The emerging alternative to our current world-wide academic education:

REAL-WORLD-IMPACT / EMPOWERMENT EDUCATION

By Marc Prensky
The Global Future Education Foundation and Institute

Executive summary

Several things are now, I think, fully clear.

THE FIRST is that the current "academic" educational system — used throughout the world — has reached the end of its mainstream usefulness. It does not address our quickly arriving future. It does not produce the people we need. It is a system, essentially to train, academics (i.e. thinkers who are not, also, doers), which our planet no longer needs very many of. Designed originally for a privileged few, it has been applied to a wider and wider audience with decreasingly successful results. "Academic" education, where we tell kids, in classrooms, what they need to know and then test them and rank their performance is destined to become, in the long run, at best, a niche. Despite its current universality, it is a terrible way to prepare young people, adults and countries for their future in the third millennium.

THE SECOND is that no amount of money—even billions of dollars—whether from philanthropy, investors, technologists or governments—can prevent its demise. Lord knows we've been trying. Sadly, multiple billions of dollars, euros, etc. have already been thrown into the pit, and much more will be before this is fully recognized. A good analogy here might be Japan's continuing to prepare Samurai swordsmen after the arrival of guns. As they say in Brooklyn, "Fuggetaboudit."

THE THIRD is that technology, alone, is not a savior — in fact, it presents, rather, a new set of challenges. How do thinking, acting, relating and accomplishing change in a human/machine world? What do we keep for humans and what do we delegate to our increasingly powerful machines? How do we work symbiotically with technology in to everyone's benefit in a world of rapidly-increasing automation?

None of these developments is necessarily positive news. But **THE FOURTH** thing that has become clear—and the very good news—is that **the necessary replacement for this academic education—the kind of education that will take our kids and our planet into the future—has already emerged in the world**. **It is Real-World Impact / Empowerment education.** It has not been "invented" by any one individual or group, but has emerged, in multiple forms, throughout the world, at all levels—from pre-school to primary, secondary and college/university. It is not, as some might possibly think, a lesser, or "vocational" education for the less academically-minded, but rather a true *replacement education* that the best and brightest we have — along with everyone else—will benefit from mightily.

The Huge Problem

I am not alone in thinking this way—I have thoughtful colleagues all over the world, inside and outside of education, who are convinced it is true. BUT WE ALL HAVE A HUGE PROBLEM: How do we get from the education we have, to the education we—and especially our kids—need?

Do we, for example, introduce Real-World Projects gradually into our current schools—for example one day a week, or for a week every other week, or at the ends of courses, and hope it gains—as the current venture capital phrasing goes—some "traction"? This has been the approach of most, but I am now finally convinced that this approach will not work. **I now believe no amount of "inserting," or "piloting," or "pushing" will get Real-World Projects to replace what I call "THE MESS" (i.e. linear classes in math, English—or another language—science and social studies) as the core for all students and the "real" road to a "true" education in our current system.**

So what do we do? What follows is my current best answer, along with explanations of why I think it works better for all concerned: parents, students, administrators, politicians, adults and more.

I. Toward an alternative, end-to-end, Real-world-Impact / Empowerment education

Real-world Impact / Empowerment education exists, but just having scattered teachers and schools, in-class projects, capstones for academic courses and programs doing it isn't enough.

A Real-world Impact / Empowerment education requires its own end-to-end system.

Parallel End-To-End Systems

What I find particularly interesting is that if you look around—as I have been doing—you can find Real-world Impact / Empowerment educations at all levels. Pre-school and primary school kids are doing Real-world Impact / Empowerment education at the Riverside School in India—and, through the extension of Design for Change—in multiple countries. Kids are doing Real-world Impact / Empowerment in Silicon Valley at the Khan Lab School and elsewhere. High school kids are doing Real-world Impact / Empowerment at High Tech High in San Diego, CA (and doing it there in primary schools as well). College students in France are doing it at Ecole 42 (now expanding to other countries). They are doing it at Cogswell College in California and in a variety of other higher ed institutions. (Note: This is a terribly partial list, which I expect to expand greatly in the near future with some research.)

So—even today—it is possible for a determined parent, or student, to find a way, by going from school to school in the world, to receive an education that is 100 percent Real-world Impact / Empowerment based. But, as far as I know, there is as yet no easy, or straight-line, direct way to do it, starting in pre-school and continuing through high school and college graduation in the same or related institutions.

That is what we need to create, in multiple varieties and instances.

This creation of end-to-end Real-world Impact / Empowerment systems can be done in several ways, simultaneously:

- Colleges (or businesses) doing it can reach down to lower levels.
- Schools doing it can reach up and extend their Real-world Impact / Empowerment to tertiary education.
- Existing programs at different levels can merge together.
- School systems, public and private, that already contain all the elements and levels and can just start and merge them. For example, New York City runs both schools and colleges/universities. The SEK Group in Spain has pre-K through university.

