



The Fourth R: Readiness

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Writer and activist Arundhati Roy² sees “*the pandemic is a portal, a gateway between one world and the next. We can choose to walk through dragging the carcasses of our prejudice and hatred, our avarice, our data banks, and dead ideas, our dead rivers and smoky skies behind us. Or we can walk through lightly, with little luggage, ready to imagine another world. And ready to fight for it.*”

As much as we all want COVID-19 behind us, returning to the status quo in education would be a colossal lost opportunity. This article explains student disengagement and lack of readiness for postsecondary training and employment. Then it offers a lens to reimagine public education to assure students leave school **ready** to create a great life and, in their own ways, make the world better.

“... a sinking feeling that they were led astray and were not ready for life ...”

Pre-pandemic, two in five (40%) school leavers, even those with degrees, failed to transition smoothly from school to a good job. Many began their career unemployed or in a precarious, low-wage, no-benefits job unrelated to their studies and interests, with a sinking

¹ <https://www.philjarvis.ca>

² <https://youtu.be/ALN3UkxXA8g>

feeling that they were led astray and were **not ready for life beyond school**. Some spend a decade or more unsure if they will ever land a ‘good’ job, pay down student debt, buy a house, a car, or build a family and the life their parents and society expect them to. Those now in their first year beyond school are facing even more COVID-19 inflicted danger, difficulty, and disappointment.

*Failure to launch*³ from school to a good career is usually regarded as a personal failing, one brought about by a lack of self-discipline, poor planning, or an overall sense of entitlement. In most cases, the cause is inadequate *life-readiness*. Life-ready students leave high school with a sense of direction and purpose, and the confidence, grit, and perseverance to achieve their goals equipped with self-awareness, self-management, social awareness, decision making, and interpersonal competencies.⁴ Failure to graduate life-ready students is a societal issue, one that impacts all of us. The solution is a re-imagined education system that produces graduates who step confidently and purposefully from high school to post-secondary studies, employment, and other life roles. To achieve this, schools must not only be *for* students, but *about them*, and *by them*, guided by liberated teachers and administrators.

Pre-school children often role-play adults, for example in nurturing dolls, driving fire trucks, being super-heroes, nursing, etc. In school, they are admonished to stop daydreaming about their future and focus on the day’s prescribed learning objectives. But dreams are the fuel of creative brains and an essential form of planning. Recent advances in neuroscience tell us that for learning to be meaningful and retained, it must be emotionally relevant and *personal*. Acknowledging and encouraging kids’ dreams about future career and life roles, however transient, fanciful, or unattainable they may seem to adults, makes school personal and unlocks students’ creativity.

Why is creativity important? With artificial intelligence, smart machines, and robots replacing humans in predictable, repetitive tasks, the uniquely human capacities for imagination, empathy, creativity, social and emotional intelligence, are final frontiers for humans. Creativity is the lifeblood of an innovative society. It is a natural, expandable, and renewable resource. Adolescent minds have the innocence, naiveté, curiosity, emotional and social drive to imagine and explore new solutions to old problems that can transform communities and may even save our planet.

Student Disengagement

Rather than nurturing creativity, dogged adherence to the curriculum can stifle it. Nearly eighty percent of primary students are emotionally and intellectually engaged in school. By high school, engagement in academics plummets to under forty percent. Without personal context, not many students see personal relevance in factoring polynomials or memorizing Shakespeare. Most eventually give up asking why they must learn the curriculum and, on faith but without heart, do their best to live up to their teachers’ and parents’ expectations. Among those whose engagement wanes most are students with high entrepreneurial potential - *our future job and wealth creators*.

However, when the curriculum is connected to students’ dreams, it takes on a completely different meaning and becomes personally relevant. Imagine a student who wants to make wealth distribution more equitable. Teaching her the power of algebra in this context becomes extremely meaningful to her. Or imagine connecting an aspiring writer with some of history’s most influential storytellers. When learning is connected to student’s dreams, engagement, motivation, and creativity flourish.

³ <https://cew.georgetown.edu/cew-reports/failure-to-launch/>

⁴ <https://www.redefiningready.org/life-ready>

Students have years to reflect on whether teaching could be their *calling*. They have few role models and rare opportunities to learn about the vast spectrum of career possibilities beyond teaching. In the absence of more viable career navigation clues, they make postsecondary program choices based largely on academic subject preferences. But the rigid, timeless taxonomy of academic subject silos bears scant resemblance to the diversity, complexity, and chaos of change in work and life roles beyond school.

Students are in classrooms from primary school until they enter the workforce. But school is designed to prepare them for university, not the workforce, or life. Students receive persistent cues from teachers, counselors, and parents that if they *settle* for anything ‘less than’ university they will disappoint. This well-intentioned advice is based on deeply ingrained but increasingly flawed perceptions of the relationship between lifetime earnings, status, and job satisfaction. It leaves many young adults in debt and no closer to a ‘good’ job. More and more university graduates eventually return to community college or a vocational school to earn credentials that will open doors to good jobs.

Society does not need all young people to go to university. Recent projections indicate that only twenty-four percent of the jobs to be filled between now and 2024 require an undergraduate or graduate degree.⁵ Alternatives like diploma and short-term certificate programs at community colleges, vocational schools, apprenticeships, specific occupational training, industry and professional association certifications, and the military can lead to good jobs in sectors hungry for new talent years sooner, with less or no debt. From a return on investment (ROI) perspective, these options demand consideration. Once established in a satisfactory lifestyle, university studies remain an option lifelong, as do libraries, Google, YouTube, Wikipedia, etc., for those who want to learn for self-improvement or for the pure love of learning.

"76% of projected job vacancies do NOT require a university degree or heavy student loan debt."

This winning “*return on investment*” formula only benefits students who are aware of *all* of their career options. Teachers are not taught how to help students explore careers, especially the bewildering array of non-university track careers. That task is relegated to: 1) school counselors – university graduates themselves – who heroically, and hopelessly, triage the academic, social/emotional, and career challenges of hundreds of students each; or 2) to computers. As a result, students exit high school unaware of the many viable shortcuts and ‘on-ramps’ leading to good, secure jobs and fulfilling long-term careers.

A Narrow Definition of Success

Many are the casualties of an elitist education system that celebrates students who receive scholarships to the best universities and ignores outstanding apprentices in paid learning programs who have begun good careers, debt-free, years earlier. In February 2020, just before the pandemic, the NEET (Not in Education, Employment, or Training) rate for 15 to 29 year-olds was 12%. This rate rose to 18% in March and raised again to 24% in April 2020, representing 2 million Canadians⁶. A further 2 million are *underemployed* or *misemployed* in jobs unrelated to their education or interests.⁷ Many

"Many young people are casualties of our elitist education system."

⁵ 3+ Economic Development Corporation, 2019, Strategic Labour Force Development Plan for Greater Moncton and Southeast New Brunswick.

⁶ <https://www150.statcan.gc.ca/n1/daily-quotidien/200924/dq200924c-eng.htm>

⁷ Atlantic Canada NEET Research Report, April 2020, Employment and Social Development Canada

carry onerous student loan debt. These “*opportunity youth*”⁸ are anchors to prosperity for their families and communities. Raising them from depression, despair, and dependency, not to mention their parents’ basement or the street, assures a more prosperous future for the entire community.

Almost everyone knows a young person who is lost and adrift. The economic and human costs are staggering. Lost productivity, juvenile justice, prisons, social assistance, substance abuse, detox, rehab, mental health, broken families – total billions of dollars each year. The human costs, measured in pain, despair, disappointment, and shame are greater.

“The economic and human costs are staggering.”



Lack of intelligence does not explain the dropout phenomenon. Most dropouts feel out of place in academic classrooms, are bored, or are facing personal or family challenges beyond their capacity to cope. According to Howard Gardner,⁹ only about 20% of students excel in the two of his eight *multiple intelligences*¹⁰, *linguistic* and *logical-mathematical* that are the focus of academic curricula. Famous high school dropouts include Richard Branson, Nicole Kidman. Charlize Theron, Tom Hanks, Simon Cowell,

John Lennon, Arnold Schwarzenegger, Michael Wekerle, Jack Kent Cooke. Millions more enjoy successful, though less conspicuous, careers in trades, technology, clean energy, health care, and entrepreneurship.

Students who excel in Gardner’s six other intelligences can feel frustrated, inadequate, or even ‘dumb,’ despite being exceptional in sports, music, entertainment, art, coding, training animals, mechanics, etc. Gardner would say, “It’s not *if* you are intelligent, it is *how* you are intelligent.” *Musical* (Beethoven) and *kinesthetic* (Michael Jordan) *intelligence* prodigies, and people with highly developed *interpersonal* (Oprah Winfrey) or *intrapersonal intelligence* (Dalai Lama) can appear average or lower when tested against only two of the multiple intelligences.

Are students who struggle with academics inadequate? Or is a system that expects all students to grade at university prep levels in only the two academic intelligences focused too narrowly? Society rewards non-academic intelligence handsomely. Compare, for example, the income of successful rock and movie stars, news anchors, professional athletes, CEOs, entrepreneurs, real estate brokers, hedge fund managers, and lobster boat captains with the income of successful educators. In the real world, it takes an interdisciplinary approach to solve problems. We need to help young people develop all of their intelligences so they can contribute to real solutions to the big challenges facing society.

⁸ <https://aspencommunitysolutions.org/who-are-opportunity-youth/>

⁹ <https://youtu.be/iYgO8jZTFuQ>

¹⁰ <https://www.simplypsychology.org/multiple-intelligences.html>

The Neurosciences and Education

Students are expected to learn the answers to thousands of questions it never occurred to them to ask. Most cannot recall the answers for long after the exam. The big, *personal* questions that engage adolescent brains are:

- *Who* am I now, not *what* will I be?
- What are the real-world issues I care about?
- How can I do my part to make the world better?
- Why am I here? What is my purpose?
- What are my unique strengths and talents (*superpowers*)?
- How can I be happy and healthy, love, and be loved?

These questions are inappropriate for multiple-choice exams. Still, young brains thrive on them. Adolescence (ages 10 to 25) can be a golden age for innovation and creativity. This is a period of tremendous brain malleability and neuroplasticity, the terms scientists use to describe the brain's intense sensitivity to its environment and its ability to reorganize itself by forming new neural



connections.¹¹ In supportive, nurturing, and purposeful environments all adolescents, even those with learning and physical challenges, have within them the capacity to make meaningful contributions, if not prodigious accomplishments. If he or she wants to badly enough, and works hard enough, long enough, a person with no arms can hold a paintbrush in their teeth or between their toes and produce amazing works of art.

The *National Academy of Science*¹² suggests it might be unethical to continue to use the traditional curriculum and lecture approach when we have robust evidence from many studies that collaborative, project-based learning is much more effective. Listening to lectures doesn't stretch most students to push their boundaries. Collaborative, supportive, personalized, project-based learning does, especially when success is measured against their dreams, not dry, pre-set, impersonal teaching standards, rubrics, and grades.

Single-mindedly undaunted by failure after failure, infants learn to stand, walk, run, and speak a foreign language in their first two or three years of life. If school seemed as personal, relevant, and compelling to kids as real life, one can only imagine what could be accomplished in 12 to 16 or more years of education re-imagined through a collaborative *learning* lens rather than a broadcast *teaching* lens.

We remember, lifelong, the school play we performed in, the robotics project we 'aced,' writing for the school newspaper, the entrepreneurship project, skills competitions, financial literacy challenges, student exchanges, youth service, great friendships, first romance. Art, music, and physical education engage adolescent bodies *and* brains. Whether skateboarding, playing music, chess, hockey, doing crossword puzzles, or hacking, the brain gets better at whatever it focuses on long enough. Neurons that fire together wire together.¹³

***"Neurons that
fire together
wire together."***

¹¹ Laurence Steinberg, Ph.D., *Age of Opportunity: Lessons from the New Science of Adolescence*, 2014 (<http://www.laurencesteinberg.com/books/age-of-opportunity>)

¹² <https://www.sciencemag.org/news/2014/05/lectures-arent-just-boring-theyre-ineffective-too-study-finds>

¹³ (<https://www.simonandschuster.ca/books/Why-Do-They-Act-That-Way-Revised-and-Updated/David-Walsh/9781476755571>)

We must create environments for students to discover and pursue what gives meaning and purpose to their lives and grows their brains, thus their capacities.

Adolescents need to know they can tap unimaginable resources and potential within. All of us were born with a wondrous, personal ‘head-held’ device capable of imagining *anything*. Even more remarkable, it can *grow and reorganize itself* to master what we imagine. We harness our potential and grow our brains by 1) envisioning and believing in our dreams, 2) persistent, deep practice that enhances neural pathways, and 3) supportive, patient coaching from people who care and believe in us. We must do our best to grow the unique strengths of each student. Force-feeding the same pre-determined, age-based, arbitrary subject-matter to all causes stress, takes far too much time, and crushes curiosity and passion for learning.

Collaborative, Project-Based Learning

Adolescents' brains thrive on multi-faceted, collaborative projects about real-world issues like climate change, cultural tolerance, truth and reconciliation, reducing poverty and inequity, fairness, and justice. These issues force students out of their comfort zones to work together to create and present their solutions. Project-based learning is a ‘learn-by-doing’ curriculum that

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integrates core subjects with real-world problems that need to be solved and that students care about. Teachers work in teams to identify key standards and skills to be addressed. Then, they create engaging interdisciplinary, projects that center on a ‘big idea’¹⁴ with real-world connections that are challenging,

relevant, and meaningful to students. Local employers and community partners can play vital roles by helping align and connect projects to real industry and community challenges. Parents play all-important coaching and supporting roles.

Students work in teams to create outcomes that demonstrate mastery of learning standards and acquisition of key ‘soft skills’ such as critical thinking, collaboration, empathy, and communication. One of the most important aspects of project-based learning is a public presentation of the outcomes of the project. Assessment is based on the student's ability to articulate and demonstrate the content and skills learned. Progress is measured and assessed through traditional tests and quizzes, public presentations, exhibitions, and digital portfolios. Students who are fully engaged and committed to a project often out-perform standards and expectations.

"... the shift to collaborative, project-based learning is non-negotiable ..."

The late, great, Sir Ken Robinson insisted that the shift to collaborative, project-based learning is *non-negotiable* if education is to truly help students reach

their potential.¹⁵ Freedom from slavish adherence to pre-set curricula and test preparation allows teachers the freedom to guide each child's learning in awed recognition of the unique miracle he or she is.

¹⁴ The 17 United Nations Sustainable Development Goals (<https://sdgs.un.org/goals>) provide an excellent framework of ‘big-ideas’ around which collaborative learning projects can be designed. The World's Largest Lesson (<https://worldslargestlesson.globalgoals.org/>) provides lessons plans and videos for each goal that can be used at any grade and which fully engage students' brains.

¹⁵ (<https://www.edsurge.com/news/2017-02-23-kids-don-t-fail-schools-fail-kids-sir-ken-robinson-on-the-learning-revolution>)

We need to instill in students the confidence, courage, and creativity to try new ideas and reach higher. They will inevitably make mistakes, as we all did when we learned to walk and talk, and before we discovered that mistakes cost points and can lead to embarrassment and shame. Mistakes are a critical element of the learning process. They are how our brains grow. If we are not making mistakes our imaginations are not fully engaged. We are not being creative enough, and our brains are not growing. We are, in effect, on ‘*automatic pilot.*’

Career Guidance is Essential but Insufficient

Dizzying technology-enabled workforce and societal changes, recent advances in our understanding of brain development, and heightened focus on the importance of social/emotional competencies demand rethinking both teaching and *career* theory. The idea of actualizing a core self that exists at birth is giving way to the notion that constructing one’s self is a lifelong project with almost infinite possibilities. We are stories unfolding, dreams becoming, stars being born, not pre-cast entities defined by traits an assessment can identify.¹⁶

*If students get career assistance it is usually in the form of self-assessment of interests, personality type, or values - with minimal interpretation or follow-up - or résumé preparation. Career development is not point-in-time decision-making to choose one’s path for life. It is a **lifelong collaborative learning quest, supported by coaches, loved ones, friends, and allies, to construct our best possible future.** It is a quest to be the most and happiest we can be while being ready to adapt to the good and bad that blind-side everyone throughout life. The best preparation for a great career, and life, is a collaborative, project-based school system that graduates genuinely life-ready young adults.*

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Until we experience work environments first-hand and meet people doing what we imagine ourselves doing in the future, our career decisions are speculative and largely uninformed. Too many students succumb to the pressure to declare an arbitrary major then discover, after amassing debt and spending months or years on the wrong path, that their choice was wrong. Collaborative, community-based experiential learning projects, in conjunction with job shadows, internships, co-op placements, apprenticeships, part-time and summer jobs, and volunteering help students develop real-world knowledge, skills, and attitudes (character), and acquire relevant experience that informs their learning, career, and life decisions.

Brain development extends beyond school. A significant delay between graduation and securing a good job can precipitate mental health degradation. