative surplus. That process asks for conviction and mixes with vulnerability, it is about living according to one's manifesto, even if not written.

Education, complexity, and creativity

As we are living in complex times, the role of education needs to be to prepare us to thrive in these times. Traditionally, education has prepared us with an algorithmic, knowledge-based path. These are still useful skills in context, but where the context is shifting and amorphous, education can better prepare us for the unknown unknowns, to be writers rather than readers, to be meta thinkers, to exploit whatever we find with creative surplus, and to shed our epistemic comforts to embrace the excitement of the unknown.

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Brian Arthur writes (The Nature of Technology, W. Brian Arthur) a general articulation of technology as a (1) phenomenon packaged in a (2) useful frame.

Focusing on one of those is an act of production ('known unknown creativity'). Asking for both is ('unknown unknown') creativity.

If I give you a cup and ask for water, I have given you a useful frame. If you have to infer the need for water and also the phenomena needed to carry it out, you are creating within an unknown unknown.

What needs to be taught to be productive members of society in the 21st Century?

Students should be taught to look at the world feelingly and made to realize that we will only be safe if the planet is safe. The only way to sustain life on this planet is sustain relationships with all the stakeholders.

Bharat Avalani
Marketing Guru, Malaysia

RSA | Fellow

Supplement: Embracing the Unknown in the Classroom

Lead Timothy Stiven

Editors: Jonathan Tavssberger, Mitch Weisburgh, Zoë Camper

I am a teacher. During the pandemic, I have had to redefine success and failure, unlearn the teaching practices I've used in the past, and redefine my role with my students.

Teachers are essential in the formation of the lifelong learner, and, for the greater good, educators must first humble themselves to unlearn and embrace the unknown. Change towards the unknown is what explorers seek. A teacher is the wind, and the student is the captain of their own voyage.

The themes of communication, creativity, critical thinking, and collaboration can, and should, challenge the pedagogical paradigm, as long as we untie ourselves from traditional modes of assessment. Standardized lesson plans quantify the data received, assess if it was understood, and then deduce if the student replicate it. The resulting product: the student is reduced to a redundant machine.

Educators are not computer programmers. Educators help mold future life learners, in partnership with parents and civic institutions. In an age of data abundance, discernment will be the daily takeaway, not the rote memorization of any standardized data. The entire concept of failure must be epistemically and ontologically redefined. In the process of creating a sense of self, there is no G.P.A. There is only belonging.

Today, when an Advanced Placement student is asked: "What do you think?", she often responds in a robotic fashion, with a jaw drop, "I didn't think you were going to ask me to think." A parent speaks with sincere pride of how well their son can memorize facts. Asking that child, "Why did you take the class?", elicits the response, "My parents made me take it", or "I have to, in order to get into a good school."

Practice and play can be the same words, and practice, therefore, can be meant to be fun. Muscle memory is not rote memorization, but, instead, is the creative impulse that is within every child, to become problem solvers. Teachers should look at their syllabi and ask whether their charges will need to know this in 40 years, that is the late Mid 21st century- past the point of a potential singularity. Do educators teach the students how to stress over points today for the future, or how to think?

Distance Learning, properly equipped and executed, liberates students, excuse the pun, from their own devices. That is, self-motivation, empathy, and solidarity

are the lifelong lessons. The world is out there, go find it, whether that means confined to their bedroom or released from the four walls of the classroom.

Even prior to the COVID-19 era, once we change the word from 'student' to 'child', the idea that they are learning every waking moment makes sense. But change it back to 'student', and somehow leaning only happens during school hours, and learning stops every day at 3:00 and every year at the end of the second semester That is wasteful and dangerous. The pandemic is an opportunity, if we give the child the skills, they can excel in a deconstructed learning environment. It is their nature to play, to practice, to team up, and reflect.

Project learning can turn the child into an explorer, not a means to an end, in class or via distance learning. Whether that be in Language Arts, the Sciences, or more importantly, the Humanities. A successful day in class is no longer how much the student memorized, but how did they experience their own voice by thinking critically, and articulating self-created ideas, either written or spoken. We no longer call our written work a Microsoft Word document, but a 'shared doc.' This new connected reality requires education reform, altering the meaning of homework in an age when schoolwork is done at home. A connected reality cries for local, binational, and international collaboration. Even when normalcy returns, why would we ask the child to return to the way we did it before, only because that was the way 'we have always done it?' It would be as if they, and their parents, were mere hamsters begging to get back in the wheel, convinced by society that they were doing something productive.

In his piece above, Nitzan Herman refers to the trap of epistemic comfort. We need to free ourselves from the epistemic comforts of rigor and test scores.

The pandemic has forced us to reducing didactic content and mind-numbing homework, creating what is perceived as a 'vacuum of rigor', by some parents and administrators, yet it also provides space for students and teachers to reach out and connect. Thinking globally now allows the student, the child, to reach out creatively in new ways. Zoom and Google classroom and other web-based learning platforms are the new pen pal.

The vacuum is being filled by students, for students. They are learning the skills that will last them the rest of their lives. Students are utilizing all this free time, some by creating curriculum for those who do not have it, other by pursuing and mastering other interests. For other students, we need to find the motivation for them to use this time creatively. Let us reinforce this creative thinking and encourage students and teachers alike to communicate with other students around the world, reconnecting all of us in a fractured world. No grades, no homework, no fear of staying up all night for the deadline. COVID-19 has taught all of us the truth, time is relative, thus so, are deadlines. Students will stay up late at night, not because it is due in the morning, but because they are playing. In play, time is relative.

What needs to be taught to be productive members of society in the 21st Century?

How do we help students understand global realms of information while respecting conflicting norms within various societies? Information leads to knowledge, and how the individual interprets information impacts what knowledge is developed.

Ronda Cypret-Mahach, Ed.D, Educator, USA

RSA | Fellow

Supplement: The Pure Joy of Learning

Lead: Zoë Camper

Contributors: Ruth Travers, Jessica Slayback

This paper would be incomplete without an exploration into what drives us to want to learn, what joy or annoyance drives us to reach for more, to know more, to share knowledge, and really understand what drives our hunger for information. It is important to understand why that drive is thwarted within so many individuals as they progress through school and life, and how the opportunity to experience a magical breakthrough moment can still be experienced if we understand how to provide space and allow it in.

> **"Neuroimaging and other research tools continue to yield more data about the brain's response to stress including sustained or frequent boredom. This comes at a time when boredom is increasingly problematic; as school funding and teacher performance ratings are increasingly tied to test performance. Consequently, there is more time dedicated to repetition, drill, and testing of facts that have no clear personal relevance or value to children." Judy Willis M.D., M.Ed. (Psychology Today 2015)**

According to Willis, if boredom prevails the brain turns off and becomes disengaged; it will be impossible to create the flow that is fundamental to experiencing the joy of learning. The flow of brain traffic effectively stops and retaining knowledge becomes physiologically impossible.

Flow is a key theory created by Mihaly Csikszentmihalyi. He explains, "The best moments in our lives are not the passive, receptive, relaxing times . . . The best moments usually occur if a person's body or mind is stretched to its limits in a voluntary effort to accomplish something difficult and worthwhile" (Mihaly Csikszentmihalyi 1936-present).

The disappearance of the opportunity to experience flow is compounded by the disappearance of the creative subjects in modern day schooling. Plato (Born between 429 and 423 BCE) said, "I would teach children music, physics and philosophy, but most importantly music, for the patterns in music and all the arts are the keys to learning".

Ruth Travers, Fellow of the London School of Music and creator of the Stave House methodology for learning, considers music to be one of the best ways to experience joy.

"I consider myself incredibly lucky to have grown up in a home where music was all around me. It has been suggested that babies learn to be musical from more experienced music makers. If you are immersed in music, you are far more likely to have an inherent feel or talent for it. Growing up in a musical family or being encouraged to learn an instrument does not however necessarily mean that

one develops the joy of learning music, and as a teacher I feel it is paramount that the one thing a music teacher imparts is the love for music making.

We know that music is largely written from a desire to share an emotion. The listener hears the music and relates from life's experiences to the feeling the music inspires. Music elates me, calms me, inspires me, comforts me, thrills me and motivates me. One of my biggest pleasures has always come from being able to pick up any piece of music and play it — the journey then becomes endless, the path so inviting and the opportunities myriad."

> **"When someone is taught the joy of learning, it becomes a life-long process that never stops, a process that creates a logical individual. That is the challenge and joy of teaching."**
> **(Socrates 470 BCE — 399 BCE)**

> **"Once children learn how to learn, nothing is going to narrow their mind. The essence of teaching is to make learning contagious, to have one idea spark another." (Marva Collins 1936 — 2015)**

Jessica Slayback, Founding Director at 'The Realm' feels so strongly about power of creativity and flow that she formed a 'non-school' to ensure they could develop and provide a creative environment for children. 'The REALM' Creative Academy grew in response to the lack of creative outlets for children in many of the schools and communities today. As more emphasis is continually being placed upon test scores as a means for determining a child's level of success, we have noticed extremely talented and powerful children losing faith in their academic and artistic potential.

"We offer a unique and innovative approach to what education can look like when an individual experience for each child is created based on their needs, their strengths and their goals. In order to play by all of our own rules, we have chosen not to be a school. We provide authentic educational experiences that offer kids the ability to use their creativity, curiosity and passion to guide their learning.

In our journey to create and foster new forms of learning, we have continued to grow, rethink and adapt to the needs of our community, our kids and the world. As we move forward, we continually ask ourselves, 'How can we become a beacon for a new style of education that promotes the growth of aware, empathetic, joyful, purpose driven humans?'

A key differentiator in this new form of learning environment is the ways in which the space, communication style, mindset and choices foster the nurturing of our Non-Physical Needs: Purpose and Meaning, Nurturing Relationships, Explanations, Expression, Inspiration, Belonging, Self-Worth, Challenge and Transcendence.

For the past 11 years, we have witnessed so many successes in our students,

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teachers and families. We have seen so many kids thrive when given the space to do so. We have witnessed transformations occur again and again when acceptance, appreciation and individuality drive our approach and response."

> **"In this realm of intrinsic learning, intrinsic teaching, and intrinsic education, I think that the arts are so close to our psychological and biological core, so close to this identity, this biological identity, that rather than think of these courses as a sort of whipped cream or luxury, we must let them become basic experiences in our education. They could very well serve as a model; the glimpse into the infinite that they provide might well serve as the means by which we might rescue the rest of the school curriculum from the value free, value-neutral, goal-lacking meaninglessness into which it has fallen". (Abraham Harold Maslow 1908 — 1970)**

Research into creating a joy of learning, and a thirst for knowledge is extensive; as represented by the practitioners and researchers quotes and comments above; this is a brave and essential aspiration for educators, and one they care deeply about achieving.

The joy of learning is an ever-present possibility that if recognized and allowed to flourish can form a thread that will build into a joy of living and learning, for life. It cannot be graded, nor a value attached, it cannot be assessed, and yet, if it is achieved, it is the biggest motivator and the most precious and valuable emotion an individual can experience.

Both Travers and Slayback are supplying the 'whipped cream or luxury' of Maslow and the environment for Csikszentmihalyi's flow, they are using well understood tools but are still on the edges of mainstream educational practice; can they, show us all, the way to create an open and willing student who's drive for more is well established and leading them forward, towards a life of fulfilment?

Theme Three: Solving Complex Problems Where There is no Predictable Solution

Embed a platform for Agility in Context Methods, and Output. As styles, preferences, processes and subject matters evolve at exponential rates, we can no longer continue in the false belief that any of these things are universal or evergreen. How can education platforms support such evolution — especially in fixed bureaucratic structures?

Describe a moment in your life when you experienced the joy of learning

Many small Eureka moments along the way, when realizing something new and interesting, which sparks energy and triggers the desire for more. Of course these moments are always part of a longer process in our mind, involving our subconscious and conscious thinking. But the feeling in that one Eureka second (when the thinking volcano irrupts) is very powerful and addictive.

Ravid
Design Guru,
Israel

Design Thinking and The Wicked Problem of Education

Lead: Lynda Leavitt

Editors: Nishan Chelvachandran, Zoë Camper

The recent global pandemic revealed an educational system in shock, unable to meet the needs of students, parents and stakeholders who hold a vested interest in teaching and learning. Although forced upon all, the pandemic opened the door to new possibilities, an optimistic invitation, leaving many to ask what type of educational experience we want for our children. Do we want them to return to the same system they left, can we experiment with new modes of teaching and learning, and can we design a post-pandemic system that can better prepare them for adulthood?

Up until recent events, and all around the world, our educational systems included rigid structures incapable of fulfilling societies' potential to reach and teach all students. What once seemed relevant, a focus on compliance, agrarian and industrial models, rote memorization and grades, no longer appeared applicable. The current pandemic has forced all of us to rethink education's intent and offer the possibility of innovation through a new way of thinking using the creative process of design.

Design thinking offers an unlimited capacity for creative problem solving through a human-centered approach. Human centricity is at the heart of design thinking and the process of teaching and learning. Even though educators profess a belief that all children can learn, over the years as new policies emerged, the process of continual improvement lacked creativity and forward thinking, leaving many to experience an economic and academic gap, which was breaking the promise of educational opportunity. Internationally, educational leaders repeatedly tried and failed to reach and teach all children.

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Members of The World Bank recently wrote,

> **"The world is facing a learning crisis. While countries have significantly increased access to education, being in school isn't the same thing as learning". (2019, para. 2).**

Interestingly, the same members forecasted the importance of technology, "millions of students are benefiting from the effective use of technology, but millions more in the developing world are not" (para. 14). Little did these authors know how critical technology would become to sustain learning during the global health crisis that awaited us all.

Prior to the pandemic an overwhelming amount of evidence existed documenting the failure of educational systems. The pandemic just made these failures blatantly visible. From the onset of the crisis, students began learning from home; while many individuals gained access, far too many lacked the technological capacity and for the first time, parents became aware of the daily details of learning, how difficult learning could be and how valuable a highly effective teacher was to a child's academic experience. Educators struggled with the sudden inability to meet the needs of their students. Administrators and policy makers saw parents, students, teachers, and businesses struggling. All this leads to revisit the question of the role and methods of education and how best to educate.

What needs to be taught to be productive members of society in the 21st Century?

Independence of thought and the ability to question the world and its embedded systems, development of personal skills and talents with a mind to fulfilling personal dreams and goals, outdoor learning to promote a connection with nature and respect it, and how to engage with politics

Martyn Housley-Smith
Educator, United Kingdom

Transformation in education is long overdue; education cannot meet the needs of today's students, parents, employers or society at large without innovation. Innovation requires intelligent design in the world of unknown unknowns that Nitzan Herman noted in Theme two.

Design principles support and serve as a catalyst for innovation. Tim Brown, an expert in design thinking stated, "Design thinking can be described as a discipline that uses the designer's sensibility and methods to match people's needs" as cited by Naiman (2020).

What education requires now is to focus on the future, one's ability to create, 'improving the quality of life' for all, at every level of the learning experience. Learning is a lifelong entity and should never stop once one earns a diploma or a degree. "Einstein was certainly right, we can't solve problems by using the same kind of thinking we used when we created them" (Dam & Yu Siang, n.d., para. 1). "What we need are new choices…. new ideas that tackle the global challenges…new strategies that result in differences that matter and a sense of purpose that engages everyone affected by them…we need a new kind of thinking, a new approach towards innovation" (Brown as cited by Dam & Yu Siang, n.d., para. 3).

Design thinking answers Brown's call for the recent education disruption many refer to as a multi-faceted wicked problem not easily 'fixed'. Problems

throughout education are similar to a complex gear; with the alteration of one component, a different component shifts, all intricately connected. No one said educational solution seeking was easy. On the contrary it is completely the opposite. Iterating and utilizing the design thinking five process model, 1) empathize, 2) define, 3) ideate, 4) prototype and 5) test, creatively places the focus on the stakeholders, the individuals directly involved in the educational problem first, taking a human-centered approach to seeking solutions.
The individual is at the heart of the learning process. Although many describe design thinking as a non-linear process, the five steps can be applied as stages where interdisciplinary teams engage in inductive and deductive reasoning always focused on reaching shared goals.

During the **empathy** stage, the creative team places a focus on all individuals directly engaged with the problem seeking a solution. In the complexity of education, many individuals could be associated with the problem such as students, parents, teachers, administrators, staff, and/or community members. To empathize, one needs to become immersed in the area of concern, the physical context of the current issue, using the specific tools of interviews, observation along with seeking out current research and gathering available secondary data. The goal of empathizing is to set aside assumptions and reveal the 'truth' of the underlying issue. All data collected during the empathy stage becomes valuable to the interdisciplinary team in order to clearly define the problem. Too often individuals in education assume that they understand the problem and have the answer. This effectively hides the unknown-unknowns, which can be the thorniest dilemmas to try and resolve. Gathering data is like striving to see the two thirds of the iceberg that lies below the surface of the sea. Once the team has defined the problem, the **ideation** stage begins, which is the process of brainstorming all possible solutions; no idea is too simple, complex or unrealistic, all ideas are considered.

Individuals engaged in design thinking frequently refer to **prototyping** as failing fast and frequently. Prototyping involves creating models of the solution in whatever form that may be required. All prototypes are shared with members of the interdisciplinary team and those involved with the issue. All individuals involved with the problem are seeking the best solution by investigating the pros and cons of each prototype. After prototyping is complete and with all considerations addressed, the **testing** phase begins. Testing is simply the application of the proposed solution which often leads to additional questions, ideation and prototyping.

Education is a wicked issue, complex with all components interrelated. To answer the question, what our students should return to, requires a high level of creativity and a human centric approach, design thinking offers both. If we simply choose to transform our current system, without the discipline of the five-step design methodology, we will tragically fall short, missing the optimistic invitation to truly innovate and create a uniquely different future.

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Describe a moment in your life when you experienced the joy of learning

As a mathematics student, there was a moment when I realized my studies were about reaching an understanding, rather than merely reaching a correct answer. From that moment learning was a joy and the inquisitive part of my nature remained strong as I became an educator and then transformed into an educational researcher.

Sherrie Wisdom
Post secondary Educator,
USA

Supplement: Design Thinking and The Value of Real Engagement

Lead: Zoë Camper

Editors: Lynda Leavitt

> **"Imagine a leap from our current self to our emerging future self. We are facing that threshold, gap, chasm, or abyss on all levels of scale: as individuals, groups, organizations, and as a global community. How can we activate our deeper levels of humanity to bridge and cross that divide?" (Presencing Institute)**

The pandemic while, for some, was predicted, and predictable, for most it brought fear and a level of uncertainty, unprecedented in modern history. Replacing traditional teaching with design thinking will better equip students to thrive in an uncertain world and enable students to understand that the future is theirs to impact and create to ensure they are better prepared for change and all its consequences.

Thus, design thinking is not merely a methodology for beneficial innovation as depicted in ***Design Thinking and the Wicked Problem of Education*** it is also a tool of instruction that engages and motivates students, and teaching design the design thinking process prepares students as effective change makers.

The world the student knows, the economic or social context they inhabit, in the moment or process, of applying design thinking is based on or is within their own understanding or bias. Imagine that same student learning how to break free from what they think they know and from their own biases. Breaking out of that context and enabling a student to understand the world outside of their own context will be key to ensuring that design thinking will become a life-skill beyond the educational setting.

Students will need to understand who is setting boundaries, who is implying specific futures and how to deconstruct influence and bias within society. The student will learn and understand their position and be aware of difference, impact, and diversity. Understanding that the future is an unknown is essential. Helping students become comfortable with the limits of their own knowledge and understanding is a key element in making 'design thinking' a successful and powerful as an approach to learning. The future will require us to fuse ethics and philosophy education into design thinking to enable students to not only 'think outside of the box', but to also understand that the box was a fake premise in the first place. By including ethics and philosophy into design thinking we will enable students to question what design means and who and what they are building ideas, products, or solutions for. Continuing to design solely for the able-bodied majority or average human being (not that this person exists) will, by default, exclude a huge portion of society. An inclusive approach to the **empathy** stage of the design thinking methodology will also

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infuse an understanding of when an idea might be good or bad, when the idea may require action or inaction, and where, sometimes, the human instinct is to do, to make, or influence.

Learning to know the impact of thought and action on another human being will be intrinsic to applying design thinking in a way that enables all learners to apply thought and process that always include thinking about when not to do something. We see a future where students learn how to think, learn the impact of an action or a thought and understand their position or context in bringing something, whether a thought or an action, into reality. Combining design thinking with a full understanding of context and consequence will enable students to thrive in the level of uncertainty the pandemic brought to the world.

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Presencing Institute — Theory U: Leading From the Future As It Emerges

The Presencing Institute was founded in 2006 by MIT Sloan School of Management Senior Lecturer Otto Scharmer and colleagues to create an action research platform at the intersection of science, consciousness, and profound social and organizational change.

Shoshana Zuboff The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power — 'Who knows, who decides and who decides who decides.'

What needs to be taught to be productive members of society in the 21st Century?

Efficient skills in technology and to be able to keep up with changing technology. Social and emotional health on par with academic success.

Anonymous, Educator
United Kingdom

Theme Four: Access, Inclusive, Difference, Universality

While there are cultural differentiators that education can only partially address, they need to be accounted for and promoted. As long as accessibility is restricted, the chasms among learners, and the subsequent biases, will only continue to worsen.

> **"Prejudice is a burden that confuses the past, threatens the future and renders the present inaccessible."**
> **Maya Angelou 1928 — 2014**

Kinship, Belonging and The Challenges of Learning in a Non-Inclusive World

Lead: Julie Samuels

Editors: Amy Moser and Zoë Camper

The pandemic has had a disproportionate impact on women, children, and the disenfranchised in society globally. Kinship, belonging, being present and able to learn is not a privilege; it is a fundamental human right. Biodiversity in society is a matter of survival, it enables all the planet's citizens to thrive, and will end the dominance of the white male tribe that will, otherwise, lead us to extinction. Understanding the importance of belonging and thriving and a reciprocal relationship with our planet forms the basis of this work. The future we see is one of continuous learning and the celebration of belonging and personhood.

As we embraced our family's New Year traditions, we said goodbye to 2019 and celebrated the arrival of 2020 no one could have foreseen the year that lay ahead. Covid-19, a global pandemic, a public health emergency that continues to transform planet Earth (positive for the environment due to the reductions in carbon emissions), culminating in lockdown, which has impacted upon our civil liberties, furlough, mass redundancy and home schooling (with and without access to a computer, Wi-Fi or handheld electronic device) to name, but a few changes. The most detrimental impact of the Covid-19 has been the millions infected, often resulting in long-term Covid suffering, and, unfortunately, for far too many, death. How and where do we start to make sense of this? What do we unpack first?

What the pandemic has shone light upon are the vast inequalities that have persisted for far too long, those who have and those who have not. This is a social problem. This is a global problem. The Health Foundation reiterated many of these inequalities in a recent study. The reports stated that people started the pandemic disadvantaged and this continued as they entered lockdown. One of the key points from the study was; "People facing the greatest deprivation are

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experiencing a higher risk of exposure to COVID19 and existing poor health puts them at risk of more severe outcomes if they contract the virus. This is exposing the structural disadvantage and discrimination faced by parts of the black, Asian and minority ethnic communities". Other key points included, "As we move from crisis management to recovery, government, businesses and wider society all have a role to play in giving everyone the opportunity to live a healthy life" (Bibby et al., 2020, p. 3).

How can we move beyond the pandemic and prosper when so many inequalities continue to exist? What impact has this had on our physical and mental health? How and will the pandemic affect today's children and future generations?

What are the issues?

How are you present? In the classroom, at college, at work, as you open your eyes, as you wake up. How do you turn up? Who are you? Or are you one of the hundreds of millions of 'missing'? The growing group of the disenfranchised is made up of children, women, those living in poverty, with little or no access to education, family, someone to love them, or, at the very least, some sort of guardian whether provided by a State, NGO or charity.

Covid-19 has confirmed what we already knew. The world is in crisis. The world is in a learning crisis. UNICEF (n.d.) has argued, "This learning crisis is the greatest global challenge to preparing children and adolescents for life, work and active citizenship. Schooling does not always lead to learning. Worldwide, there are more non-learners in school than out of school". This fact is not in dispute. Yet, to date there has been no positive action taken. It is still only given lip service. Positive action would require global government collaboration, a shift and sharing of wealth and power, and the opening of access to technology, education and learning for all.

Education has always been touted as the way forward; a way out of poverty, improve your quality of life, increase your knowledge, better prospects, improved employability, work satisfaction, financial security, and better standing in the community etc., After all, the benefits of education are both personal and societal. For many, new educational approaches and initiatives continue to improve many aspects of society and personal achievement. Education, however, is not the same as learning. Eneza Education (2017) explained, "Education is considered a process through which a society passes on the knowledge, values and skills from one generation to another. On the other hand, learning is a process of acquiring new skills, knowledge and values". For those unable to access education, often through no fault of their doing, how can they access the knowledge that is passed on from one generation to the next?

As individuals, we have different learning potential. Wendell Berry (2002) argued that "all our problems tend to gather under two questions about knowledge: Having the ability and desire to know, how and what should we learn? And, having learned, how and for what should we use what we know?" (p.183). Due to social and economic disadvantage, many never fulfil their educational and

learning potential. As noted by The Social Issues Research Centre, "Human societies have always maintained a hierarchy among their members: rich/poor, strong/weak, leaders/followers such classifications are universal" (2007, p. 26). It is because of maintenance of this hierarchy that the separation of people into different categories based upon their degree of ethnicity, gender, ableism, sexuality either real or perceived has continued to marginalize who seek to free themselves from these categorizations.

Is education enough to change the world, to change attitudes, to combat racism and other types of discrimination and inequality? Is male dominance leading us to a better world? In 2020, of the 193 countries recognized by the UN, Men lead 172, Women 21. It is common knowledge that "Women's inclusion at leadership tables promotes stability" (Vogelstein & Bro, 2020). How many women are CEO's, are elected head of state or government, have been president, or prime minister, or peace negotiators? How many are non-White, disabled or not their gender assigned at birth? Better World Campaign advocates the significant role that women can play in the world. They stated, "Evidence proves that women's participation is vital to achieving and sustaining peace, but women continue to be excluded from key peacebuilding processes" (Meyer, 2018). Then why is it more likely that a non-White person, a woman or a disabled person will serve at the table rather than sit at the table? Why do they have to shout to be heard rather than speak and be heard?

Belonging, having space to be different, moving from wealthy-white-male dominated to women, people of colour, economic strata, learning style and ability equity, how education shapes and is shaped by bias.

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A key question we should be asking is whether access to education for all will solve much of the problems that humans and the planet faces? How and who would finance it? The World Bank article 'The Education Crisis: Being in School Is Not the Same as Learning' (2019) acknowledged the learning crisis faced by the world. The article highlighted the difference between attending school and learning. The article also made reference to the "hundreds of millions of children reach young adulthood without even the most basic skills like calculating the correct change from a transaction, reading a doctor's instructions, or understanding a bus schedule, let alone building a fulfilling career or educating their children" (2019) worldwide.

So, the majority will not turn up and cannot turn up. Their voices are not heard and they are not in any conversation. What will happen to them in generations to come? What will the world be like if we do not focus on inclusion, education and opportunity for all, and meaningful inclusion as in 'nothing about 'the missing' without 'the missing'.

Covid-19, the global pandemic continues to extend the divide between those who have and those who do not have access to what is required to actively participate in society. What can we do to bridge this divide since its eradication is highly unlikely? Importantly, USAID stated, to date "three quarters of the world's poor don't have a bank account, and access to capital remains a significant barrier throughout the developing world" (n.d.a). USAID also reminds us that "For societies to thrive, women and girls, men and boys must have equal access to education, healthcare, and technology. They must have equal

control of resources, lands, and markets. And they must have equal rights and opportunities as peace-builders and leaders" (n.d.b).

We already know that "Children living in poverty are already significantly disadvantaged compared to their wealthier peers" (Holmes & Burgess, n.d.). How can you have access to technology when you don't have enough money to pay for essentials? How high on your list of priorities is technology and education when you don't have enough food to eat or, for many, access to clean water or a place that you can call 'home'?

Research by Hannah Holmes and Dr. Gemma Burgess at The University of Cambridge found, "The coronavirus lockdown risks turning the problem of digital exclusion into a catastrophe of lost education and opportunity for the UK's poorest and most vulnerable" (n.d.) Their findings published in their article "Pay the wi-fi or feed the children": that "Coronavirus has intensified the UK's digital divide", is applicable to many countries. The researchers have stated that "the public health crisis currently gripping the UK stands to make the impacts of digital exclusion worse for the millions of people. affected, and the poorest will be hit the hardest" (Holmes & Burgess, n.d.). This is not just a UK problem. This is a global problem.

The following statement by The World Bank is a reminder of the global crisis we are in, "Now, for the first time in a generation, the quest to end poverty has suffered its worst setback. Global extreme poverty is expected to rise in 2020 for the first time in over 20 years as the disruption of the COVID-19 pandemic compounds the forces of conflict and climate change, which were already slowing poverty reduction progress …689 million people live in extreme poverty, surviving on less than $1.90 a day… Half of the poor are children. Women represent a majority of the poor in most regions and among some age groups. About 70 percent of the global poor aged 15 and over have no schooling or only some basic education" (2020).

Life among the ambulances isn't an experience in the style of Jack London a fictitious character who wanted to experience London's Jagos or slums, (Call of the Wild (1903a), The People of the Abyss (1903b), White Fang (1906) AKA author John Griffith Chaney 1876-1916), it is real, it is life for the many, where support has vanished, the tiny grip on a diminishing societal support structure has run through their fingers, where police know to police (The End of Policing, Alex S. Vitale (2017)), things happen to them and self-determination left a long time ago. The gap between the rich and the poor is huge as is now the chance of slipping from coping to joining the 'missing' as a result of the Covid-19 pandemic.

What needs to be taught to be productive members of society in the 21st Century?

A love for the natural world, respect for wildlife and environment. Independent thinking and learning. Peace-making skill, consideration and a moral compass.

Ruth Travers
Music Educator
United Kingdom

Belonging, understanding the impact of

colonization (linguistic imperialism)

How does the language we use reflect one's identity, ethnicity, gender and wealth? How does it impact your position in society? Who are you? Where do you belong? According to Marsh et al., (2007) "The notion of belonging, or social identity, is a central aspect of how we define who we are. We consider ourselves to be individuals, but it is our membership of particular groups that is most important in constructing a sense of identity. Social identity is a fundamental aspect of what it is to be human" (p. 4). How then can we differentiate between belonging vs. fitting in? How often can you turn up and be yourself? How often are you judged by your gender, skin color or your dialect? How often have you felt marginalized because of your use of language?

Stout & Dasgupta (2011) have written extensively about the role of 'exclusive language'. They stated, "Exclusive language is language that uses words specifically chosen with the intent to exclude an individual or a group. Over complicated, verbose, designed to exclude. Gender-exclusive language is a type of subtly sexist language that makes reference to a single gender group thereby excluding other gender groups [sic]". However, by simply changing our language, we change our minds and the way we act in this world. In doing so we might potentially open ourselves up to vulnerability. Brené Brown believes we have nothing to fear. Brown (2015) argued "Vulnerability is not the winning or losing; it's having the courage to show up when you can't control the outcome. Vulnerability is not our weakness; it's our greatest measure of courage" (Brown, 2015, p. 4). It is through this process that we might show humility. Humility is good for everyone.

Equity of opportunity, access for all

What do we mean by equity of opportunity? It is not about 'walking in someone else's shoes'. It is about understanding that people are different, have different references, different reference points, and different contexts. It is about living in vastly different worlds. How can we achieve this? Could we start with Holmes and Burgess' suggestion? "In the long term, strategies to close the digital divide, both through widening access and improving digital skills, will be required in order to build a more equitable society" (n.d.). How might this be achieved when millions of people continue to live in poverty? Look around your house. What do you see? More than you need? Might the sharing of wealth allow everyone a chance to prosper, regardless of race, gender and disability?

It is a fact that children with disabilities and from ethnic minorities are more likely to be left behind. It is also fact that for girls in some parts of the world, education opportunities are limited. How can we change this? The change may come if we are willing to accept our role in the marginalization of others, whether consciously or unconsciously. According to Brené Brown (2015) "Integrity is choosing courage over comfort; choosing what is right over what is fun, fast, or easy; and choosing to practice our values rather than simply professing them" (p. 123). This, however, is easier said than done. Perhaps, it's time for us to show

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our vulnerability. UNICEF argued, "Without skills for lifelong learning, children face greater barriers to earning potential and employment later in life. They are more likely to suffer adverse health outcomes and less likely to participate in the decisions that affect them, threatening their ability to build a better future for themselves and their communities" (n.d.). If the planet is to survive, we need to invest our children. They are our future. They all deserve a chance to reach their full potential.

Reciprocity, empathy and understanding privilege

Does the color of one's skin matter? Do you judge someone differently because of the color of his or her skin? Does it matter what color skin the lead or editors of this paper have? Can you guess the color of my skin by the way I write? If I said I was non-White, would you continue to read the paper? Does the color of someone's skin affect their experience of discrimination, segregation, and poverty, belonging vs. fitting in, humility, disability, gender and education?

Some of the answers to these questions might be found in John Howard Griffin 1959 social experiment documented in his book titled "Black Like Me". To understand the lives of black people in the American South in the late 1950s, Griffin, a white man temporarily altered the pigmentation of his skin to experience, firsthand, the harsh reality of life as black man in Southern America. Griffin kept a journal that documented his life as a black laborer. First published in 1961, in book documented the harsh and truthful reality regardless of whether "his discoveries proved to be prejudicial, embarrassing or naïve" (2019, p. 187). What would make a white man want to experience life as a black man? Was it Griffin's privilege as a white man that allowed him to take on such a social experiment? Does Griffin's experience as a white man pretending to be black evoke more empathy and understanding about racism? Why did a white man need to prove that racism existed? Why would no one accept the word of a black man? Offering some insight into why he went on this journey, Griffin wrote, "If I could take on the skin of a black man, live whatever might happen and then share that experience with others, perhaps at the level of shared human experience, we might come to some understanding that was not possible at the level of pure reason" (2019, p. 188).

Much of the developed world has prospered, due to the enslavement, racism and the exploitation of black arts, culture and heritage. Unfortunately, "We tend to deny that racism exists in this century, but our denial perpetuates the systemic process" (Bonazzi, 2011, p. 188). Racial discrimination and inequalities still persist today. We should "Make no mistake: racism is deadly and breeds hate… changing shape from century to century but ultimately still grasping on tight within modern society" (Centre Point, 2020). Kimberlé Crenshaw has argued that it is critical that we understand "how race has operated in our history and our present" (Modhin, 2020). Crenshaw has continued to argue that racial discrimination persists due to "stubborn endurance of the structures of white dominance" (Coaston, 2019). In a discussion with Crenshaw for The Guardian (online) Aamna Mohdin explained "Crenshaw's work asked people to think of the privileges they brought into a space and how, through their actions

or silences, they contributed to the problem of racism".

Biodiversity in society — a matter of survival

What lessons does the concept of biodiversity hold for our society? Biodiversity has long been recognized as "the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems" (European Environment Agency, n.d.). How can we as humans, technologists, and citizens, preserve the diversity of our species? In 2013, Genevey, Pachauri and Pachauri reported, "Research has shown a strong empirical link between economic inequality and biodiversity loss. Gender equality helps stabilize human population growth and mitigate the pressure on other species and on natural resources. A minimum level of equality also appears necessary to successfully manage renewable natural resources for the benefit of all" (p. 101).

Robin Wall Kimmerer has proposed "Science polishes the gift of seeing, indigenous traditions work with gifts of listening and language" (Tippett, 2020). How can this be so? Is it possible that through this approach, mutual benefit for us all might be achieved? Understanding this approach and likening it to biodiversity is a powerful weapon. As humans we have continued to destroy the planet and the ability for all to thrive. In 2020, when the covid-19 pandemic first struck, the planet began to heal. Carbon omissions dramatically fell temporarily, the skies over industrial cities were clear and wild animals roamed in cities. What is the lasting impact of covid-19 on the environment? Does the pandemic, have the capability to bring about environmental change? Greta Thunberg believes so. Thunberg (2020) wrote, "In a crisis we change our behavior and adapt to the new circumstances for the greater good of society".

So, what about the future? What is the idea? How do these ways of thinking become ways of being and doing? How do we avoid extinction perpetuated by patriarchy and privilege that continue to determine the future of society? Evidently, "The equality-biodiversity connection … calls for greater attention to more distal socioeconomic causes — and ultimately to cultural causes" (Genevey et al., 2013, p. 107). Could these concepts, perhaps, preserve our humanity as our society moves closer to singularity?

How can we as humans, technologists, and citizens, preserve the diversity of our species?

Kimmerer has reminded us that "innocent or childlike way of knowing… We say it's an innocent way of knowing, and, in fact, it's a very worldly and wise way of knowing… because attention is that doorway to gratitude, the doorway to wonder, the doorway to reciprocity" (Tippet, 2020).

Is it worth preserving? Genevey et al., proposal that "equality does seem to

What needs to be taught to be productive members of society in the 21st Century?

Most of all, I'd like to see our children live their childhoods instead of an education system focused on farming drones with an expected earning capacity potential.

Darren Marsh
United Kingdom

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have an important relationship to biodiversity… In particular, social and environmental activists should heed the equality-biodiversity connection and work together to transform economies in a way that distributes resources more equitably both within the human species, and between humanity and the myriad of other species with a rightful claim to life and to flourish on Planet Earth" (2013, pp. 109–110) is a good starting point.

Can we resolve the issues?

"Being invisible and without substance, a disembodied voice, as it were, what else could I do? What else but try to tell you what was really happening when your eyes were looking through? And it is this which frightens me: Who knows but that, on the lower frequencies, I speak for you?" (Ellison, 2001, p. 581).
Where do we start? Can we completely reimagine the system? Do we start with the decolonization of our society's institutions? How can we reimagine the system without first decolonizing ourselves? When we talk about rethinking or reimagining education, we MUST iterate without ceasing until all stakeholders are satisfied. Is the land we inhabit not a stakeholder, a part of society?

In order to truly center these voices, we must make space for them by silencing ourselves and listening with humility as they find their voices. Many of these marginalized stakeholders have not yet found their own, true voice. Only by choosing courage over comfort can we dismantle society in order to reimagine it into something that serves all of us. Ralph Ellison made racial inequality visible to many who did not see it before. The Covid-19 pandemic has laid bare the inequalities of gender, race, wealth, and access, why can't we use education to help address these issues? Education is one way society passes knowledge, attitudes, skills, and norms from one generation to the next. Using design thinking to amplify the constructive potential of education may be one of the best investments' society can make.

There are four C's that are repeated ad-nauseum in education circles: Communication, Collaboration, Critical Thinking, and Creativity. There are, however, three hidden C's that we should talk about within education circles and beyond: Capitalism, Competition, and Colonialism. Whilst the strategy is around the promotion of the four C's, our culture has been built upon a model that pushes the hidden C's. This conflict of interest is inherent in the design and the cognitive dissonance is part of the disillusionment we feel with education in its current state. It seems pure hubris to think that we can redesign education with such little knowledge of ourselves, the absence of the voices of so many of the essential stakeholders, and such a short time frame.

So, we ask again what will happen when the majority will not turn up and they are not in any conversation? So, what will happen in generations to come? What will the world be like if we do not focus on inclusion, education and opportunity for all, and meaningful inclusion as in 'nothing about 'the missing' without 'the missing'. This also requires us, the ones who can be present and engaged to raise the alarm again, to make space, to listen, and ask the hard

questions about context, privilege and opportunity. We are here by climbing on the shoulders of others, now is the time to not only see who we are, but what we have taken. Our purpose now is to wait, stand aside, and remove the artificial limitations on love, life and learning, and opportunity that we, as those present have built, over centuries.

Now is the time to ask, "who knows, who decides, and who decides who decides" (Zuboff, 2019).

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What needs to be taught to be productive members of society in the 21st Century?

I think that a balance needs to be struck between foundations, enquiry based learning and practical skills. I see a lot of what my children are being taught, it is quite advanced but there seem to be certain foundations missing. The ideas don't seem to solidify and are quickly forgotten.

Emmanuel Arandiga, Video Producer, Australia

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Describe a moment in your life when you experienced the joy of learning

Anyone who shows a willingness to step out of the rat race and present their case for something they are passionate about triggers the joy of learning. That's not just academic either, I have had sparks from a lot of places; Bruce Dickinson, lead singer of Iron Maiden, inspired me to take up fencing when I read his autobiography and even my own 8-year-old inspired me to finally give tap dancing a go.

Martyn Housley-Smith
Educator,
United Kingdom

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Supplement: A Mother and Her Son

Contributor: Julie Samuels

An eight-year-old boy is sitting on the floor playing with his cars. He is using his hand to swirl them on the ground, picks them up and proceeds to bash them together loudly. The noise irritates his mother. The cars are Pokémon characters, and they are having a battle. His mother only knows that he is playing Pokémon because of the dialogue he engages in while he is playing. The news channel is on in the background. He loves to watch the news. If it's not the news on in the background, it's a nature or environment programme. The boy is neurodiverse.

His mother asks him what he likes about school. He does not respond. He continues to bash his cars and listen to the news. She asks him what he thinks children should be learning at school. He does not respond. He continues to bash his cars and listen to the news. His mother poses a different question. She asks, "If you could create your own school what would it be like?". He does not respond. He continues to bash his cars and listen to the news. His mother turns to walk away. The boy responds. He tells his mother, "Schools should put the able kids with the disabled kids". He stops bashing his car. He continues "It's OK to be different and we need to integrate not segregate. His mother sits down next to him. He continues to bash his cars and they have a conversation.

His mother asks whether he knows what segregation means. He replies, "Yes, they did it to black people and that's why Rosa Parks didn't give up her seat on the bus". His mother smiles with pride. He tells her "we need to see beyond people's differences and find new ways to communicate". He continued, "We

need to find new ways to play, play can be therapeutic and can make you feel good about yourself" (he does Lego therapy at school). He tells her "Play can lead to learning". His mother asks whether he has enough time to play. He responds, "My brain is playing all the time and I am learning all the time". He adds that he feels sorry for grown-ups because they are always too busy to play.

His mother asks him how he sees the future. He responds, "Life doesn't have to end. The world doesn't have to end". He stops bashing his cars and looks at her and says, "What happens next? It's up to me, you, us, everyone". His mother asks what he means by that. He responds, "Don't own it share it". His mother again asks what he means. He responds, "We are a throwaway society. I've watched lots of programmes on TV about it". His mother asks what can we do about it. The boy responds, "Action is how we save the planet. Words are how we change the world. Kindness is how we heal the hurt. Generosity is how we embrace each other". His mother tries to hold back the tears.

The boy is my son. He often struggles to have conversations with children. Not many children his age want to talk about politics, world news, the pandemic or environmental issues. He does not learn in the traditional sense. He learns through watching documentaries, the news channels, play, observation and listening. He may not get many or any formal qualifications learning this way. What he will have is a good understanding of the world that he interacts with, and knowledge that will prepare him to face whatever challenges people and the world throws at him.

What needs to be taught to be productive members of society in the 21st Century?

Empathy and patience. Which were in our nature and easy to apply in the past but are becoming less substantial and common in the current digital instant-result reality.

Ravid, Design Guru, Israel

Theme Five: Education: Purpose and Context

Introduction

Technology has enabled new skills, it has changed the way we act and interact, and it has brough new challenges. Culturally, we are more inclusive, including everyone, not just select groups, and we have different life goals challenges, and sensitivity than we have had in the past. Education is multi-purpose Preparing everyone for life, not solely to prepare for work; not just K-12 and University (and then you've learned all that education needs to teach you), but also Lifelong learning.

This theme explores what are the societal needs that education must or can meet in our changing world, along with some examples of communities that have implemented new initiatives, many utilizing technology, to meet those needs.

> **"Generated by the new humanistic philosophy is a new conception of learning, teaching, and education. Such a conception holds that the goal of education-the human goal, the humanistic goal-is ultimately the "self-actualization" of a person, the development of the fullest height that the human species or a particular individual can come to. In a less technical way, it is helping the person to become the best that he is able to become. Such a goal involves very serious shifts in learning strategies."**
> **Abraham Maslow 1908 — 1971**

Social Solidarity and Progress

Lead: Rachida Merbough

Editors: Nishan Chelvachandran, Mitch Weisburgh

Education is the main driver for human talents and societal skills. Its formal and universal form of learning helps us to enhance our thinking capacities and enables us to adapt and deal with the challenges we may encounter. It is also an expression of society's values, promoting social solidarity and progress, signaling what it means to be a member of a society and who has the rights to learn and to be well informed. Those with access to a better education often has the best possibilities of economic and social success.

Here, we explore the context and purpose of education as a universal right, as a system that expresses the values of society, that welcomes and provides opportunity for all.

Education of people, from their childhood to their adult years, is a modern concept that enables collective participation in all aspects of modern life,

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including employment, innovation, culture and communication. It is also an important catalyst of attitudes for example morality, ethics, responsibility, solidarity and diversity.

Society shapes education, which is the focus of the learning processes. Culture, personal skill, language, arts, math, and science; education subsequently shapes society as the future generations who have been molded by their education take their places. Connections between education and society continue to reflect adjustments within education policies in important ways. Economic development and the global influence of cultural openness and social diversity have allowed for interaction with new (or newly recognized) social needs. Education has evolved worldwide to become a formal system of learning which is influenced and influences economic and social development. The importance of education programs and curricula in some countries has helped them to achieve a high level of professional skills and economic flexibility (Carnoy, 1999). At the same time the evolution of labour-markets and the increasing economic competitiveness within globalization has imposed new challenges to the education system. In response to these changes, new opportunities emerged including childcare and women's empowerment.

In this context, UNESCO outlines that curriculum improvements in various areas of the world helped achieve an education system of quality that had positive effects on learning outcomes, especially through its participation in reducing inequalities in some areas of the world. With the interplay of culture, social developments, shared values and the rapid changes in innovation, technologies, and global finance, continued investment in education is needed for the ambitious transformation to achieve sustainable development in the next ten years (SDGs Learning, Training and practice, 2020). Examples of positive results in early childhood care and in women empowerment projects conducted by education policies attest to the feasibility of this ambition, which needs to be expanded and sustained in order to overcome societal obstacles to universal high-quality education.

The emergence of a new direction promoting inclusiveness and diversity is facing huge economic needs and significant differences in cultures and in languages. For example, new education priorities in some settings are focused more on fighting illiteracy, achieving adult learning, meeting societal change, developing skills for work and for life as well as educating generations for sustainable development. In forthcoming years, the education system will be associated with social trends that evolve with the rise of technologies and the internet, which will greatly spread knowledge and promote culture to achieve new education purposes as well as generate requirements for new knowledge and skills. These social trends can change the way we arrange the learning spaces as well as our learning processes. In fact, social trends would need to evolve towards benefiting students, teachers, and society in general.

The importance of education is highlighted by rapid change and the realization that education can respond to development, equity, gender equality, and

How has the focus of education changed as technology and culture evolve?

opportunities of the society at large. Education must be inclusive, diverse and open to different cultures to succeed. Education must ensure gender equality and provide sufficient language studies in increase social mobility and its impact on social welfare. Furthermore, the education system needs to be more flexible with supplying the workers who can provide economic growth in a time when jobs are rapidly evolving, while also fighting illiteracy, providing adult learning, meeting societal change, and developing skills for work, life, and sustainable development.

The rise of leading-edge technologies and the importance of the impact of climate change and business illustrate two areas of rapid change. They have modified the core competencies and work requirements that are urgent. In preparation for this transformation, we must create a context for new ways of thinking. Students will require an innovative process of learning that builds high social-emotional skills and prepares them for real world experiences, as well as preparing them for agile integration in society through flexible learning processes that empower them as citizens for transformational change.

As we examine the issues above, academic learning is only one part of the purpose of education. The system's successful approach to academic learning can serve as a model and starting point for individuals adapting to societal change and economic evolution, primarily through enriched academic programs. Consequently, we encounter some of the most successful stories based on academic excellence, but we still debate more about the failure of education to deliver success, real success, success in career, life, and family, not just success in academic test scores or graduation rates for all individuals.

This evolution of education, from a simple learning approach to a more complex system, where school is intended to lead society to success and to construct societal resilience and adaptation to common issues, is contrasted by a multitude of visions and lack of clarity among stakeholders. According to a recent study of the World Economic Forum on perspectives about education, there are conflicting views about education worldwide, the overall population disagrees on the extent schools should advance from academic learning and basic skills, creative learning or discipline.

In this context, our engagement is a collective responsibility for parents, students, teachers or even public institutions to enable educators and to provide learning processes that engage students in future-led learning. We are not just offering academic proficiency for those in higher quality education settings, but we are also preparing people for success. This is not solely a responsibility of the school system. A unified vision for education among stakeholders is needed to take education to the next level. This engagement is needed in order to acquire, adopt, and leverage new education platforms that provide collaboration inside school spaces, through open and interactive classrooms, as well as through innovative approaches that stimulate imagination for learning within practical problem-solving activities. Many of them are discussed within essays in this compendium.

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When our education system is future-led and built on pursuing student learning to achieve economic and social challenges and adapting to new changes in social trends to respond to the everlasting connections between education and society, our system can fully succeed, even beyond the ultimate objective of improving education for students' goals. This is not a static goal; you're not making some changes and then succeeding. Continuing academic development is a key issue that enables and enhances the professional competencies of educators and school principals. Investing in efforts, time and funding for school development makes education more effective in adapting to ever-changing needs while developing students' skills.

This broader objective of education raises awareness that diverse curricula, assessment and testing methodologies must promote a more culturally diverse, and inclusive society for all. Skillful students are assessed for their design thinking methods, how they interact with problem solving tasks in real challenging situations, how they adapt to chaotic complex situation, and their ability to communicate and collaborate with others. New skills, talents and knowledge are needed in order to adapt to creativity and to achieve diversity.

New technologies offer a momentous opportunity to realize the aspirations of different stakeholders using the transformations of our lifestyle and living space. New technologies in education can offer an interactive environment for learning and engage students more in and out of the classroom. Educational technologies can connect students to their peers and teachers, which create new opportunities for both teachers and learners. Technologies can change the way we assess progress. They can empower educators. These virtual technological connections can drive positive change in education, when used, for example, for monitoring the evolution of students in school, tracking their physical trainings through homes and city connected apps, or interacting with their teachers, other students, or society at large. These are fundamental examples of the important opportunities presented by new technologies to improve our teaching methods. Other improvements can be made to respond to different views on education, such as enriching curriculum and programs with new skills needed to face climate change and issues on sustainability. Many of these opportunities are further developed in some of the other essays.

This change-adaption education model cannot achieve our collective objectives without achieving the trust and acceptance that are needed from stakeholders. Actually, the main challenge is to provide education with a core system that will make it adaptable to the global challenges of society, and succeed in its evolution towards a future of well-being and success. The problem today is that, in many societies, education has been stuck in a stationary state despite the global changes.

While the educational policies implemented in some countries like the United Kingdom are rigorous and coherent, which enables teachers to provide academic learning processes of quality and high efficiency, many experts

suggest that the education policies should also include defining conditions in which the learning processes ensure student's quality of learning in the current contextual evolution. In a report on policy exchange UK, entrenched experts defend the strong and rigorous national education policy in the UK, which is built on education programs that ensure that all students are taught a core of subjects like mathematics, history, geography and science.

A rich learning environment with choices designed for students and teachers to engage in meaningful activities can contribute to future education.

On the other hand, a narrow academic definition, resulting in the loss of educational efficacy, may in some cases result in the loss of efficacy of students at school and beyond. According to social cognitive theory, social learning emphasizes personal factors and environmental factors that are all equal and determine each other (Bandra 1973) which helps us as humans to acquire knowledge (human capability), to pay attention and to memorize (observational learning), to learn a particular behavior (expectancy), to achieve mastery and finally to self-regulate. These are all elements that rely heavily on cognitive processes, these advances in learning methods when it's applied calls for a dynamic assessment process of continued assessment of students' achievements (Zhou, Brown 2015) based on valuation of their personal intelligence, group intelligence and personal development. In doing so, students integrate assessment within the learning process providing continual feedback based on their evolving understanding.

Statistical evidence suggests that a lack of competition is a relatively minor factor in keeping education from moving forward. Studying the effect of school choice on student performances conducted by authors Taylor (2000), (Hoxby 2001), Hanushek (1998), Marski (1992) and Levin (2001) indicates that parents choose between private or public schools upon criteria that include income, tuition fees, in district/ out of district location. Public/ private criteria are more likely to be used by families to differentiate between different schools (Taylor 2000). However, measures of school effectiveness do not determine how schools compete (Hoxby 2001). It can be argued that the competition between schools is a choice set by families in response to a school's marketing communications. To further explain performances of the education system, Carnoy (2000) and Levin (1998) indicate that the education system may rank poorly against equity criteria; and therefore, social cohesion might be affected by the school system competition through processes of higher input efficiency and lower output efficacy (Levin 1998). Looking around the world, one can find many broad models that are examples of success. In some countries, programs and special curriculum are offered to higher education students to help them acquire skills in the social innovation field. In Malaysia for example, the social innovation education initiative has economic and social impacts on marginalized communities. In doing so, Malaysia is promoting inclusion in society, which has benefits on macro-economic and fiscal policy. This initiative has resulted in the integration of their population by promoting employment and social mobility. For example, the social innovation initiative in Malaysia focuses efforts

Describe a moment in your life when you experienced the joy of learning

Hearing The Elgar cello Concerto as played by Jacqueline Dupres accessed my emotions in a profound way when I was a teenager, and I realized the communication one has with ones deepest thoughts and feelings when playing an instrument.

Ruth Travers
Music Educator,
United Kingdom

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on fields such as microfinancing and developing social entrepreneurship as well as giving more attention to science and technology-based activities, which aims at uplifting the social well-being of the society.

The importance of leadership has been demonstrated in many sectors including business and government. Whilst education needs leaders, and at the same time, education can lead. Educational studies in the U.S provides empirical evidence that the quality of leadership is a critical aspect of student achievement. We, the authors of this theme, believe that elevating leadership in education to improve the quality of the school is a big move forward in the education system, even while the size of leadership effects on students has remained a subject of debate. However, the exchange of experiences and knowledge may drive positive change, the education models that contribute to improvements of the effectiveness of learning and school organization do create conditions for spreading knowledge and innovation, which improves student results and enables success.

Both Japan and Canada have had success in the education sector. Japan's experience has demonstrated the development of formal and informal learning as well as the development of professional skills. This method has been successful in developing both personality, skills and knowledge at the same time. The Canadian experience in educational leadership has higher engagement and higher levels of student responsibility because it focuses more on assigning schools the responsibility and resources in order to adapt to changes.

Many innovations have been made in the field of educational policy adjustments worldwide, but the results of these assessment policies have not been globally conclusive in all educational models. The alignment between assessment policies and student outcomes is difficult to achieve. The dominant assessment methods are not based on the student's understanding, their personal development and their academic performance. Instead, the assessments focus on the workload and different definitions of student's progress and attainment. Government policies can actively encourage enriched educational programs that address emerging issues related to climate change, sustainability, the use of technology, and openness to different cultures and global knowledge. Emerging technologies can then provide teachers with programs that reduce workload, produce collaborative relationships between the education system components and generate adequate teaching materials that adapt the education processes to student needs.

In our present challenging and fast-changing economic and social environments, a unified vision based on leadership coordination and a new model of education build our expectations on continued processes of learning through all stages of our life. A dynamic approach to education with an emphasis on lifelong learning will provide motivational learning approaches that are made possible within a context of innovation and generalized educational content. This transformation could enable the implementation of a variety of resources, good practices and competencies in schools, at home or at work. In this context,

What needs to be taught to be productive members of society in the 21st Century?

Rights and Wrongs.

Shona Sparks
Educator
United Kingdom

new technologies have a myriad of opportunities to offer that will help achieve appropriate learning processes and linkages between stakeholders, not only preparing students for the workplace, but also preparing them for success in life, excellence and well-being as well as prevailing knowledge and civilization.

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Supplement: A Call for Leveraging Technology?

Contributors: Jonathan Tavssberger and Mitch Weisburgh

Bringing a different perspective raises some of the broader possibilities and preoccupations of the education-technology-society triumvirate. Technology is one of the themes that run through this whole publication; every one of the eight themes mentions technology as a path toward education fulfilling its role in achieving societal goals.

There are clearly areas in education where technology is already being used, and could be used to an even great extent:

- Live web meetings for synchronous interactions so that people do not have to be in the same place at the same

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time in order to learn from each other

- Augmented Reality and Virtual Reality to provide immersive experiences and simulations of scenarios that are impractical in real life
- A variety of media to provide a continuum of learning across news sources, research, social media, blog posts, podcasts, documentaries, conferences, and virtual conferences
- Artificial intelligence to create completely personalized learning
- Simulations, games, and technology assistance to embed learning into whatever people are doing or like doing
- Blockchain to maintain a distributed ledger to represent each person's accomplishments, skills, and knowledge
- Mobile Technologies, and 5G specifically, to connect at high speeds to anything, any time, and practically anywhere.

For most sectors of the economy, there are clear advantages to the introduction of technology. For businesses, when you introduce technology your unit costs go down, often revenues go up, and the company can grow better.

The fact that there are no revenues, and that costs do not decrease in education, is clearly a factor behind the delay in the adoption of technology. Using K-12 as an example, kids will still be going through 13 years of school, they will still be in classrooms (at least absent a pandemic) of roughly the same size, and student-teacher ratios are rarely affected by the introduction of education technology. In higher education, institutions frequently charge the same fees for online classes as they do for face-to-face courses.

Of course, there is no ipso facto reason why technology cannot reduce costs. What if we introduced technology with the aim of making primary and secondary education last 10 years instead of 12? Or planned for technology use so that by 9th grade, students were primarily independent learners, and we could move to 100-1 student-teacher ratios?

Even looking at other potential benefits of technology in enhanced learning or more effective teaching, there are plenty of studies which show that it's the implementation of the technology that makes a difference in test scores, not the technology itself.

Technology has evolved significantly since many modern educational structures were established decades ago, and these systems, policies, and structures remain resistant to change. Should we be surprised? Why introduce technology at all?

A tremendous number of resources have gone into developing, testing and adopting new technologies to support education or gaining of knowledge,

What needs to be taught to be productive members of society in the 21st Century?

The biggest weapon of change is knowledge, and I truly believe in sharing as I believe in #EachOneTeachTen. Girls like me will spearhead the revolution in the field of STEM.

Namya Joshi, Middle School student, India

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but the rate of technology and societal change is happening too quickly to keep up within an education economic system that was already deficient. Knowledge seekers of all levels have learned about, and adopted, many forms of technology that provide shortcuts to actions that enabled scientific/cultural/communication outcomes that were impossible merely months before.
However, when technology is introduced into 'classroom' practice, a commonly used but erroneous assumption is that technology will enhance traditional forms of teaching. Unfortunately, it's not that simple.

One striking example is the use of distance learning on web-meeting platforms; it was not enough to just teach as though everyone was still in the same room. Teaching using web-meeting software is a fundamentally different experience from teaching face to face in a classroom. Over time, many teachers and students have learned ways to make these sessions effective by using features such as chat, polling, and breakout rooms. In some cases, the learning can be more effective than what would normally happen in the classroom, in some cases comparable, in some a good-enough alternative when required, and in some wholly inadequate. The use of these platforms has inexorably followed the most common framework for technology adoption, SAMR, even if the transition was not planned.

Used properly the SAMR model to grooves tech adoption,

- first you **substitute** tech to do the things that you are already doing,
- then you **augment** the things you do through technology,
- then you **modify** or redesign what you are doing through technology,
- and then you **redefine** what you do in ways that you probably would never have dreamed of.

One of the issues is that it takes years to make major change; perhaps one year per step. Another issue is that realized outcomes generally regress backwards before moving forwards, so that initially the results may be worse with greater efforts or extended energies. Usually, the true benefits are not reaped before the 3rd or 4th year, and even then, there still is seldom a cost saving. How do you justify the return to parents and taxpayers when ethe examination results drop in the first year? Where do you show your cost reductions and increases in efficiency? Not establishing reasonable expectations is a prescription neither a principal nor superintendent is willing to engage in.

The changing modes of student-teacher and student-student interaction, exemplified by the transformation required by schools' reactions to the pandemic, can unchain education from textbooks, from the 'four walls' or borders of the classroom, and to the school day. The ideal is to promote access and innovation and continual improvement. However, harnessing this power

requires agility and openness to the use of non-traditional resources and practices for education in the evolving context of digital and social interaction. Importantly, it requires patience and planning.

A huge downside to the changes since the beginning of the pandemic is that, on a practical basis, they have revealed the inequity of access; 15-30% of the school population does not have access to the resources needed for online learning; while another 15-30% have, at their fingertips, the use of technologies that are far superior to anything that schools can offer. This was a lot easier to ignore when we only looked at school attendance and results on standardized tests, but it was always there as the foundation or lack of foundation, to support learning.

This may be a prime reason to support a universal right to the technology tools, support, and professional development (hardware, software, and connections) that are necessary for remote learning activities, and which, when we really think of it, are necessary for much of the learning that should be taking place regardless of location.

What may prove most important in utilizing remote technology within the 'classroom' is the enabling of individual educators to determine their own path depending fully on their understanding of the environment within their own classroom.

Sounds reasonable, right?

Actually, while important, that's probably wrong.

What may prove most important in utilizing remote technology for learning is the enabling students to take charge and determine their own path and providing them with a full understanding of the environment and trade-offs. Too often we equate learning with what schools do, our objective should be to empower students.

The use of technology often means that students work from the direct supervision of teachers, requiring a level of competency and executive function. Most education systems do not transmit these skills, possibly half of freshman college students do not have the social-emotional skills to do college level work.

And yet, we know that if teachers and students have the skills and access to technology and have learned how to exercise their choice and voice responsibly, students of all ages would learn more, better, and faster, and we'd do it more efficiently.

Some possibilities might include:

- Protected Social Media Platforms (if it can ever exist) that allow students to share ideas and communicate in a safe

Describe a moment in your life when you experienced the joy of learning

Big lad next to me in secondary school (in Blarney, Co. cork, Ireland) used to give me a hard time and used to copy my Irish homework. I hatched a plot to write a piece in Irish which he would copy unwittingly and then hand in to the teacher, which had 'in Irish' statements like 'I am a fool'. Can't remember the outcome but it was fun, and it showed me the power a little bit of knowledge can give you.

Dr Micheál O'Connell
Educator,
United Kingdom

place. Through the proper platform, a byproduct could be the strengthening of digital socialization. In addition to supporting the course subject matter, the guided social interaction provides space to fail and fix prior to engaging in public platforms;

- Global online games like MINECRAFT to teach subjects. Classes already exist where students are taught engineering, and specifically circuitry using the immersive world's Redstones.
- Online video communication platforms like Zoom to connect with teachers and cohorts from different countries. Why not learn Japanese from a native speaker in Osaka from the comfort of your home in Genoa, Italy? What if the old-school Pen Pal could be made a real-time exchange with randomly paired cohorts in order to learn cultures and customs?
- Art sharing forums to securely enable protective collaboration, sharing and guidance. Some curated, less protected or clunky examples exist on sites/platforms like Artnet and PopJam.
- Partnering with people in-situ with shared Augmented Reality products to enhance global exploration and understanding. Even early forms like the ones Niantic has developed remove barriers on location and entice physical exploration of spaces. Learners are already used to partnering with others around the world within multi-player online-enhanced gaming, it's not such a stretch to believe there would be benefit in allowing citizens of multiple countries to team up to collect experiences covering government, architecture, mythology and more in such a way.
- Simple online shortcuts to drive deeper understanding of 'Hows' and 'Whys'... allowing students to Google answers but tie the results together to form a fuller picture; for instance, tying historical articles together (link by link) starting before the handover of Hong Kong from British to Chinese governance until now could provide much deeper understanding of how we came to the political struggles that are now in play.

The world needs leaders and influencers to convey examples and benefits, and to demand that we use technology in ways that lead to incredible growth in teaching/learning/retention.

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Theme Six: Success, Failure and Evaluation

Society has moved away from openness to failure, from children's games not keeping score, to major corporations sacking their R&D departments. Beyond coveting the perceived winners — whether legitimate or not — there is little room to grow when everything is focused on an endgame rather than the journey and tribulations. As learning forms diversify, the strategies for evaluating effectiveness will become that much more complex — requiring profound change in perspectives among many cultures and generations.

A bridge to the future. Moving from current assessment of success to valuing failure. Encouraging risk taking, removing or changing emphasis on what is wrong.

> **"Students do not need to be labeled or measured any more than they are. They don't need more Federal funds, grants, and gimmicks. What they need from us is common sense, dedication, and bright, energetic teachers who believe that all children are achievers and who take personally the failure of any one child."**
> **Marva Collins 1990**

Beyond Pass or Fail?

Lead: Tony Breslin

Editors: Mitch Weisburgh, Zoë Camper

We need a radical reappraisal of what we understand as 'success' in education: central to this should be the generation of a love of learning, and a capacity for learning, in childhood and the sustaining of this throughout adulthood. This objective should drive how we evaluate students as they pass through the school system, regardless of what form it takes, and how they engage with learning afterwards. This requires a radical rethink of how we define personal and institutional success and failure, and how different models of evaluation can support the needs of different learners as we move on from one- size-fits-all models of schooling and largely knowledge-based systems of assessment. It also means a fundamental re-evaluation of how we teach, of pedagogy, and of the relationship between teacher and student, and teaching and learning.

Schooling success and societal values

What we define as *success* and *failure* in education articulates a much broader view, consciously or unconsciously, about our societal values — about what matters and what doesn't, about how we evaluate and who evaluates. This success or failure is equally critical in articulating these values, consciously or otherwise.

Insofar as this evaluation involves forms of 'external' examination and 'independent' scrutiny, it generates the currency through which both learners and educational institutions are judged. Judgements that can have a defining

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role in the destiny of learners, their enduring attitude towards learning in later life, the learning professionals who work with them, and the sites of this learning. Evaluation models based solely or largely on independent and/or external assessment intrinsically talk to a time past an age of deference, and to didactic, instructional pedagogies, rather than iterative, collaborative ones in which students have greater agency, models in which learning is constructed rather than merely imparted from one to the other, from the teacher to the taught.

Standardised assessment and curriculum narrowing

In most of the educational systems with which we are concerned, educational success, for both the learner or the student and the institution, is in the first instance defined by the success of students in suites of largely externally set tests or examinations, delivered at fixed points during the course of statutory schooling.

This focus on outcomes in standardized tests and public examinations, risks narrowing educational achievement to test attainment, with individual scores defining student success, aggregated class scores defining teacher success, and aggregated school scores defining school and school leader success. More often than not, such scores are the starting point for those involved in school inspection. It is telling that, as recently as September 2019, the school's inspectorate in England, Ofsted, produced a new framework that overtly sought to dissuade teachers from "teaching to the test", with the Chief Inspector calling for a new focus on the "purpose of education".

In many educational systems, this narrowing is accentuated by two additional tendencies: the reliance on a single form of examination or type of assessment (such as the GCSE in England or state end-of-year tests in the United States) and the trend towards institutionalizing knowledge hierarchies through the greater value placed by the system (and often, therefore, by school leaders, teachers, students and parents) on some subjects at the expense of others. For instance, in England, the exclusion of the social sciences from the National Curriculum introduced in the 1980's and the exclusion of the creative and expressive arts from the English Baccalaureate performance measure introduced in 2010, have combined to narrow curricular breadth, strengthen a subject hierarchy that marginalizes significant areas of learning, and denies students access to a range of curricular experiences.

More recently, these trends have been accentuated by the identification of a group of 'facilitating' subjects by a self-appointed cluster of twenty-four 'elite' UK universities, the so-called Russell Group, which are granted a higher status in the processing of university applications. In as far as the curriculum acts as a statement of what a society considers sufficiently important to pass on to the next generation, this nomination of some subjects above others is pernicious. As an assessment-driven process of curriculum narrowing, it has a profound impact on what the education system is seen to value and what it is thought to ignore: academic over vocational, instrumental over creative and, most

What needs to be taught to be productive members of society in the 21st Century?

The skills like self-direction, creativity, problem solving, decision making, critical thinking, and innovation have become more relevant in an age where the ability to excel at non-routine, creative work is not only rewarded, but expected as a basic requirement.

Anumpam Sharma
Educator, India

tellingly, 'hard' skills over 'soft'. Although surely the latter pair of titles need to be reversed-the so-called 'soft skills' are surely the hardest to master.

A vital, although probably unintended, side-effect of this is the marginalization or removal of a set of professional perspectives, rooted in the traditions of these subject areas, from the body politic of the school as an institution. In short, those subjects that attract some of the most socially and politically creative individuals into teaching have been progressively removed from, or, at best, marginalized within, the curricular landscape; hitherto, these individuals had often been key players not only in the classroom but in the staffroom (Breslin, 2020). They had been the individuals who had served on local school governing boards or as teachers' union representatives. In short, the weakening of the educational diet offered to children and young people is paralleled by a weakening of the school's professional community and aspects of its governance infrastructure. Intriguingly, these subject outliers have traditionally been comparatively over represented at leadership level and in advisory and support services. Why? In all probability, because they bring an organization-wide view often denied to those who have spent a career in one or other of the mainstream subject ghettos.

From attainment-first to inclusion-first perspectives: time to turn the lens around?

It is in their impact on exclusion, though, that these curriculum-narrowing and attainment-first systems are most concerning They work well for those young people steeped in the very specific form of cultural capital that they promote, but not for those who struggle with the type of assessment offered or the types of subject and course assessed (again, largely traditional and academic, rather than professional or technical). In heavily marketized systems and in societies with significant levels of geographically concentrated socio-economic deprivation, there is a strong tendency for disadvantaged students to be concentrated in schools already deemed 'unsuccessful' because of the academic outcomes that these schools are *held* responsible for generating. The standardized assessment unfortunately has a tendency to extend the myth of a meritocracy played out on an allegedly 'level playing field'; actually, it guarantees the opposite.

Further, the more successful (as measured specifically and solely by examination outcomes) these education systems are with the sixty, seventy, eighty, ninety percent of those young people they support, the more excluded the remaining forty, thirty, twenty, ten per cent become. As a result, system-wide success tails off and plateaus as teachers find themselves working with increasingly more 'challenging' students and diminishing returns (to teacher effort) set in.

In anticipation of this phenomenon, schools must transition progressively from *attainment-first* to *inclusion-first* strategies, if they are to address the needs of those, who have yet, to secure success. Attainment-first strategies *can* provide an antidote to underperforming education *systems*, but as this system-wide underperformance reduces, such systems need to adopt avowedly inclusion

focused strategies; why? Because inclusion-first strategies work for *individual* students, those left behind in the undifferentiated dash for grades. While attainment-first approaches can help to ensure that many fulfil their potential, they perpetuate the exclusion of others, an exclusion that only inclusion-first approaches can hope to address.

None of this means that students should not or should never be assessed on the basis of standardized tests. Indeed, a common error of progressives, in allowing themselves to become aligned with such a view, is to conspire with those who wish to see them painted into a corner that is represented as anti-standards, anti-achievement and anti-school improvement. It *is* to argue that education systems should never become test-driven, and it is to caution against the tendency of high-stakes testing to produce a range of outcomes, unintended or otherwise, that pervert the purpose of education.

System outcomes in test-driven cultures

Evidence that a student can perform under examination conditions across a range of subjects is a legitimate form of evidence on which employers and next stage educators can reply on. However, the idea that such scores ought to be the sole form of evidence considered, or the sole arbiter or evaluator of, educational success or failure, has a disproportionate influence and a corrosive impact on the breadth and quality of educational experience offered to all at all levels, the nature of teaching and pedagogy, and the priorities of schools. And, moreover, in steering school and system leaders towards attainment-first thinking, it pre-ordains and consolidates the exclusion of a significant cohort of learners, disproportionately drawn from disadvantaged and marginalized communities and from sub-cohorts who struggle with the particular form of assessment offered and the nature of the curriculum that it has produced.
The impact of this attainment-first mindset is threefold:

1. It produces schooling systems that marginalize inclusion in favor of attainment, without acknowledging the intrinsic link between the two;
2. It creates schooling systems that are judged on far too narrow a scorecard, systems which are not appraised on the achievement of other key markers of educational success, such as childhood wellbeing, the breadth and richness of the educational experience offered, and the establishment of: firm foundations for a culture of lifelong, life-wide learning;
3. These schooling models are distinguished by an obsession with learning systems, rather than learning itself; an approach that marginalizes those who opt for education without schooling (the so-called home-schooling community) or who adopt a more blended approach, where home and school collaborate to produce more bespoke, personalised educational offers — offers that, by definition schools cannot be held

solely responsible for, or judged on. Post-pandemic, we can expect home-based and blended approaches to grow in influence. This alone ought to cause us to reconsider how we assess educational outcomes.

In summary, the reality is that, in pursuit of enhancing performance (a laudable aim), we have focused on the process of assessment and forgotten its purpose. We have confused validity with reliability and standardization with standards, beating a track to dependability and replicability in the process. Anything that might question these objectives — teacher assessment, extended assignments, coursework, modularization, just-in-time models of testing — has been portrayed and betrayed as 'dumbing down', as 'subjective', as somehow the enemy of the 'good'.

The pandemic driven grading crisis in UK schools in August 2020 is a case in point. After a decade of moving away from modularization, teacher assessment and coursework and back towards examination formats first applied in the 1950s, the UK's governments found it necessary to abandon written examination papers and shift to assessment models based on 'teacher generated' or 'centre assessed' grades. The resultant grades spike was blamed on subjectivity, but actually was the product of bringing a far bigger swathe of student work into the ambit of formal assessment. This wasn't 'dumbing down'; it was widening access to success. Critically, this did not *deny* success to those who might have done well had the conventional written papers been sat, but it may have extended success to some who would not have been. Rather than presenting this as an "attack on standards" or, worse, a "decline in the integrity of the exam system", as some conservative commentators have, should we not celebrate the success of a system that enables a wider group to enjoy success? Should we not seek a new plurality in our approach to assessment?

Describe a moment in your life when you experienced the joy of learning

I studied Jazz Music and Fine Art and learning how deeply the arts were connected to science blew my mind, especially in learning anatomy in drawing. This led to an interest in innervation and vital systems of the body and realizing how art could inform science and vice versa was an incredible motivator.

Emmanuel Arandiga
Video Producer,
Australia

Towards a new plurality in assessment practice

All of this is not to call for an end to assessment, or even an end to standardized test-*informed* assessment. It is to demand a greater *plurality of practice* in assessment within our schools. Public (or state) education systems are enormous public investments funded through a combination of taxes and debt. It is reasonable that they should offer some standardized measures of student success, for the students themselves, for parents, carers and families, as well as for prospective next stage educators and employers. It is not reasonable, as is now commonly the case in western education systems that these standardized measures should be the *sole* arbiter of educational success or failure, either for the learner, the school, school cluster or school district, or system-wide.

In England, Wales and Northern Ireland, the typical 16-year-old sits between eight and ten examinations, usually all based on one examination format, the GCSE (General Certificate of Secondary Education), with the grade based entirely on performance on standardized papers delivered in an examination hall at a specified time and on a specified date. The exams take place at 16

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because this is the age at which students traditionally made a choice as to whether to leave school and seek employment or training or to embark on studies that would prepare them for Higher Education a couple of years later. Most students across the UK have, however, not 'left' school at this point for over two decades, and yet the assessment system remains in place, narrower and more traditional than it was at the point that the statutory participation age in education was extended to 18. Most English students undertake no other forms of examination at this point. Thus, their GCSE grades, the product of a range of written papers crammed into a three- or four-week period, are the summary of their education to this point.

The problem here is, arguably, not the GCSE qualification; its omnipotence is. So, how about a set of principles that might steer us away from this and that might bring a new plurality to both assessment and the curriculum itself? After all, the achievement of ten or so GCSE's is not an indication of educational breadth, for these qualifications are variations on a standardized theme. Indeed, in the clamor to be accredited at the GCSE table, many subjects have, it might be contended, had to accept compromises to their essence to fit the assessment straitjacket on offer. What about a model where:

1. The formal external assessment of the curriculum by written examations is limited to two thirds of a student's curriculum time;
2. Every student should sit at least two different forms of written examination, so that no one format comes to dominate the curricular landscape;
3. Every student is offered the opportunity to participate in either workplace-based or community-based learning, typically for one day a week, during their final two years at secondary or high school;
4. Every student undertakes some form of independent study, identifying and investigating an activity of interest to them;
5. Every student is exposed to sport and to the expressive arts — art, design, dance, drama, music — such that this is an experiential staple of every primary and secondary school curriculum, whether it is assessed through formal examination or not;
6. Every student participates in a core programme that is focused around the development of citizen-engagement, life-skills and personal wellbeing and delivered across both the primary and secondary phases.

The result would be a level of standardization that would reassure both parents and system leaders, underpinned by external assessment, but a curriculum with much greater scope for personal and local construction by teachers, students and families working together with the outcome taking the form of personalised

What needs to be taught to be productive members of society in the 21st Century?

Critical informed history

Dr Micheál O'Connell
Educator
United Kingdom.

achievement portfolios that could showcase a much broader range of skills, abilities and forms of learning.

This might seem ground-breaking, and, if something like this were adopted system-wide, it would be, but there are multiple precedents for such innovation, not least amongst innovators in the student voice, home schooling and family learning communities.

Moreover, post-lockdown, and with the comparative mainstreaming that this has brought to blended and home learning strategies, the opportunity to create a much richer variety of local learning hubs than just the conventional school is beginning to reveal itself. It is an opportunity that must be embraced. In this, lie the seeds of much more substantial change, of educational practice that successfully marries a core entitlement for all with approaches that are bespoke to individual and community need.

At present, we seem locked (in large part through the limited range of assessment mechanisms that we tie ourselves to) into a system that works for many, without necessarily enabling them to flourish. However, it does so at the cost of the persistent intergenerational exclusion of a significant minority, patterned by the intersectionalities of class, neighborhood, gender, ethnicity, disability, learning need and multiple other markers of identity. For these learners in particular, we cannot simply continue to offer the same repeated prescription despite its continued and designed-in failure. Education, or rather *schooling*, seems to be one of those medicines, that the less its success, the more the patient is obliged to take: surely, it's time to change the prescription.

And, in any case, the landscapes into which our schooling systems feed are evolving like never before. As Matthew Taylor remarks in the introduction to my *'Power to Change'* paper, '*A Place for Learning: Putting learning at the heart of citizenship, civic identity and community life'*, (RSA, 2016), children beginning in Kindergarten or Reception classes this coming September will find their careers in industries that do not yet exist, producing goods and services that have yet to be invented, meeting needs that we do not yet know we have. Moreover, work will play a less prominent but as yet undefined role in the lives of these future adults. Education for employability at some level will remain important, as will education for leisure, for civic engagement and for friendship in a very different social and connected world.

Seeking to support the future needs of these children through a curriculum, assessment and schooling structure modelled on nineteenth century Fordist 'scientific' management and designed from the system down is doomed to failure. In designing an education system for an unknown future, we must begin with the learner. Equity and the need to avoid parochialism is likely to mean that we will still need some kind of schooling or learning system, however the *system* must be one built for and with the individuals and communities who are the purpose of its construction.

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Supplement: The Fleeting Embrace of Failure

Contributors: Cyrill Wiget, Jonathan Tavssberger

"There is only one thing that makes a dream impossible to achieve: the fear of failure. "
Paulo Coehlo

"Failure is part of the process of success. People who avoid failure also avoid success."
Robert T. Kiyosaki

"When we give ourselves permission to fail, we at the same time, give ourselves permission to excel."
Eloise Ristad

Without allowing for and addressing failure, our society is preparing for a future of anything but success. In the race for rapid assessment, matriculation and decision-making, we have set the system up to reward shortcuts to achieve a positive end-results in education. Unfortunately, this avoidance of the relationship with failure will create a debilitating follow-on effect for future business, innovation and society. The challenge then becomes how to foster failure for attainment of knowledge.

For most forms of education, knowledge and mastery are often simplified merely to achieving success in graded assignments, exams and assessments. Although the initial objective of acquiring know-how is to master a specific subject, most learners focus solely on the final performance evaluation from the onset. The result of a graded assignment subjugates the benefits of the learning process to the ticking from requirements to achieve the ultimate assessment. An outcome of removing the transformative trial-and-error process in limiting assessment to exams can have enormous implications for our on-going learning, progress through schooling and careers and, in the worst case, hinders us from pursuing our dreams.

Acquiring new knowledge will enable us to consistently thrive in the future requires patience, effort and time. Failing a decisive exam because we have a bad day, exam anxiety, or being challenged by a style of exam that doesn't adequately fit our needs takes barely three hours. Does it make economic sense to invest weeks if not months to acquire new knowledge, if we can undo its value in only three hours? Counter that with the experiences we gain in business... does it economically make sense to address the failure with disdain and brush it under the carpet in the hopes of moving brusquely into the future of amazing growth without pausing to understand what happened leading up to that result? We've seen far too many times that, in either case, the outcomes are anything but fruitful. Imagine if our systems were reprogrammed to capitalize on failure as a phenomenal teaching and learning tool.

Describe a moment in your life when you experienced the joy of learning

I have never experienced deeper learning in my own schooling but as I started teaching, I got an urge to see deeper learning in action in order to understand how I might be able to implement it in my classroom. This triggered my desire to go beyond my lessons to create lasting experience for my learners.

Anumpam Sharma
Educator, India

RSA | Fellow

Often, we hear, 'you learn for life, not for exams', but it has become wishful thinking. Have you heard any college advisor say that it doesn't matter if you score below 28 at the ACT test, even though you studied 200 hours and are a computer programming geek? In the field of venture capital and technological development, environments instill the latter element of trial and error to obtain the best outcomes. Even with that basis, we are already seeing an unfortunate shift in venture capital as the funding is harder to come by because investors believe they can limit their exposure by investing in the sure things, when the 'sure thing' model is a fallacy and antithetical to the environments celebrated in start-up communities that allowed for true innovation. In an environment built upon the spirit of failure as much as success, removing the supportive platform for entrepreneurial failure bodes poorly for the future economy, much less a harbinger of what is lost in our capability to learn. Fortunately, there's still time for both the venture community and educational systems to return to that spirit of failure as a means to success in order to create a positive and sustainable model for society.

Tapping into human passions provides insight into the benefits of failure that institutions usually disregard. What we are passionate about, we can master, regardless of our need to invest a lot of effort. Even if we often fail during the learning process, we do not give up because we follow our interests and are focused on mastering these specific subjects. The same traits can be observed in successful artists, entrepreneurs, employees, musicians, and athletes. Learning, working, practicing, or exercising constantly leads us to mastery. Our assessments are milestones; games won (or lost), successful exhibitions, missed targets, promotions, recognition from our employers. We deliver and are assessed constantly, not at a specific time and place. Moreover, failures are regarded as direct and immediate feedback on our performance.

Babies learn to walk by falling thousands of times. Ice hockey player's shots miss the goal many times, but after every shot, they adapt their technique! Virtually no one successful in any field has never failed. Failure is not bad, it is a necessary factor for success and therefore, it is an optimal feature. Education systems have normalized the culling of the classrooms by speeding past failure, bolstering those who immediately succeed and makes no space for those who might just be on a different timeline. Since traditional education often follows the conceit of ending a subject or unit with a test and then moving on to the next one, there is no opportunity to address failure. Put another way, why can we fail drivers tests or bar exams multiple times, but O-Levels, AP exams and other tests that will have an impact on the future can only be taken once? This dissipation of potential could be considered as devastating for humanity.

By aligning more closely with the traditional venture capital environment of 'good' failure, mainstream education could (or should) adopt this important step to significantly improve the next attempt. Failures help to improve things incrementally to perfection. Moreover, a culture that permits mistakes and failure also creates more risk-takers. As a result, it leads to discovery, innovation

and hopefully leads humankind to its next level.

The shift to embracing failure at primary and secondary levels would have a profound effect on all of commerce—no longer could a couple of exams per year solely decide future careers and outcomes. With the opportunity to fail and learn, students will be inspired to try new things, take risks and develop their ability to innovate. An augmented society is not built by memorizing the knowledge to presented in an exam. An augmented society succeeds only by embracing the gaining of knowledge and not being afraid to use failure in order to evolve, innovate and prosper.

Supplement: Quantifying Capability Beyond The 'Norms'

Contributors: Jonathan Tavssberger and Mitch Weisburgh

Many educational purposes revolve around traditional learning and teaching, but another byproduct of education is to certify that learning took place, or that a person or cohort acquired and can use the knowledge, skills, or attitudes that were purportedly covered. Certification becomes a monumental challenge in the face of increasingly diverse learning styles and institutions.

In this short essay, we explore some of the issues related to this accreditation function, raising some of the key questions, rather than providing quick answers. When some individual, organization, or system needs a person to do something, how does it know that the person has the capability? How do we know a student is ready to advance to the next grade? How do we know a student can perform the work that a college/university requires? How do we know that a person should be hired? By what means do we accredit that knowledge or those skills to that individual?

As long as higher education and businesses have existed, relative terms and rules have been established as standards in evaluating candidates for entry into their hallowed halls. These standards reflected the widely accepted 'norms' of each country and its industries, whether based on GPAs, testing, certification or professional experience. But what happens when those norms explode and abandoned? Where do we turn when the measures are no longer even considered relevant? How will the barometer of society evolve through this change to ensure that the best candidates are placed in their most befitting positions?

Regardless of the Pandemic, we had already begun to see a style of movement away from standardized testing, where entire systems like the University of California schools have downgraded the prominence of SATs in the determination of entry worthiness. And, the drive by parents to have their children bulk up extra-curricular activities to pad their college applications have led to overwhelming experiences in name only, with completely exhausted

What needs to be taught to be productive members of society in the 21st Century?

If schools could recognize actual strengths, skill sets and passions, and help learners to recognize them within themselves, perhaps they'd see the kinds of things they could excel at. This might help to offer some direction, instill confidence and stoke a fire for more of anything.

Mike Chung
United Kingdom

students and parents.

The standards we use are often plastic, as we see when we look at how resumes are used today. When businesses evaluated candidates ten years or so ago, a resume filled with positions that were held for fewer than three years, gaps between working positions, or lateral changes were considered undesirable. Since the late '90s dot com burst and the financial breakdown in 2008, those previously considered 'blemishes' have been accepted, rewarded, or even cynically spun as personal growth opportunities.

How do we know what is 'good' and what is not 'good' on a resume?

Many businesses use automated systems to evaluate resumes. 'Intelligent' systems that 'evaluate' thousands of resumes, do they really narrow down to the best candidates for the job. Or do they just offer an automated way to filter resumes down to a manageable number, removing many candidates who could perform competently and letting through other candidates who are better able to meet the filtering criteria than to actually perform the job? The real answer is that the jobs tend to go to someone who somebody in the process knew about anyway.

When accreditation methods are based on standardized educational assumptions; we assume that a third grader has the grade-appropriate knowledge and skills by virtue of being in third grade. A senior in HS has assumed a certain level of competence.

Moving into the Pandemic and beyond, from the abandonment of traditional modes of education is accelerating. Beyond the traditional school, there is the Homeschooling community, more families embrace Non-schooling, online learning and more recently, World-schooling and Learning Pods. We may actually witness tremendous growth in World-schooling because professional parents are no longer tied to an office or city to do their work. All they and their children need are devices and online connectivity from anywhere in the world. Institutions and corporations will be forced to adapt and widen their understanding of these alternative learning experiences for more reasons than simply maintaining the matriculation and numbers of workers. We will all need to recalibrate our understanding of needs, requirements and what these experiences really provide to the person.

If we only evaluate candidates/associates/partners based on the understanding of traditional experiences, we will flail in the opportunity to engage a rich diversity in resources that can enhance diverse cohorts and workforces. Without this adaptation, meaningful growth will be stifled across the board.

In many cases, what we've done in the past is give a test, or trust some authority.

RSA | Fellow

- End of year tests for K-12 in many countries, college or university entrance exams, and accepting the authority of a high school or university to grant a diploma or certificate.
- We actually have no idea if a 3.5 cum accounting student from a state school is better or worse than a 3.0 student from an "elite" university.
- We can tell that a student who has passed a technology certification can recall technical information, but can that person solve real world technology problems, or can they construct systems that meet the needs of targeted users?
- Traditional college entrance examinations are highly correlated with first year grades, but less correlated to successful university graduation or life success.

Is technology helping? How can technology really make an impact?

Some of these problems may be resolved by simulations. Video games seem to solve many of these 'do they have the skills' problems. Participants cannot advance to the next level until they have learned how to solve the challenges at their current level. In Finland, some vocational schools and universities are building video-game like simulations into their assessments for graduation; for example, candidates cannot graduate in IT management unless they've successfully navigated a major systems outage using a simulation of a data center, or designers cannot graduate in interior design until they've designed a multi-room space in Augmented Reality to a customer specification and budget. Technology solutions using video-games, virtual reality, and augmented reality are worth watching.

Badging is another credentialing technology to watch. When electronic badges can be obtained by demonstrating competencies, they can be a way to showcase skills. Again, it's not just the badging technology, one needs a trusted source to issue the badge, an easy way to make the badge visible to audiences like potential employers, and some market that values the badge so that it is worth earning. All of these elements have to be brought together in a coherent manner to create a badging economy.

As in many other areas of education, the pandemic has highlighted many of the accreditation gaps that could already be addressed. The ways we have done that in the past were never good, and the gaps between what we want to know about a person and the way we assess or accredit that person have become even greater due to changes in technology and the pressures of the pandemic. Only by spending the time now to reconfigure, reconstruct and recalibrate the evaluation paradigm amidst an evolving world can we begin to change the mindset and bring about opportunities that embrace the variances within society.

Education is well served by professional full-time educators, but there are educational resources that are being underutilized because the tools are not in place to authenticate the educational credentials or provide teaching platforms for those who don't follow the traditional track.

RSA | Fellow

Theme Seven: Empowering The Educators

Redefining the role of students by training them as educators: what students really need and what educators should be supplying. Utilise the confluence of profession, pedagogy and experience to deliver real value. Re-imagine the classroom: teachers are trainers of educators.

> **"The only true wisdom is in knowing you know nothing. There is only one good, knowledge, and one evil, ignorance."**
> **Socrates 470 BCE — 399 BCE**

Everyone is an Educator

Lead: Benjamin Strawbridge

Editors: Jenna Fuentes, Jonathan Tavssberger

Introduction

We suggest that everyone is an educator, and subsequently argue that everyone should be trained as educators through compulsory schooling and beyond. Such training could have numerous benefits including promoting better educational outcomes for children; improving the skill, efficiency and adaptability of our workforce; increased societal engagement; a culture shift towards learning and development; and more ethical decision making within society. In the context of the ongoing COVID-19 pandemic, where there have been significant demands placed on everyone, including a shift from classroom-based education to virtual education and home-schooling, such additional training before the pandemic could have been advantageous for parents and children. To consider what sort of training may be needed to educate educators, we draw on some research concerning the training and education received by professional classroom teachers in the UK. We also discuss the potential barriers to receiving and developing competence in all aspects of this training and suggest that, while limitations in the potential for training may still exist for a large proportion of people, including professional educators, this does not invalidate or reduce the benefits of the other aspects of training that they could or already receive. Finally, we look outwards, beyond educator training, and briefly ask what else can be done best to enable educators in their roles.

Who are educators?

Everyone is an educator. According to Lev Vygotsky, much learning happens socially, through interactions and dialogue with others (Vygostky, 1978). These interactions may be between children, between adults, or between adults and children. The content that is being taught and learned may include anything, such as: social or behavioral information, playing games, practical skills, or what

might be thought of as more formal educational content. Before a child begins formal education, everything they will have learned will have been through non-formal educational experiences, where family and other children may play a significant role. During formal education, children may support each other academically and develop socially, as they teach and learn from each other. Older children and adults, who have left formal education, are likely to educate themselves and others in the workplace, in addition to any children, friends or family members they have, irrespective of whether they receive formal training to teach. Insomuch as individuals in a society are lifelong learners, they are also lifelong educators.

While everyone is a lifelong educator, there are some educators who have received special training or education in educating, and may require certification, periodic accreditation, or membership of a professional organization associated with the educational aspect of their role. We describe these educators as 'professional' educators, and the population of these professional educators is diverse. Within this population there is one type of educator who has been researched extensively: the classroom teacher. We believe that much of what we have learned about training and developing classroom teachers may be beneficial to all educators, both professional and lifelong educators. In order to optimize the potential that exists in society, we should develop individuals as lifelong educators, and this development should begin as early as possible. We suggest that training individuals to be better educators will also enable them to become better learners and will improve the sharing of knowledge between individuals in all aspects of society. Significant potential benefits to all may include: improving the educational outcomes of children through improved parental educational interventions for pre-school-age children (de Coulon et al., 2011) and improved parental support through school-ages (Larocque et al., 2011). These, in turn, may lead to better educational outcomes for those students. Furthermore, this training in education may equip our future workforce to be efficient, productive and adaptable: better able to respond to the unknown challenges of the future. Additionally, the improvement in educator skills may result in better societal cohesion, through improved engagement in societal discourse. While this approach to education may not be a panacea, it may help to empower society and contribute towards the RSA's goal of 21st century enlightenment.

Best to explore what sort of training may be beneficial to all educators, we can consider the effect of training on a type of professional educator that has been researched extensively: the UK classroom teacher. What training may they receive? How might thattraining support their decision making? How might this training be beneficial to professional and lifelong educators? What external factors might be most influential to enable them to be the best educator they can be?

What special training may classroom educators receive?

As part of the BERA-RSA inquiry into teacher education in the UK, Winch et

al. (2015) identified three aspects of knowledge as being central to teachers' decision making in the classroom: situated understanding (knowledge obtained from working or being in an education setting), technical knowledge, and critical reflection. Classroom teachers in the UK may receive initial teacher training in these aspects, in addition to continuing professional development (CPD) which may take the form of training undertaken or education received by a teacher in-service, relevant to their practice (Cordingley, 2015). Below, I give some examples of more specific areas where professional teachers may receive training, though this list is not exhaustive.

- Situated understanding: knowledge obtained from working or being in an education setting
  - One's own experiences of teaching
  - One's experience of observing others teaching
  - Supervision/feedback from others
  - Opportunities to learn from the experiences of others
- Technical knowledge: knowledge of pedagogy and subject content, obtained from sources other than working in an education setting
  - Knowledge of a subject/domain
  - Knowledge of pedagogy (methods and practices associated with education)
    - Philosophy that underpins pedagogy
    - Conceptions of knowledge
    - Conceptions of learning and different learning approaches
    - Conceptions of teaching and different teaching approaches
  - Psychology associated with teaching and learning e.g., that related to emotional support and wellbeing
  - Knowledge of uses and potential uses of technology in education
- Critical reflection:
  - Reflecting in the moment
    - Models of self-reflection
    - The importance of reflecting with others/collaborative support
    - Ethics
  - Engaging with research & conducting and engaging with systematic enquiry
    - Academic knowledge (of the language, content, and culture of academia and its research)

Describe a moment in your life when you experienced the joy of learning

Practicing yoga and learning meditation had been transforming to me, and with a feeling of great gratitude and a sense of service, I decided to do a yoga teacher training. My primary intention was to deepen my own practice, though I did teach for a while, and hope to do so again over the next few years.

Molly Tschang
Executive Coach and Radio Show Host,
USA

RSA | Fellow

How does teacher training support decision-making?

Teaching is a complex process which requires educators to make decisions about how they will intervene to enable the learning of others (BERA-RSA, 2014; Burn & Mutton, 2015; Chew & Cerbin, 2020; Winch et al., 2015). Winch et al. (2015) described these three main aspects of teacher knowledge as being interconnected and overlapping. They posited that all three must be developed for teachers to be creative, critical, and, perhaps most importantly, autonomous professionals who are empowered to make decisions in their classrooms. Winch et al. suggested that if any of the three aspects is lacking, then a teacher may not be as effective as they could be. Consider at the extremes, where a teacher is completely lacking in individual areas: without situated understanding developed through experience of the complexities of an education setting, a teacher may struggle to respond desirably to the complex and dynamic situation; without technical knowledge, a teacher may only develop their craft through a trial-and-error basis or from the advice of others who have learned in a similar trial-and-error manner (which is unlikely to be optimal, and will stifle the ability to develop creative solutions, or reflect effectively); and without critical reflection, a teacher has no means to improve or inform their decision making, justify their actions, evaluate advice/directives, and with additional academic knowledge they cannot evaluate research and participate in discourse related to policy.

We suggest that these three aspects apply to all educators, professional or lifelong, and all settings where education may occur. Henceforth, we will refer to these as aspects of educator knowledge. However, it should be noted that critical practice which involves academic knowledge may be harder and less practicable to develop than other aspects (Winch et al., 2015). Consequently, this may act as a barrier which limits the extent to which lifelong educators and many professional educators can feel empowered, because they are not fully able to engage with academic discourse relevant to policy and practice, or participate in academically recognized, systematic research. Indeed, Winch et al. (2015) suggest that it is difficult for UK teachers (many of whom are postgraduates) to excel with respect to both teaching and being academics earlier in their career and recognize that it will take time for teachers to excel in both fields. Therefore, while a lack of academic knowledge may not be optimal, the possibility of it not being obtainable for most people who cannot or do not wish to devote the time and money to developing this knowledge area, should not be viewed as a reason to abandon developing 'non-academic aspects' critical knowledge or other educator knowledge.

While it is beyond the scope of this essay to review this information in detail, we highlight below two of the most important benefits of training educators, beyond simply improving their ability to make better decisions: reducing the susceptibility of decision-making being affected by the Dunning-Kruger effect, partly through enabling improvements in planning by highlighting the

Describe a moment in your life when you experienced the joy of learning

When I realized the importance of self-knowledge in my quest to become a better person. I used to believe that I did not need therapy and today I understand how important it has been to look into oneself.

Marcelo Mejlachowicz
Educator, Brazil

possibility of and reducing the number of unknown unknowns; and, training educators to make decisions informed by ethical practices. These two aspects of meta-thinking (thinking about how we think) combined with other aspects of training (which may include metacognitive practices: practices which support decision making relating to which tools, skills or approaches may be appropriate for making a decision) may particularly help individuals in life beyond their role as an educator and may help society achieve 21st century enlightenment.

Reducing susceptibility to the Dunning-Kruger effect

The Dunning-Kruger effect affects anyone whose competence with respect to a particular skill is sufficiently low that they are not aware of their own incompetence (Dunning, 2011). This state of being may result in erroneously high self-assessment of their own competence compared to what it measurably appears to be (Kruger & Dunning, 1999). Kruger and Dunning (1999) found that this phenomenon may be addressed by improving a person's competence in the skill that they are over-rating, resulting in an increase in accuracy of their self-evaluation. Alexander Pope may have described this phenomenon in his Essay on Criticism (1711):

> **A *little Learning* is a dang'rous Thing;**
> **Drink deep, or taſte not the *Pierian* Spring:**
> **There *ſhallow Draughts* intoxicate the Brain,**
> **And drinking *largely* ſobers us again.**
> **(p. 14)**

While both professional and lifelong educators are at risk of experiencing the Dunning-Kruger effect, lifelong educators may be most at risk. This is because: unlike professional educators, lifelong educators may not have as much knowledge, so they may be more susceptible to encountering 'unknown unknowns' (things they do not know they are not aware of, which may significantly affect the outcomes of actions based on decisions they make) (Dunning, 2011); they may not have independent input from others to highlight incompetence when they cannot observe it themselves; and they may have additional overconfidence caused by assuming that their experience of being in education or educating others equates to expertise or competence. At the same time, it is possible that professional educators may experience overconfidence driven by an illusion of competence caused by awareness of additional education or training, but this may be highlighted through supervision, periodic professional assessment, or feedback from students.

The importance of militating against the Dunning-Kruger effect, or at least enabling individuals to realize when they may be at risk of experiencing it, is of particular importance when there may be negative consequences associated with actions taken. While education may seem a world away from the life-or-death decisions that clinical professionals or emergency service workers make, the decisions made by educators can have significant, lifelong, or fatal

consequences.

Ethical considerations

The opportunity for educators directly or indirectly to cause harm or deleterious outcomes for others raises an ethical justification for enabling all educators to make the best decisions they can. We suggest that part of this should include education regarding ethics: "…acting with honesty and integrity, acting within the law and 'doing the right thing.'"(Stutchbury, 2013, p. 90). Many professions have codes of practice, or oaths that must be sworn before practicing (Banks, 2010). Codes of practice can provide an ethical framework which practitioners can use to make decisions. However, lengthy codes of practice with many rules may be impractical to memorise, and it may not be possible to refer to a code of practice every time a decision needs to be made. Accordingly, often, in addition to codes of practice, ethical principles combined with systems for approaching ethical questions may be taught so that practitioners may do the best they can in any situation. However, it is important to point out that whether an ethical code, when used in practice, enables the best outcome is another matter (Banks, 2010). In the absence of taught ethical principles, individuals may have ethical approaches they have previously encountered and used, potentially without realising (Wilson, 2013).

Whilst it is beyond the remit of this essay to explore ethical systems which educators could or should use, we highlight a feature that is common to many of the systems we have encountered: the importance of making a well-informed decision. To make a well-informed decision in any situation, one may need the following:

- An awareness of the law and the remit one has to intervene.
- An awareness of the potential consequences of an intervention or lack of intervention.
- A method/system which can be applied to the aforementioned information to decide a course of action.

If individuals are able to make well-informed decisions through appropriate training and education, then this will support them not only in educating others, learning themselves, and making education-related decisions that affect others (whether as teachers, policymakers or those who employ or vote for policymakers), but it may also result in a more ethical society. Perhaps, by combining embedded ethical practice with a culture of education and learning, we can best prepare all members of our societies for the uncertainty and challenges we face in the future.

What can society or systems within society do to enable educators?

Educators, while occupying a particular niche and existing in a specific habitat within the broad educational ecosystem they occupy, rarely act in isolation.

What needs to be taught to be productive members of society in the 21st Century?

Independent thought and the value of a work ethic.

Sherrie Wisdom
Educator, USA

Therefore, any examination of how to enable educators should also consider the broader, complex ecosystem that affects them. Relationships between factors are often bidirectional (some less-so than others), therefore exploring this comprehensively and exhaustively, even for a small number of general factors that affect most, if not all educators, is not possible within the confines of this essay. Consequently, we raise some questions that may support considerations relating to the ongoing support and facilitation of educators. How these questions may be answered, specifically, how training may be best developed, deployed and evaluated, is beyond the scope of this essay.

Lifelong educators (which includes those who are also professional educators)

- Does the culture support the development and ongoing training of lifelong educators?
- Is there access to high quality training and resources for self-education throughout life?
- Is there access to high quality, differentiated, educational materials that can be used to educate others?
- Does the culture support the wellbeing of educators?

Professional educators

- Does the culture support specific development and ongoing training for professional educators?
- Is there access to high quality training and resources for professional self-education?
- Is specific academic training/academic education available, valued, or practicable within a role?
- Is there access to high quality, differentiated, educational materials that can be used to educate others?
- Do all stakeholders work collaboratively and supportively towards a common goal? If not, how could this be achieved?
- To what extent do professional educators have autonomy within their educational space? How does this affect them and the service they deliver?
- What training and experience have those in positions of power or authority received? Are they expert in both practical and academic fields, in addition to having the prerequisite skills needed for more senior roles?
- What opportunities are there for individuals to disseminate information and collaborate with those outside their immediate ecosystem? Are these effective?

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Conclusions

We propose that there is a case for providing everyone in society with adequate training, for their current or future roles in society, as lifelong educators. We suggest this area warrants further study, particularly with respect to designing such education for children. For societies where there are compulsory education systems, providing such training may not be logistically demanding, and we suggest it is likely to complement existing curricula. However, best to empower educators, we acknowledge that significant academic training may be required: training that may be prohibitively costly and time-demanding for many individuals. However, such training may be incredibly useful, particularly for professional educators and those who are in positions of power or deciding policy. Beyond initial training (however long that may last for), there are a range of factors which may affect the extent to which all educators feel enabled. These factors may be considered by all stakeholders as they work together towards common goals. Although we do not propose such an intervention would be a panacea, we suggest that it would contribute towards the RSA's shared goal of helping societies to achieve 21st century enlightenment.

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What needs to be taught to be productive members of society in the 21st Century?

Teaching students how to learn rather than what to learn.

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Supplement: Technologies, Tools and The Modern-Day Educator

Contributor: Jenna Fuentes

Technologies have enabled educators to creatively teach in the era of 'the new normal'. A simple search can highlight a plethora of products and systems; such as, 3D printers, open source, artificial intelligence, cloud services, virtual reality, augmented reality, automation, learning management systems, data analytics (to disseminate robust reporting tools, dashboards that measure metrics, student sentiment feedback, Social Emotional Learning, etc.), webinar trainings, apps, platforms, biometrics, robotics, crowdsourcing content, etc., are significantly transforming both the 'Future of Work' and the 'Future of Education'. Pack in a cornucopia of online-enhanced learning types (mastery, hybrid, simulation, project-based, competency building, microlearning, game-based, virtual, peer review, self-directed, mobile, immersive and adaptive) and online or digital learning, now offers more customized and engaging multimedia content in a highly collaborative environment, where the student plays an active role. But, offering so many options do not make education any simpler without mindful

consideration of meaning and educators' resources.

As we enter the 'fourth industrial revolution', the common term, Educator, has evolved and now encompasses an even wider range of roles. Once only known as the teachers working within educational institutions, 'modern day' educators are: consultants and managers who are leading and educating their corporations from example; trainers and facilitators who deliver 'people development', professional development training and workshops from the learning/development arms of human resource departments; client success representatives at startups (for example, companies that offer "SaaS", Software as a Service, now, are training teachers and educators on how to use the educational software); thought leaders and information curators who program and deliver inspiration at conferences and workshops, or even TED Talks; and parents who are home-schooling or, teaching while working remotely at home. Educators are increasingly challenged to adapt and quickly acclimate to new technologies in order to connect with their students.

How might we best provide those technologies to our educators and best train them to effectively make it all work?

In the past, the employer, whether it be an educational institution or a corporation, would typically provide the professional development training, personnel support, and access to technological resources. The pandemic has further revealed how widespread the responsibility has become in revamping infrastructure, systems workflows, transparency, communication, accountability, personalization, and diversity of trainings, mentorship support, enhanced pedagogical approaches, and resources to make it all work for educators and their students. Furthermore, the scale and scope of resources that have come to the surface leave most educators unaware of the numerous government bodies, corporations, associations, and nonprofits that are offering the various technological solutions, resources, content, and training programs. Lastly, educators are educating themselves independently via online content, articles, books, industry association events, virtual conferences, academic research publications, and readily available toolkits and roadmaps created by industry practitioners (trainers, consultants, influencers, education industry thought leaders, and coaches).

In the end, there are too many options, too many similarities and intricacies to make clear judgement calls, too many unresolved outcomes and... far too little time to do any of this while trying to keep up.

Upon reflecting on the existing paradigms, training, and resources available, the questions we need to be asking ourselves when evaluating the technological forms of empowerment for our educators include the following:

- How often are educator trainings being revamped and who revamps the trainings?
- What criteria is being used when we are determining the

tools, resources, and training for educators?

- Who conveys the benefits and use-cases of assimilating products/systems to the educators?
- What level of buy-in is required by the educators?
- Who is responsible for training the educators?
- How do we evaluate the credibility of the "trainer" and who trains them?
- What weight do industry practitioners' and thought leaders' insights have vs. the advice and insights from academic researchers? How might we bridge the gap between industry and academia?
- How are we measuring educators' progress with the new technologies and their growth over time?
- If we are striving to enhance the education for our students, how might we do the same in relation to the provided tools for our educators?
- How are we capturing data and how is it being shared ethically? Where is this data hosted and who owns it?

These are just a few of the questions under consideration. Further interdisciplinary and cross-sector research is required to explore the current edtech trends and this intersection between industry corporations, startups, nonprofits, government, and educational institutions would help challenge our assumptions and biases. Such insights could help us to realize both opportunities and pitfalls in the deployment of technologies and systems within the educational environment,with as little ongoing drain on morale and functionality. Such shared insights could also expand our confidence in, and knowledge of, specific and appropriate actions, and best practices for further enhancing resources and professional development training for modern-day educators.

The social fabric element is about community and well-being for all. Creating community responsibility for lifelong learning. Understanding that being different is how the world works.

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Theme Eight: Lifelong Learning and The Social Fabric

There was a time where civilizations were judged by the size of their libraries and they represented something much deeper than economic riches Education can be a key element of society — not just communities, countries or regions. All members of families, communities and larger civilization play roles, but tools of interconnectivity do much more than break the isolation. We can use and create platforms and tools that forge cross-connections with those around the world — but it begins at home.

> **"What then is the purpose of national education? Rather than devise complex theoretical interpretations, it is better to start by looking to the lovely child who sits on your knee and ask yourself: What can I do to assure this child will be able to lead the happiest life possible? "**
> **Tsunesaburo Makiguchi 1817 — 1944**

> **"Only a small proportion of the human population gets to the point of identity, or of selfhood, full humanness, self-actualization, etc., even a society like ours which is relatively one of the most fortunate on the face of the earth. This is our great paradox. We have the impulse toward full development of humanness. Then why is it that it doesn't happen more often? What blocks it?"**
> **Abraham Maslow 1908 — 1971**

Bring The Best From Us All

Lead: Carlos Largacha-Martinez

Editors: Jonathan Tavssberger, Zoë Camper

The word 'Educate' comes from Latin, "*educare*", which is close to 'bring the best from'. How can we achieve this in the coming decade within an imagery of an interconnected global society? That is the goal of education. It has always been.

Yet we seen to have drifted. The practice of education is not well aligned with this goal. When did we choose the path of 'educate the child, so you don't have to punish the adult'? And punishment in a broader sense, since as a society we should feel guilty about the current social illness (societal self-punishment) that shows lack of *educare*: solitude, social biases, bullying, disconnected marriages and homes, polarization, to name just a few. Instead, it should be read '*educate the child, so she can flourish as an adult*'. Hence, what kind of education in the broader social sense do we need for all to flourish?

How will change happen; what about slowing things down and considering how the 7th generation of our future ancestors will benefit from our thinking now.

Where do we lose track of being a flourished society? There have been many writers, historians, sociologists who have contemplated this big question. In the end, the question that follows is 'how do we educate ourselves so we can be the best version of ourselves'? Self-actualization (Maslow), Flow (Csikszentmihalyi), resilience and optimism. The historic reality portrays something other. Marx called it *alienation*, Veblen argued about *trained incapacity*, Marcuse railed against the *one-dimensional* man, and Maslow, among many others, discredited the *D[1] -being* (D from 'deficiency'). All of them are pointing out the sociological structures historically created that generate a space where the emerging human output is not what we dreamed of or desire. *Educare* without taking into account these forces, these structural realities, is not what we are proposing here. We cannot solve all of them in order to have flourishing *educare*, but at least we are aware of their existence.

In short, traditional education is not solving the challenge of "*accidie*", that for Maslow is "failing to do with one's life all that one knows one could do" (1968:5). The tragedy was clearly stated by Bronie Ware who found,after more than 10 years of helping dying people leave the physical world,that the biggest regret was "*I wish I'd had the courage to live a life true to myself*". Society needs to reflect on which structures have created and emerged that stop people from being courageous. We end up being very productive, but at the same time highly predictable, allowing social pressure to dictate what we should be and do. Bronie's phrase of the first regret has an ending, a sad one, "*I wish I'd had the courage to live a life true to myself, not the life others expected of me*". Why do some people do this, and others not? Shamefully for society, the vast majority don't. Why do the majority do what others expect? What kind of education are we providing in the family, the schools, and the workplace? It is an un-authentic one.

Society's education systems create 'normal' people, who behave and follow the 'social norms' as part of their educational strategy. It works for some but leaves out many others and has a tremendous cost. We must continue with the good things about current education, but we must drastically change those that go against authenticity and flourishing. We have to change this trained incapacity. We have to take off, now, our social-masks. Non-dangerous, non-normal behavior must be the 'new' norm, has to be encouraged: in families, in schools, at the workplace. Imitation is one of the worst ills of society. As Jung puts it,

> **Human beings have one faculty which, though it is of the greatest utility for collective purposes, is most pernicious for individuation, and that is the faculty of imitation. ... Society is organized, indeed, less by law than by the propensity to imitation, implying equally suggestibility, suggestion, and mental contagion" (Jung, 1976:103).**

Education is doing nothing about this. It is creating a herd of followers of the social norm. How can this be changed? Society should have a holistic plan so that we can provide "educare" to each child from the moment of birth.

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That holistic strategy does not depend solely on Educational Institutions, but in all Social Institutions, in a lifelong learning process. Endless. We need to structurally change the way educational institutions are today, and the same should happen to the other social institutions like the workplace, family, friends, media, and so forth. Several ideas emerge from this. How, for example, should businesses be structured, so that current 'training' programs, or 'in-House universities' are deconstructed, reimagined, and fully synergized with schools and universities? Another example, how is the family empowered to ensure the Work-Family Conflict is reduced to zero, and the triad of family-school-workplace is synergized?

How is diversity really welcomed in society? How could vulnerability and humility be a guiding force and take us where we really want it to be? So, people will *feel free, empowered, confident, resilient, and autonomous, full of responsibility and ownership — ready to take on challenges and persevere in the face of roadblocks.* People will grow and strive for goals and continue to build confidence and competence through continuous improvement. People will want to *contribute and give back to society and the world. People will want to make their own unique contribution.* And finally, people will f*ully utilize one's gifts and talents*. This is our dream.

Perhaps an organization like the United Nations should be charged with this goal. Every Government must participate in this new version of education, which is holistic and interconnected. The UN has another big challenge... it has to be connected to three factors: the distribution of wealth (measured by the GINI coefficient), the human-development approach, and multiculturalism. Without this triad, the future looks unpromising. The three components are structured towards equality, inclusiveness, and diversity—EID. For example, when the PISA assessments are done, a country will receive the results and then those will be weighed by EID, multiplied by those in a new formula. The Denmark 'MeToo' movement was very active in 2020 with a number of sexual harassment scandals. Is this an example of EID? So, even though, within today's PISA rankings' Denmark will moved down in rank since its 'educational holistic system' was not working well.

The UK scores very highly on the PISA ranks. But are these test scores a measure of how well the education system works? In the UK, 14% of the population suffers from loneliness, a problem of such size that there is now a Minister of Solitude to manage that 'social illness'. It's a sign that they are not educating the child to relate and connect emotionally to another human being.

And if we look on to the multiculturalism prism of the triad, several challenges emerge. How do we know that a human being has been correctly educated into the diversity arena? This is very difficult. The value proposition in human existence has been highly analyzed, theorized, and wrongly actualized. We have to start from listening to "the Other". We need that soft-skill in all inhabitants of the world, so we can have the urgent dialogue needed to build the structure of a multicultural world. Then we will structure the measurement of a good

Describe a moment in your life when you experienced the joy of learning

The assignment was to create a short story to share in class. I wanted to do a story about Father Sarducci, from Saturday Night Live, negotiating for the hostages held in Iran to be released. I was driven to find knowledge, synthesize these exotic viewpoints, and excited to create the story and share it. Everything about the experience was intertwined with things I was drawn to- a loving father, humor, sarcasm, writing, religion and few sprinkles of showmanship. It's easy to grow and extend situations we find inherently fertile and nurturing.

Ronda Cypret-Mahach, Ed.D,
Educator, USA

education in the multiculturalism arena. But, without the skill of deeply listening to another 'different' human being, dialogue is simply not possible. Another challenge, what do we need to listen to the other? Authenticity. It is the social pressure to be 'normal' that is having a big toll on our adulthood. The educational system is not working on this soft-skill. Normalization of society is fundamentally bad.

We should dig into the sociological changes, in thought, expectations, interactions and responsibility, that are required for this new educational paradigm to take hold. We can no longer intrinsically demand that learning only takes place early in life or in urgent situations. Nor can we consider education to merely be a form of childcare. This is not a project to educate an isolated child to become a *mature* adult (what a difficult word to define: mature). This is a child that belongs to a family, a child that also belongs to a community, and that needs to be part of a global network of nations.

Hence, how do social institutions operate with one overarching purpose, in terms of *educare*? By connecting them in one main goal: helping human beings know their essence, so they can build their purpose, a relational purpose in life. The question that all the members of these institutions ought to be asking at every moment is how to create the environment, the milieu, so every stakeholder of that institution has the skills to ask themselves what gives meaning to my life. Period. That's it. The economy ought to be a servant to this social higher purpose: to give meaning in life to every human being on earth—not the other way around, as it is in today's reality.

Hence, the guiding light is that society as a whole understand educare as the tool to help human beings to know the three most important words, words that are interconnected: essence, purpose, and meaning. What is my essence? Once I know, I have to ask that question throughout my entire life. Then, if that is my momentaneous essence, then what should be my purpose in life. Social institutions should be structured around helping human beings to know their purpose. Then, people will know what gives more meaning to their lives. Meaning is what I do that energetically connects with my purpose and reaffirms my essence. For example, we need to develop purpose-driven companies the world over.

Purpose is a calling. It is a dream; it is what makes us wake up in the morning and go the 'extra-mile'. John Mackey took his dream, his essence, and created Whole Foods Inc. Referring to this vision he understood purpose in the following way,

> **Purpose refers to the difference you're trying to make in the world, mission is the core strategy that must be undertaken to fulfill that purpose, and vision is a vivid, imaginative conception or view of how the world will look once your purpose has been largely realized. (Mackey & Sisodia, 2014, pg. 47)**

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This is totally different from Corporate Social Responsibility or the traditional 'strategic planning' approaches. It goes deeper. It is a good example. So, if we think about the family, the question will be what is the purpose of being a mother or father. And if we think about the school, then teachers will ask themselves, what is my purpose, why, by teaching, I give meaning to my life. And then, how can I teach, educate, *educare* my students so I will help them acquire tools so they will find, through a life-long journey of exploration, what gives meaning to their lives.

Closing this theme, what if we review one of the best books ever written about these existential needs. Victor Frankl's 'Man's Search for Meaning' is illuminating. For Frankl, meaning in life comes from three sources, so we need to structure the holistic education strategy of society to help every human on earth work on these three life-long learning journeys.

1. To have a purpose-driven job, work that matters
2. To embrace love unconditionally
3. To be courageous, authentically vulnerable, in the face of difficulty, so we can find meaning in our suffering

One can think that being in a concentration camp, as was Frankl's reality, is a huge suffering, and what laypeople are experiencing is a far simpler condition. However, emotions and sentiments are immaterial, hence, they cannot be compared. The frustration people feel when they don't do what their heart tells them to do is as big as being a captive in a prison. This pandemic has shown us that mental health is a huge issue and we are not paying enough attention to it. And Frankl's call is to accept that being human is not about achieving perfection but dealing with imperfection. Being humble. Learning from your mistakes; we need to give these essential tools to students, so they can handle life's disappointments, so they can grow, and can continue in their journey to finding meaning in their lives. Endless, knowing that they will never achieve it, like finding a rainbow's end. We can see the rainbow, feel, enjoy it, but we cannot grasp it, measure it. The same with meaning, essence, and purpose.
This is the Social Fabric that we want to create in the coming decade thanks to a holistic view of *educare*.

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Visit: https://bronnieware.com/blog/regrets-of-the-dying/

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What do you believe needs toWhat needs to be taught to be productive members of society in the 21st Century?

In my perspective, education should be focused on in the 21st century if we want to make it enhanced. Not only to be superior citizens of the society but to be advantageous and a productive citizen of the world since we all are on the same platform and are equal no matter the ethnicity or the race. Having to build a country on stable foundation starts with the residents living in that area. It' s time for us to get moving and start working hard in order to make this century and this world an improved place to live in.

Maryam Tahir
Student, Pakistan

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Epilogue

This series of papers on 8 different themes is just the end of the beginning. Hopefully, we've opened new pathways for thoughts and actions. Neither we nor anyone else can predict where they will lead.

It's up to you to write the epilogue.

Biographies

Samaya Borom Editor-At-Large

Samaya Borom (FRSA) is a law and criminology academic and practicing solicitor in international law with teaching expertise in criminal law, terrrorism studies, international law and human rights. She is also pursuing PhD research on the impact of artificial intelligence on sentencing at the Swinburne Law School in Australia. Samaya has a varied educational and professional background, she has spent over 25 years working in web and IT, including at the executive level, and has witness increased reliance on technology as a learning tool in the tertiary education sector — this has become even more pronounced with the need to shift to online education due to the COVID-19 pandemic.

Samaya has a strong interest in inclusivity and accessibility of education and is especially interested in how technology and education can be used to foster access to knowledge and life-long learning.

Samaya is a Fellow of the Royal Society of Arts, Fellow of the Global Research Network (UK) for the Crime and Terrorism Think Tank Program as well as a research member of AVERT (Addressing Violent Extremism and Radicalisation to Terrorism) Research Network and a professional member of the Australian Film Institute / Australia Academy of Cinema and Television Arts (AFI/ACCTA).

Dr Tony Breslin Theme Lead

Dr Tony Breslin FRSA is a teacher by profession, Director at Breslin Public Policy Limited, a Trustee of the charity Adoption UK and Chair at Bushey Primary Education Federation. He is also the author of Lessons From Lockdown: the educational legacy of COVID-19, published by Routledge in January 2021, and the author of two previous RSA Reports, A Place for Learning: putting learning at the heart of citizenship, civic identity and community life (2016) and Who

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Governs Our Schools? Trends, Tensions and Opportunities (2017).
Tony is currently working on the second book in what is set to be a trilogy of lockdown texts, Bubble Schools: the long road from lockdown, which is due to be published by Routledge towards the close of 2021. The third book, Post Pandemic Learning: the case for reschooling society, is due in late 2022.
Prior to the establishment of Breslin Public Policy in 2010, Tony was CEO at the influential education and participation charity, the Citizenship Foundation, served as a School Improvement Adviser in a London local authority, taught and held leadership roles in schools in London and Hertfordshire, and held a range of senior examining posts, including Chief Examiner at GCSE and Principal Examiner at A level.

Zoë Camper **Editorial Director**

Zoë Camper FRSA BA Hons, PGCE. Zoë is deeply interested in the use, and impact of technology on society. After gaining her degree in 3D Design at Surrey Institute of Art & Design, University College, Zoë started her career in automotive engineering. She studied for a PGCE in Design Technology at Goldsmiths' UAL and having spent two years teaching moved on to work at Cyberia, the UK's first Internet Café as Head of Training. She was part of the team that rolled out an international training franchise, working in Europe and Asia. She also led the team that produced the first official web-publishing guidelines issued by the UK Cabinet Office. As well as running her own company, she has worked with many UK and International organizations including BBC, BT, Sony, ITV, Demos, NHS, NHS Direct, Number 10 and Save the Children. She lectured at the BBC Academy for many years delivering courses on Design Principles, Coding, and graphic design. She has spoken at conferences around the world, including speaking at the IBM Think conference, about leading the team that designed and produced the UK's first health virtual assistant using Watson AI. Zoë is an RSA fellow and co-founded the Augmented Society Network in 2017. She now lives in Las Vegas, USA and is working in cryptography and apparel design.

Nishan Chelvachandran Theme Editor

Nishan is the founder of Iron Lakes, a cyber consultancy that empowers businesses and civil society to address and solve their biggest challenges through deployed technological innovations in AI, Cybersecurity, and Spatial Computing. He is a cybersecurity adviser, strategist, published author, researcher, and former UK Police Officer. He is on the RSA's Fellowship Council, as a Global Fellowship Councillor, and an active Member of The Institution of Engineering and Technology. He also collaborates with IEEE's Standards Association, on several initiatives such as the P7000x series draft standards for the ethically aligned design of autonomous and intelligent systems. He is the Co-Chair on the AI Systems Governance for Cities Industry Connections Programme and the Chair of Trustworthy Technical Implementations of Children's Online/Offline Experiences. He is a Director of Policy and Advocacy for the Women in Tech Global Movement. He is an advisor in AI Commons, and an Ambassador for the XPRIZE Pandemic Alliance. He is a special advisor to the City of Imatra, Finland, strategizing and deploying a Sustainable Redevelopment Vision for the region.

Jenna Fuentes Editor-At-Large

Jenna is an innovative, creative community partnerships builder, project manager, and trainer who is passionate about "bringing the humanities back into tech", cross-pollinating industries, developing people, and developing interdisciplinary systems & solutions for social impact. She has worked in Student Affairs at the University of California, Irvine, and Westwood Private College in the Orientation, Housing, and Academic Advising departments. She also has over 10 years of diverse experience in program management, partnerships, innovation consulting, and community building for international clients in the Edtech, accelerator & incubator, hospitality, creative arts, experiential marketing, journalism, and nonprofit sectors. She helped scale the global expansion of its program offerings for the Edtech startup, Trilogy

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Education Services. She contributed to Trilogy's staff, which grew from 20 to 1,000 employees within three years and, later, was successfully acquired by 2U, Inc. Her three-year study abroad and work abroad experiences in Spain and Argentina changed her life, world view, and her creative approach to problem-solving. Her mission and purpose is to help learners maximize their potential and create transformational community experiences.

Gary Handforth Editor-At-Large

Gary Handforth BA Psychology (Hons) MA (Process Consultancy) is an Executive Principal of 4 schools and Director or Education for Bright Futures Educational Trust, a Multi-Academy Trust of 12 schools in the North West of England. Prior to this he was the Head teacher of two schools in central Manchester. Gary has been a teacher and school leader for the past 25 years.

Gary has a particular expertise in school improvement, strategy and curriculum design and development, and coaching. He has an interest in organisational and personal psychology and philosophy and applies this to the design and facilitation of leadership training programmes, for example working with school and system leaders for the past 5 years and presenting at different regional and National meetings and seminars. He also has a keen interest in research.

Gary is a Chair of a Local Governing Body, a Trustee of Challenge Partners (a national network of around 450 schools) and a senior partner for the organisation, working with schools in the North West of England. He has worked alongside Manchester local authority for many years and within a broad range of work, largely focusing on disadvantaged families, e.g. Inclusion, Early Help. He currently works on the Manchester Local Authority Board for Inclusion. For the past 7 years he has also been a Local Leader of Education in the North West. He is a Fellow of the RSA as well as an Associate and Fellow of Leeds Beckett University, CollectivED, focusing on how coaching, mentoring and collaborative practices can support and improve professional development and strategy across the workforce and within schools.

Nitzan Hermon Theme Lead

Nitzan is an innovation consultant, writer, and coach. He is deeply passionate about the nature of communication and how we might move from artifact thinking to process thinking. In his practice, Nitzan helps companies break down silos of creativity through research, technological innovation, and R&D. He is a student and teacher of complexity — and is actively shifting the conversation from communities to circles and from networking to 'thirdness.'

He is adjunct faculty at The New School, Think Bigger fellow at Columbia Business School, and part of IEEE (AI and ethics), i4J, and Guild of Future of Architects.

Nitzan is an experienced coach, facilitator, and mentor. He is a certified Warm Data Host, an altMBA alumni, and a coach at residence at the New Museum Incubator for art and technology, NEW INC.

Carlos Largacha-Martinez Theme Lead

Carlos Largacha-Martinez is an award-winning consultant by the HBR/McKinsey M-Prize: Leaders Everywhere Challenge for the Scottish firm Energeticos-Woodgroup's business case. TEDx speaker with 'Management, Humanism and Imagination'. Social inventor and forecaster (futurologist). Quantum coach. B-Multiplier. Angel investor for Purpose-Driven Companies. Fulbright Fellow in a Post-Doctoral Visiting Scholar Program (years 2020-2022). Dr. Largacha-Martinez holds a M.A. in Sociology and a Double-Doctorate in International Studies and Quantum Sociology from the University of Miami, and a B.S. in Industrial Engineer from the Universidad de los Andes (Colombia). Executive education in Science, Technology and Innovation Policy from Harvard Kennedy School. Currently he is Research Professor at Universidad Areandina.

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Dr. Lynda Leavitt Theme Lead

Dr. Lynda Leavitt, Professor and Leadership Ed.D. Program Director is a faculty member in the Education Leadership department, Lindenwood University School of Education. Along with teaching she serves as dissertation chair to many LU doctoral students and is the School of Education Faculty Council representative. Dr. Leavitt is a member of the Lindenwood University Research Policy Advisory and Council of Educational Leadership. Most recently she became a RSA Fellow and served as a Lindenwood University Faculty Fellow for Emerging Pedagogy in which she co-produced the podcast WOW! I want to take that class with Dr. Elder Dr. Leavitt currently produces the Ed.D. podcast CapIt!@Lindenwood published on iTunes. Dr. Leavitt received her Ed.D. in Educational Leadership from St. Louis University and holds the following degrees and certificates: M.A. Curriculum and Instruction, M.A. International Studies, B.S. Elementary and Special Education, and a B.S. in Political Science, Foundations in Design and Advanced Design Thinking Certificate from IDEOU. Most recent publications include: Handbook of Research on Social Inequality and Education, Cultural Awareness and Competency Development in Higher Education and Critical Thinking in Higher Education.

Rachida Merbough Theme Lead

Rachida graduated in 2011 from Commerce National Business School in Morocco, her University studies are about managerial accounting and corporation management. In 2016 she was certified an expert in renewable energies finance from Frankfurt School of Finance and Management. Rachida works currently in the sector of public finances as a professional of public auditing. She is also a Doctor of Business Administration; DBA studies were pursued at Collegium Humanum Warsaw Management University situated in Poland. Her Doctorate dissertation examines the effects global exchanges and interdependent relations have on formation of international cooperation strategy. This subject is drawn from history of events in international cooperation world, Rachida concluded that to answer this types of problems, proper strategies can be formulated such

as networking and data sharing. She is also a recent RSA fellow and lives in Morocco, North Africa.

Anna Morrison Editor-At-Large

Anna Morrison CBE is the Director and owner of Amazing Apprenticeships, an organisation that creates and publishes a variety of inspirational and interactive resources to support teachers, students, parents & carers and employers to understand the range of apprenticeships available and to help them to feel confident and informed about the next steps to take. Anna has worked in the education sector for 23 years and is passionate about social mobility, diversity and inclusion. She works tirelessly to ensure that apprenticeship opportunities are made available and accessible to all individuals, including those who may face barriers and challenges in securing those positions. Most recently she has become an RSA fellow.

Amy Moser Theme Editor

Amy Moser is an experienced teacher committed to inclusiveness and equity across genders, cultures, abilities, and financial resources. Amy brings a direct connection between the theories in many of the papers and the practicalities of what happens in and out of classrooms with students. Amy currently lives in Nevada.

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Julie Samuels Senior Editor

Julie Samuels is an independent researcher. She holds a BA Hons in Visual & Performing Art, Masters in Fine Art, Post Graduate Diploma in European Digital Media, Post Graduate Certificate in Teaching & Learning and Masters of Philosophy research degree. Julie has over two decades of professional experience working in the creative media industry and the educational sector. Within industry as a web developer/designer for Motorola, Schoolsnet, Telewest, ITV and FDM Group PLC., and as a design/developer trainer for Maxim Training, FDM Group Plc., and the BBC Academy. Within the education sector Julie has worked at senior lecturer and course leader level land has been responsible for courses in digital media and the creative arts. Julie is the author of Adoption in the Digital Age: Opportunities and Challenges for the 21st Century (Palgrave Macmillan, 2018). Her primary research is within the field of social sciences where she examines the transformation of adoption and fostering due to the Internet. She has published journal articles within this field. Julie has presented her research and showcases her art in the UK and abroad. Julie holds a voluntary position as Head of Research for Special Guardians and Adopters Together, a peer led campaigning group that aims to create awareness and achieve dialogue about systemic problems within UK permanence through a lived experience research-based approach.

Jessica Slayback Contributor

Jessica Slayback, a pioneer in non-traditional education, has a deep-seated belief that we have the urgent responsibility to reinvent how we educate our children. Immediately after graduating from The University of Chicago, summa cum laude, Slayback taught 4th grade for two years in Harlem with Teach for America while obtaining her Master's Degree in Education. Through her 20+ years of experience in Public, Charter, Independent and Private Schools, Jessica has developed and run youth theater programs within inner city schools in Chicago and NYC, created and implemented a 6-12 grade Music and Theater Curriculum for North Star Academy, obtained a grant in order to travel with Newark High School students to New Zealand and spearheaded the

development of a thriving K/1 program at Garden of Angels School in Santa Monica.

Witnessing sparks of greatness and moments of brilliance when children are honored for who they are and are presented with opportunities in which to shine, led her in 2009 to develop and co-found The REALM Creative Academy - a thriving learning center that combines a unique and innovative approach to education offering creative and diverse educational experiences, igniting students' minds with a passion for learning while allowing students to guide and shape their educational journey. While raising two beautiful boys with her video game designer husband, Sean (as well as a fuzzy dog and cool bearded dragon) she continues to relentlessly strive to innovate education to promote the growth of aware, empathetic, joyful, creative, purpose driven humans.

Jenny Seelman Stiven Editor-At-Large

The consummate inside resource for comprehending what audiences/consumers want, especially during this era of innovation and change, Jenny Stiven is called upon by media firms and service entities alike to get the job done with efficacy. Following years of executive experience in the digital content and production, after a starter career in TV production, Jenny has dedicated the past 5 years to primarily audience development, specifically fandoms. As a global leader in digital production and strategy — mostly focusing on entertainment properties with a specialization in franchise management — she continuously gets to feed her inner geek. In whatever spare time remains, Jenny appears as an audience-engagement expert on panels at conferences around the world and as a regular series exploring the convergence of social and fandom for both live streamed and on-demand viewing.

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Tim Stiven Theme Editor

Before moving back to his native San Diego, Tim Stiven received his B.A. in History, and his Teaching degree, at Loyola Marymount University. He taught History at The Brentwood School in Los Angeles for 15 years, where he was Chair of the Humanities' Department. Since returning to San Diego in 2006, he contributed to the development of the Social Science Department at Canyon Crest Academy, a comprehensive public high school dedicated to the Arts and Sciences, opened in 2004. He has taught Advanced Placement History courses, as well as created a Non-Western History seminar course. In addition, Timothy founded The Envision Conservatory for the Humanities, in 2013, at CCA.

Timothy has dedicated his four decades in education to nurturing creative thinkers, promoting cultures of empathy, and a cultivation of gratitude. The Conservatory — an award winning three-year, local and international project-based, after-school program — is committed to deepening students' mastery of the Humanities.

He is also on the Board of Directors for the San Diego International Sister Cities Association, and is President of the San Diego-Panama Sister City Society. He is a member of the World Affairs Council of San Diego and the San Diego Diplomacy Council.

Benjamin Strawbridge Theme Lead

Benjamin is a PhD student at the University of Cambridge, developing the use of dialogic teaching techniques in the secondary science classroom to reduce the effects of inequalities encountered by students with language disadvantage. His research builds on a successful classroom pilot study he conducted while completing his MEd at that university during six years of teaching science in UK secondary schools, including during the COVID pandemic. Benjamin's professional experience spans a range of practical and theoretical aspects of teaching, teacher-research, and research implementation. In schools he

championed mental health support for young people, and undertook additional training and qualifications in that field. Having founded Strawbridge Tutoring, he draws on this wealth of experience and knowledge to offer a range of personal educational development services, helping young people to exceed their goals and grow as effective learners, communicators, and leaders of tomorrow.

Ruth Travers Contributor

Ruth Travers is a fellow of the London College of Music and the founder and creator of the Stave House music method of education now taught in 23 countries. The method combines auditory, visual and sensory learning and promotes wellbeing and creative development both in teachers and students and raises the standard of music being taught in schools.

She believes that every child has the right to a cultural and musical education of a high standard and is passionate about delivering such an education to children across the world.

Ruth is a music educationalist and trains teachers around the world, facilitates jobs for new music graduates and promotes the teaching of musical notation to children from all walks of life including supporting and mentoring a music programme teaching music and English to refugee children in the Sahara Desert.

Jonathan Tavssberger Editorial Director

Co-Founder and Director of Kaleidoko Ltd, Jonathan Tavssberger is an award-winning futurist, entrepreneur, marketer and strategist with a knack for breaking down the highly complex — or even the mundane — into simple terms that trigger new ideas and practices. Jonathan specializes in marrying vision, business strategy, consumer insight and technology; all with humanity at the core.

Over the decades, Jonathan has been an executive for, or served client ventures including 21st Century Fox, Warner Bros., Disney, MGM, ABC, Cogsdill

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International, ABS-CBN, Real Medicine Foundation, Auxxit and Empact Change Foundation. In addition to speaking at media, business, museum, and retail conferences, he has held an Adjunct Professor position at Boston University and taught in all levels of education. Jonathan is a Fellow of The RSA, Co-Founder of the Augmented Society Network and a Stubbs Alderton Preccelerator mentor.

Mitch Weisburgh Editorial Director

Mitch helps organizations succeed in the US K-12 education sector.
Mitch cofounded Academic Business Advisors in 2005, which helps organizations develop business strategies to align their products and services with the ways purchasing decisions are made and technology is used in schools and districts so that they can scale and make a difference to kids and educators.
In 2014, Mitch cofounded Edchat Interactive with Tom Whitby and Steve Anderson, a service to share best practices among educators through live online interactive events.
In January 2015, Mitch cofounded the nonprofit Games4Ed with Larry Cocco, to facilitate collaborations between educators, researchers, game developers, publishers and policy makers to further the use of games and other immersive strategies in schools.
Mitch served on the Board of the Ed-Tech Industry Network (ETIN) of the SIIA from 2012-2019, was cochair from 2015-2016, and was chair in 2019.
If you are at all interested in what Mitch did before 2005, buy him a glass of wine and ask.

Cyrill Wiget Theme Lead

Cyrill is an enthusiastic financial executive and computer scientist who combines these two disciplines to innovate and lead digital transformation. Over 25 years, he has created significant value for institutions and clients by anticipating market shifts, applying technology in transformative ways, and

navigating multi-cultural environments on three continents.
His passion for computer science coupled with his business acumen compelled him to co-found and serve as general partner of an early-stage investment firm dedicated to disrupt and incubate startups in the Fintech, EdTech and Food Delivery market.
Cyrill serves as Board Advisor to a Fintech startup, panelist and mentor for young entrepreneurs of disadvantaged minorities, and judge for numerous business awards in Silicon Valley. As an elected Fellow of the RSA he is engaged in the Augmented Society Network and exploring the future of education.
He holds a BS in Computer Science, MS in Banking & Financial Management from the University of Liechtenstein, and an Executive MBA from the University of Geneva.

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