In my view, the most important thing is that these "Real-World Impact / Empowerment" verticals be maintained as separate education systems along side of, but outside of, the academic systems. Let me explain why I think this is good for everyone.

PARENTS

Parents provide the strongest case for the need for alternative end-to-end systems. The greatest concern of parents these days is "fear of their kids' missing out on a good college experience" because those kids lack the GPA, advanced placement and other credentials needed to get in which they believe can only be acquired through the academic system. Having an end-to-end alternative education solution would remove the entire "getting into a good college" problem, since a student who goes through a Real-World Impact / Empowerment education system will AUTOMATICALLY (assuming they do well) be admitted to a college in that system. In fact, it is almost certain that, as multiple end-to-end solutions emerge, kids will have a choice of multiple in-system colleges—all those colleges will be searching for kids with a Real-

world Impact / Empowerment background. As the multiple end-to-end systems begin to establish norms and standards, students will be able to transfer easily within the end-to-end systems at all levels. (Note: Should there be any kids who start in a Real-world Impact / Empowerment system and want to leave it for the academic system, they will be able to do so. They will likely need to catch up on the MESS, but experience shows this is possible, and not that difficult for the truly motivated.)

To the extent that some of these Real-world Impact / Empowerment verticals are sponsored by companies—which is likely—and to the extent those companies influence the projects students do, graduates of these systems should have an easier time finding jobs in those companies. Under certain conditions, such jobs could even be guaranteed.

STUDENTS

Contrary to what we find in academic education, almost all students who start at some point with Real-world Impact / Empowerment education like it, become very engaged in it, and want to do more of it. Although it is difficult (or even impossible) to compare students who have been through academic and Real-world Impact educations, graduates of High Tech High, Cogswell, and other Real-world Impact / Empowerment educations do not appear either unhappy or disadvantaged by their choice. Indeed, it is most often the opposite that occurs. We need to be collecting any data that shows this.

Any problems arising happen mostly when kids who were initially educated "academically" (i.e. taught to memorize, take notes, and regurgitate on tests)—and have gotten good at this—are suddenly thrust into a Real-world Impact / Empowerment environment, where much more individual responsibility and initiative is expected. But this is another good argument for end-to-end Real-world Impact / Empowerment systems.

TEACHERS

Teachers are another group to whom end-to-end Real-world Impact / Empowerment systems will bring great benefit. There are, today, a great many unhappy teachers around the world who feel that the kind of teaching they are expected to do (i.e. content delivery and tell-test) is not what is needed by many of their students. With little or no opportunities, encouragement or support from the current system it is difficult for them to just switch over on their own to coaching kids on projects.

But with two simultaneous systems, such opportunities to switch to a different kind of "teaching" become readily available for new and existing teachers who want this. No existing teacher will be "forced" to make these changes, and no one will need to pay for the kids of expensive "professional development" efforts in this direction—which typically pay off very little. Instead, teachers will have the opportunity to self-select: if they are motivated personally to want to teach in the Real-world Impact / Empowerment style, they can join a system that offers that. They can then put their full attention on doing that job well, and not be distracted (and often pulled down) by all the content, testing and ranking required in the "academic" system.

POLITICIANS / GOVERNMENTS

As one member of the EU parliament put it: "The eternal debate about 'academic' and 'vocational' educations is getting us nowhere. Having as our educational goal 'bettering the students' world'—for ALL students—is much more useful and productive." Real-World Impact / Empowerment education is directly aimed at this goal, deliberately building—through the projects—students' thinking, acting, relating and accomplishing skills, as well as their self-confidence and self-esteem—and at the same time bettering the students' (and our) world. Students will be able to self-differentiate: within their many team experiences some students may be more attracted to the intellectual side of doing projects, and some to the practical or relational side. This will help all students understand where they can best add value to the team-based work that is certainly their future.

Currently, government certification of teachers happens only within the Academic system, but this is not impossible to augment, by adding parallel certification for Real-world Impact / Empowerment teaching.

TEACHER PREPARATION SCHOOLS

Because it is where the current "certification" of teachers takes place, today all teacher preparation schools prepare teachers to work in the Academic system. Yet some forward-thinking schools of education may already be adding subjects like "Management of Real-World Student Projects" to their curricula. As this happens, more and more education schools will begin identifying and preparing teachers who prefer the new Real-world Impact / Empowerment system, rather than the old. These forward-thinking education schools will create an alternative, parallel teacher certification and training process for Real-world Impact / Empowerment schools.

NEW SCHOOLS / VENTURES

It is almost certain that some individuals and/or companies will see a good investment opportunity in creating end-to-end Real-world Impact / Empowerment schools—and that this will lead to many different end-to-end Real-world Impact / Empowerment systems around the world. This creation of new end-to end systems, along with the creation of internal end-to-end paths within existing public school systems, will hopefully offer parents (and students) much greater opportunity to find an education that fits their evolving 21st century students.

My Own Future Work, + Others

I believe that the potential power of having end-to-end Real-world Impact / Empowerment systems, **where students can get this different kind of education, that they want and need, for their entire time in school,** is so great that I plan to spend a large part of my energy over the next decade making it happen. A team of dedicated individuals and numerous good examples are already working, on their own and with me, in this direction. Kiran Sethi (India), Nieves Segovia (Spain), and Thamila Zaher (Brazil) already run systems that could move in this direction. High-Tech High, (U.S.) which has already moved downward to primary education, might move upward to higher education as well. Colleges and universities currently introducing robust Real-

world Impact programs may move downward, creating "farm teams." Superintendents and administrators, such as David Engle in Washington, can help create these systems within—and as support for—communities (as he has already done several times). World-class master teachers like Esther Wojcicki are spreading their Real-world Impact methodologies, such as "T.R.I.C.K." (Trust, Respect, Independence, Collaboration, Kindness). New, easily implementable methodologies for doing projects are emerging, such as Design for Change's "FIDS" (Feel, Imagine, Do Share). Successful companies like Cisco are starting schools, and more companies can be enlisted to create and/or fund Real-world Impact / Empowerment systems. Philanthropists can start up programs from scratch. Existing programs of limited scope can be spliced together into end-to-end alternatives. Forward-thinking Education schools can begin introducing both alternative programs for new teachers and re-training programs for teachers who want to move to the new system. Groups like the IBO might be enticed to add the concept of full-time Real-world Impact / Empowerment alternative education to their offerings. The OECD might want to get involved. Databases of potential openings can be established.

The final thing needed is a widely-accepted generic "umbrella" name under which all these emerging "brands" can unite.

This is a huge opportunity for someone looking to put their name (and money) on something of huge, long-lasting value to the world. Here's why:

II. Providing a "conceptual umbrella" for all global schools offering a Real-world Impact / Empowerment education

(as an alternative to "academic" education)

Although educational reform efforts may often seem extremely fragmented on one level, at a deeper level the world's education (pre-K through university) is now in the process of splitting into **two very distinct alternatives** for parents and kids to choose between:

- The **traditional "academic"** education, based on "content"—principally the "MESS" (Maths, English/local language, Science and Social Studies). This education is now offered practically everywhere—enhanced, in many places, with 21st century skills, social-emotional skills, and educational technology,

and

- An emerging education based on **Real-World Projects and Student Empowerment,** now showing up around the world at all levels: pre-K through college.

in order to unite and accelerate the spread of a new **Civilization-Level Alternative Education** emerging around the globe, what is needed—and what our Foundation's mission is to provide—is a "conceptual umbrella" (and a generic "name") for all the brands and schools offering this emerging

Real-world Impact / Empowerment education. Any parent should be able to say: I don't want an academic education for my kid, I want them to have a **Real-world Impact / Empowerment Education."** It will be even better when there is a one or two-word, easy way to express this alternative.

The Three Universal Principles of Real-world Impact / Empowerment Education

For any education to be considered an education that is **truly different from—and a valid alternative to** a traditional "academic" education, i.e. to be a Real-world Impact / Empowerment education alternative that moves beyond the "academic," "ranked," education of today to something which serves the children of tomorrow much better, **THREE KEY PRINCIPLES seem to us to be universally required:**

1. **VIEWING OUR STUDENTS'' JOB AS CONTINUOUSLY BETTERING THEIR WORLD, THROUGH REAL-WORLD-IMPROVING PROJECTS.** Viewing the **reason** we educate our kids as **enabling and empowering them to better their world.** Viewing the best **educational means** to empower our students not as "courses" and "classes," but as a continuous stream of coached, real-world-improving projects.

2. **VIEWING TODAY'S AND TOMORROW'S KIDS AS GREATLY EMPOWERED INDIVIDUALS**—empowered by both technological and societal changes—and therefore deserving of our **RESPECT AND TRUST** far beyond what we typically do in our "academic" education. Viewing education's mission not as "instructing" kids, or "ranking kids" or even "teaching kids to think," but **AS FURTHER EMPOWERING KIDS**. Valuing not just our students' thinking, but equally their ability to act, relate and accomplish in the world. And, therefore, demanding far more of our students—including that they continually surprise us with what they can do and accomplish.

3. **VIEWING THE GOAL OF EDUCATION** not as producing academic successes, but **AS PRODUCING GOOD, EFFECTIVE, WORLD IMPROVING PEOPLE.** This includes helping those people develop, as a hedge against being replaced by automation, a sense of their **CONNECTED UNIQUENESS:** i.e. of the powerful intersection of **the issues each cares about in the world, what they are good at, and what they love to do,** and how to use this self-knowledge to add value in a connected, team-based world.

About Real-world Projects

The Real-world projects (10-20 per year) that each student competes, as their education, are all student-created and teacher-coached, with varying lengths and team sizes and follow student interests and applied passions. What all of these projects have in common is a **Measurable Positive Impact** on the world —particularly the students' world. There is a free database at btwdatabase.org describing over 100 Real-world Projects already accomplished by students and student teams around the globe. These include:

- Kindergarteners in France teaching the senior citizens at a local old-age home how to operate iPads in exchange for reading and writing tutoring.

- High schoolers in Texas designing and prototyping a complex robotics system to clean and maintain the world's largest radio-telescope.
- College students in Denmark creating an App to alert people online whenever garbage bins were full or needed maintenance, that was implemented by the local government.
- A fourth-grade class in Missouri responding to a "Request for proposal" for a new waterpark, forming teams to design the waterpark to their own needs, lobbying the city council, and ultimately getting their ideas Incorporated into the plans of the architectural firm that was awarded the contract.
- An 11-year-old reacting to the water crisis in Flint, Michigan by building a sensor and app system that reliably detects lead in water far more quickly and cheaply than existing systems.
- A 15-year-old designing a 3-cent test for pancreatic cancer that finds it earlier and is 100 percent accurate.
- 11-year-olds in Texas identifying the "trap houses" in their neighborhood where drugs were being sold and working with police to get them shut down.
- A high schooler in the US creating an App that allows students bullied at lunch to reserve a seat at a safe, welcoming lunchroom table.
- A 14-year old in the U.S. creating an App that uses AI and facial recognition technology to help Alzheimer's patients recognize their loved ones.
- Primary school students in India, experiencing bad odors in their classrooms and tracing the cause to urine on their feet and clothing, finding a way to make inexpensive urinals from old water bottles, and installing them in their bathrooms, eliminating the odor.
- High school students using drones and existing data to monitor marine debris in Alaska.
- High school students from around the world working with NASA on a worldwide earthquake prediction system.
- Female students in Benin creating programs to keep more girls in school and prevent their families from marrying them off, getting authorities to sign a petition banning forced marriages.
- An 11-year-old student in Texas, concerned about "hot car" deaths, inventing and building a device that senses when a car is overly hot and a kid is inside, and blows cool air onto the kid's car seat while notifying parents and police.
- 15-year-old students in India inventing a woman's sandal that stores energy from walking and can deliver an electric shock to a rape perpetrator while sending an alert for assistance to police and family.
- Students in Idaho, alarmed at suicides among their fellow school kids, creating programs to help prevent them.
- Teens in Georgia creating an App to rate police encounters and compare local police forces.
- High school students in India, concerned about corporal punishment in schools, designing alternatives and getting teachers to change their behavior.
- High School students in Colombia, seeing their rural areas devastated by mining, building a "toy"-sized airplane to reseed those areas.
- 21 young people in Colorado, aged 8 to 20, suing the U.S. government for its inaction on climate change.
- High school kids in California, continuing the government's important water monitoring program, using the state-purchased equipment when state ran out of money.
- 8th graders in Ohio discovering a way to convert Styrofoam waste into activated carbon that can be used to filter water.

Where Is This Happening?

"Show me this new alternative in action, with real people" is a question I am often asked. And although I can point out hundreds of projects and teachers currently doing Real-World Impact /

Empowerment education, I cannot point, today, to any **end-to-end implementation** of this Real-World Impact / Empowerment alternative—nor even to one "ideal" school. I **can,** however, attest that **all the elements future kids need already exist** in various schools and implementations around the world. Moreover, I suggest that there may never be an "ideal" school, nor any single "model" that will "scale" everywhere, because there is no "one way" to do the new alternative education—almost all effective education is very place-based.

But whenever the three key elements exist, we have an instance of the alternative education model in action—any additional, varying, features are 'local or individual implementations'—which can, should, and will happen in thousands, if not millions, of ways. Examples include:

- Kiran Sethi, of Design for Change, using the alternative model in the Riverside School in India, with a simple, design-derived **FIDS** (Feel-Imagine-Do-Share) **methodology**: She has expanded this project methodology to individual schools in 60+ countries, with thousands of teachers and students around the world.

- 43-year veteran master teacher Esther Wojcicki , formerly Chairperson of Creative Commons, using the alternative model in her journalism classes at Palo Alto High School, using her "**T.R.I.C.K."** (Trust, Respect, Independence, Collaboration, Kindness) **methodology**—with hundreds of happy, successful graduates.

- High Tech High in San Diego spending 20 years perfecting the alternative, all-project methodology, and expanding from High School to elementary school—again, with many happy, successful graduates.

- Newly created "Concept Schools" in Brazil now starting to use the alternative model with primary kids, and looking to expand around the world.

- Many colleges and universities worldwide starting to adopt and incorporate the new model into their models and programs. Ecole 42 (France) and Halleberton and Cogswell Colleges (U.S.) using it for coding at the college level. "Hacking" courses at Georgetown U. and other schools having student teams solve real-world problems submitted by various military and business organizations.

All of these are examples of educations that are **conceptually, substantively and fundamentally different** from today's "academic" education, which is based principally on offering the same "MESS" (math, English, science, social studies) "courses" to all. Many more of these exist around the world.

"We all want our kids to be educated. What's changing is what an education is, and what 'being educated' means."

Our Goal

Our goal, through the not-for-profit Global Future Education Foundation, is to help the world—parents, kids, politicians and everyone interested in educating our kids—understand that our society today is beginning a **civilization-level change** in what we mean by "education."

We want people to become aware that a valid alternative to academic schooling has now emerged in the world that is**,** we believe, **better for most of today's empowered kids**—and that this alternative is increasingly available, around the globe, for students and parents who seek it.

We do not seek to displace "academic" education. Because there is so much invested in its continuation, and because there is value, for some, in what it provides, "academic" education and "the MESS" will never completely disappear as an alternative. Rather we seek to ensure and promote that there is now an e**qually valid (and equally valued**) alternative path for those students for whom our academic education isn't working.

Today, in a small but growing number of places around the globe, parents, students, teachers and politicians already have this second—and, for most kids, far better—educational alternative available to them. But we are just beginning. **It is our mission to make this Real-world Impact / Empowerment education alternative available, end-to-end, EVERYWHERE, and to give it the same status, for all students, as an academic education.**

Some Characteristics of Real-World Impact / Empowerment Education

TEACHERS REMAIN KEY. We do not support or suggest an education without teachers. But what teachers actually do with their students—i.e. the teachers' "pedagogy"—changes dramatically in the alternative Real-world Impact / Empowerment education. The key change is from "content delivery" to "project coaching." Teachers in this system will learn to do this better and better using new techniques such as "T.R.I.C.K." (Trust, Respect, Independence, Collaboration, Kindness), and "FIDS" (Feel-Imagine-Do-Share). Many more techniques will be developed and shared among these Real-world Impact / Empowerment teachers.

IT INCLUDES ONLY THOSE PROJECTS THAT ARE "REAL" AND WORLD-IMPROVING. The Real-world Impact / Empowerment alternative is based on kids, in teams, doing—**as the principal element of their education**—a continuous series of real, world-improving, projects (possibly 10-20 per year)—all the way from kindergarten through university. It is based on the premise that doing a large number of these projects over the course of their pre-K--college years—with proper guidance—will provide students with precisely what they will need to succeed in their lives—the ability to fit in to a rapidly changing world, and get things done.

Importantly, Real-world Impact / Empowerment education is DIFFERENT from what today is known as "PBL" or "project-based learning." PBL, used within academic education, consists mainly of "fake" projects, where the metric is "meeting standards." The metric for all Real-world Projects is **Measurable Positive Impact** on the world. They are projects where, when completed, students can point to something in their world and say: "That was a problem before, but I and my team made it better!"

Today, a wide variety of these Real-world Projects are already being done by students of all ages all over the globe. As noted previously, more than 100 already-completed projects of the type we would see in such an education are collected in a free database, online at **btwdatabase.org.** (See earlier for a list of selected examples from this database.)

Yet powerful as they are, the projects in the database represent only a small beginning of the wide range of projects—and the enormous positive changes we will see—when kids are doing real-world-improving projects from the start of their educations.

IT INCLUDES ALL NEEDED LIFE-LONG SKILLS FOR THINKING, ACTING, AND RELATING—BUT FOCUSED ON REAL-WORLD ACCOMPLISHMENT. In the process of doing the Real-world Projects students learn not only key methodologies for project management that will serve them throughout their lives and careers (see Section III), but importantly, they acquire as well—coached by their teachers and other mentors—the full range of basic thinking, acting, and relationship skills that humans need to succeed and that humans have refined through the centuries. These are listed in the chart below. However, these skills, in this alternative education, are not developed though "courses," but rather through the reflective process of doing the real-world projects—with references to content and mini-lessons/interactions as—but only as--- needed.

EFFECTIVE THINKING	EFFECTIVE ACTION	EFFECTIVE RELATIONSHIPS
Understanding Communication	Habits of Highly Effective People	Communication & Collaboration
Quantitative & Pattern Thinking	Body & Health optimization	• One-to-one
Scientific Thinking	Agility	• In teams
Historical Perspective	Adaptability	• In families
Problem-Solving	Leadership & Followership	• In communities
• Individual	Decision Making Under Uncertainty	• At work
• Collaborative	Experimentation	• Online
Curiosity & Questioning	Research	• In virtual worlds
Creative Thinking	Prudent Risk-taking	Listening
Design Thinking	Reality Testing/Feedback	Networking
Integrative Thinking	Patience	Relationship-building
Systems Thinking	Resilience & "Grit"	Empathy
Financial Thinking	Entrepreneurship	Courage
Inquiry & Argument	Innovation	Compassion
Judgment	Improvisation	Tolerance
Transfer	Ingenuity	Ethics
Aesthetics	Strategy & Tactics	Politics
Habits of Mind	Breaking Barriers	Citizenship
Positive Mindset	Project Management	Conflict Resolution
Self-knowledge of one's:	Programming Machines	Negotiation
• Passions	Making Effective Videos	Coaching
• Strengths & weaknesses	Innovating with Current & Future Technologies	Being Coached
Stress Control		Peer-to-peer
Focus		Mentoring
Contemplation & Meditation		

EVALUATION EXISTS—BUT THROUGH CONTRIBUTION, NOT RANKING. The kinds of grades and rankings produced by the current "academic" system often lead students to bad choices, and typically make little difference as success predictors. A Real-world Impact / Empowerment education

removes all ranking of individuals—something which is highly anxiety-producing and destructive to our kids—in favor of evaluating project completion, measurable positive impact on others and the world, uniqueness and measurable growth in skills and roles and accomplishments. Students leave a Real-world Impact / Empowerment education not with transcripts of grades, but with **resumés of their real-world accomplishments,** and **a sense that they can add value to the world in their own unique way**. Not surprisingly, the best predictor of future accomplishment is past accomplishment.

NEW "BASICS"; NO "MESS" FOR ALL. Parents often worry about "basics," (such as reading and numeracy). Those remain important, for now, but the true "basics" all kids now need for their future are changing rapidly in our technology-filled world—including, especially, the ability to do real-world projects, i.e. to "get things done". The "basics" needed are now increasingly individual-specific and they can increasingly be acquired in better ways. Reading skills, for example, when needed to achieve personal student objectives and goals, can often be best acquired from peers, in a similar fashion to learning videogame skills. in a world where curriculum can be so easily personalized and customized, it no longer makes no sense to teach everyone the same "basic" "MESS" curriculum of Maths, English/native language, Science, Social Studies. Rather, we must find out what skills are basic **for each student**, based on their own concerns, strengths and passions, and make sure each student develops them in the context of things they want to do and choose themselves. This can be best done through continuous projects, where we can help kids find their own unique **individual blend** of human/machine and other skills.

III. Projects are becoming the preferred way to work and organize in business, military, etc.

We must prepare our kids for a project-based world

One of the frequent complaints of business leaders is that they can't find enough qualified people. While this is often expressed as a lack of "critical thinkers," what they really need and want is more than that. They are looking for---as Google once put it on its website---**people who can get things done**. That they can't find them is hardly surprising, since the type of "Academic" schooling almost all the world's kids go through between the ages of roughly 6 and 21 offers almost no preparation at all for accomplishing things in the real world. The education we give our kids has become, essentially and unfortunately, "vocational training for academics." Since only a very small portion of our high school and college graduate ever actually become academics—but instead go into to companies and professions—the majority of our kids, rather than being able to immediately add value, have to start much of their education over once they find a job—no matter what academic skills they might have acquired.

It is not that academic skills are unimportant, it is that they are only a portion of what is needed. For the success of our people and our businesses It is terribly important that our education integrate effective **action, relationships and accomplishment** in the world along with whatever "effective thinking" it imparts. This means we need a new alternative kind of education that combines the academic tradition of education with the far older educational tradition of "accomplishment", which has *always* been part of work.

What now makes this integration even more imperative is the **growing empowerment and capabilities of our young peop**le— a key new phenomenon in the world.

Both forward-thinking educators and business people observe that **an important convergence is emerging simultaneously in both education and business**, one which offers great hope for the future. This is the movement to **real-world projects** as the basis of what both business and education does, and how they each organize. "The future of the world is about projects," says Professor Rita McGrath of Columbia Business School a noted business guru. "Education is moving to real, world-improving projects", wrote education visionary Marc Prensky in his latest, prize-winning book *Education to Better Their World: Unleashing the Power of 21st Century Kids*.

Others agree. "We don't do job descriptions anymore, says Geri Barrison, Offering Manager for IBM Talent Management Solutions---we do project descriptions." "My coaching is all done as projects," says famed executive coach Marshall Goldsmith. Business and military training is increasingly becoming project-based—consultant Antonio Nieto-Rodriguez promotes real-world project leadership and management in businesses around the world. More and more schools around the world, kindergarten through college, are moving to Projects. Not just to "PBL" and "academic project-based learning," but to Real-world Projects, designed and created by the students, that add measurable positive value to their families, communities and world. These projects enable kids to leave school not with just a with not just a certified set of skills and "competencies"— or a transcript of grades—but with a resume of their own, personal real-world accomplishments.

The number and extent of these Real-world Projects is now becoming substantial, and will soon begin having a measurable effect on human progress. I once more encourage you to check out the over 100 real-world projects accomplished by students and student teams around the globe that are highlighted in the free database at **btwdatabase.org**.(The database is also available on iPhone and Android). These projects are happening at all grade levels, pre-K--University, and across all subjects.

Real-world Project / Empowerment Education, the emerging new worldwide education alternative, offers a way to accelerate the move to projects on both the business and education ends, to integrate them, and to have each one serve the other. It is a new way to build, through projects, a growing and eventually seamless integration of our schools and businesses.

Once school kids are doing projects on a regular basis—in a huge variety of self-selected areas—companies can be searching for useful projects they currently don't have the time and/or resources to do, and posting these for students to undertake, at various levels, as part of their education. Imagine, for example a CIO taking the bottom 2/3 of her to-do list—most of which she will never get to—and farming them out to student programming teams, with recognition (and possibly compensation) to those who succeed. Imagine school kids at all levels doing worldwide marketing surveys and creating youth-based plans and presentations for companies. Imagine a CEO sending out an annual list of company problems for students to tackle (this is already happening in at least one instance).

Competing to complete such projects involves students' learning a lot more than just "project management skills"— important as those are. It also involves their trying out roles and seeing where they are each most comfortable and can make the strongest and most unique contributions. It allows students to create or undertake projects with larger goals: from community improvement, to the UN's Sustainable Development Goals, to company strategies. And it allows students to experience

various types of projects—from those that require more knowledge, to those that require more assumptions.

"Changes," Professor Rita McGrath writes, "are often gestating for a long period before they actually turn up at our doorstep. What that means is that we can prepare and take action ahead of time before these disruptions land." Now is the time to begin preparing for this by creating end-to-end Real-world Impact / Empowerment education systems. Imagine if in the coming decades our new hires began showing up in our companies and organizations with a resume of decades of real-world project experience and accomplishment accomplished while in school. Wouldn't that look different!

We need to begin trying new things, and here's an example:

IV. A Challenge to the World

(Chapter 2 from *Education to Better Their World: Unleashing the Power of 21st Century Kids,* by Marc Prensky)

From the book published by TC Press, 2016

Imagine reading or hearing about the following decree from some country's Department or Ministry of Education at the end of a school year:

———

In the coming year, education in [our country] will be completely new and different. It will not be about subjects and grades at all. Education will be about—and only about—improving our country and our communities.

During the entire year, every student and every teacher in our country will focus all their efforts on a series of real-world projects— projects that make our country a better place in some way.

We will not define or create these projects—the students and teachers will. Some may do so as classes, others as teams of students and teachers within and across classes—and, when possible, even countrywide. To get approved and started, projects will need to meet only one criterion: "Show us how this will improve some aspect of our country."

Each project will create its own very specific goals, which can range from improving a neighborhood's appearance or function, to improving a community's infrastructure, preserving part of our country's history and heritage, helping out local government and regulators, making life better for our less fortunate, building new relationships between people in real (and online) communities, adding or improving technology, and to what we hope will be many more good ideas. The only limit is the creativity and resourcefulness of the teams. Projects can last for weeks (e.g., "Let's turn that ugly piece of land into a community garden"), or months (e.g., "Let's create the best Wi-Fi in the country in our school and/or neighborhood"), or the entire year

(e.g., "Let's stop or slow the increase of some disease in our community"). Students may do several projects over the course of the year. Projects will be based entirely on applying the passions of team members to helping the country in whichever way they think best, and they will need to produce positive results and progress toward their ultimate goals within the year. Teams can be teacher driven, student driven, or both. Teams can enlist the private sector, government agencies, or nongovernmental organizations (NGOs) as partners in creative ways.

Every student and teacher in our country will participate. There will be little structure and regulation—we count on the creativity of our students and teachers to set this up and make it work. Only minimal guidelines will be promulgated. Everyone now has the summer to think about this. By the end of the first month of school, we expect every teacher and student to have created or signed up for their first team, and to have begun their projects.

We will create a website for keeping track of all the projects, and make sure every school can access it by either computer or phone. Completed projects will be evaluated by online voting as being either: (1) something that made the country better (which we expect will be almost all of them), (2) something that made the country outstandingly or exceptionally better (perhaps 10% of the projects), and (3) projects that did not succeed in improving the country, with recommendations on how to change them so that they do (we hope this number will be quite small).

This initiative's motto—and our country's educational mission for the next school year—will be this and only this:

You can make our country better—surprise us with how much you—and we—can do.

———

Now imagine this had actually happened somewhere, and it is a year later. What might be the result?

- Would that country have improved?
- Would those in charge now have a great many ideas on how to make the country improve even more the following year?
- Would the country's students, having completed these nation-and community-improving projects, be better off in terms of their self-confidence, effectiveness, enthusiasm, and participation in their education?
- Would the country's teachers be better off in terms of their enthusiasm and participation?
- Would students have learned lots of useful and relevant information by seeking it out on their own to help their projects?

Or, would it all have become a big mess, with the kids just losing out from missing a year of academic instruction?

I don't know the answer. But if I had the appropriate power, I would do the experiment. What we are doing today as K–12 education does very little to benefit and improve our kids, or our communities, countries, and world, compared to what it could do. We need to do better.

Could It Happen?

There are some who doubt that a challenge like this, even if accepted, would produce much change at all. Their main argument is that people like and expect to be "told what to do" and not to act on their own toward goals they set themselves. In a great many places, these people argue, neither our students nor our teachers are ready for the concept of "agency"—that is, of taking responsibility for improving their own world. For people like this, it is a huge and difficult change in perspective.

But I think a lot more kids are ready than most think.

"Don't Experiment with *MY* Kid"

If a minister (or someone else in authority) did initiate the challenge described above, he or she would no doubt have to face hordes of angry parents shouting things like, "Don't experiment with *my* kid!" or "I want my kid to have the exact same education I did (only better!)." Many parents are already shouting this today.

Were I that minister (or superintendent, or whatever) my answer to those parents, would be this:

> "I understand your concerns, but we *have to* experiment and find a better way. Your kids live in a new world that is very different from the one our generation grew up in. Today's young people are far more empowered than kids were in the past—they have enormous new capabilities that kids have never had before. We truly don't yet know how to best educate these empowered kids in their new environment. But we do know that our current education—even with marginal improvements—is no longer working as it used to. So *not* to experiment to find better ways to educate these kids would be irresponsible. I'm sure you are all responsible parents—and I'm a responsible educator—so let's get on with our experiments, because we are all in a new age."

Our New Age of Exploration

For roughly 200,000 years, up until more or less the end of the first millennium (that is, somewhere around 1000 A.D., very approximately) humans were agricultural animals. Almost everyone in the world was a farmer or herder of some kind. Humans had a very long agricultural age during which all kids pretty much knew—with only the most minor exceptions—that they would be doing the same agricultural and fieldwork as their father or parents. In what we now call the first millennium A.D. most of the world's people were still in that stage.

The following millennium—the second millennium that has just ended—was different. It was an age, particularly in its last centuries, of huge construction and development. During this millennium, our great cities were expanded, industrialization was born, great inventions were created, and great infrastructures were built. The kids who grew up in the second millennium grew up in an age of building. It was, as well, an age of discoveries, but only for relatively few individual explorers and intrepid pioneers.

We are entering, in this so-called third millennium, a new age of exploration—one far different than what we saw in the past. One of the biggest differences is that now almost everyone can participate in the explorations and discoveries of their times. Kids who grow up in the third

millennium will explore and not just the Earth, but outer space. They will explore and understand the human mind and brain as never before, and they will explore the new kind of worlds—digital and virtual—that are still being born. They will help solve the problems that our planet and our species face, as people never could in the past.

What is most exciting is that with the new alternative of **Real-world Impact / Empowerment Education** kids can now start these processes of exploring, solving the world's problems, and making their world a better place in their early and formative years, instead of waiting to become adults before doing so. That is a big change for all of us.

I would like to speak to anyone currently involved in Real-world Impact / Empowerment education of any sort. Please contact me at marcprensky@gmail.com.

For more detail on this alternative **Real-world Impact / Empowerment education** see my latest award-winning book, **Education to Better Their World: Unleashing the Power of 21st Century Kids** (Columbia TC Press, 2016), or contact me at **marcprensky@gmail.com**.

Marc Prensky is an internationally acclaimed speaker, author, and "practical visionary" in the field of education. Coiner of the term "Digital Native," Marc now promotes "civilization-level change" in global education, championing an emerging new "empowered kids bettering their world" education paradigm that more directly benefits both students and the world they live in. Marc has spoken in over 40 countries, authored seven books, and published over 100 essays; his writing has been translated into a dozen languages. He is currently the founder and Executive Director of the ***Global Future Education Foundation and Institute.*** *Marc's latest book,* ***Education to Better Their World: Unleashing the Power of 21st Century Kids*** *(Columbia TC Press, 2016), won the 2016 FOREWORD INDIES Book of the Year Awards GOLD PRIZE FOR EDUCATION. Contact Marc at marcprensky@gmail.com.*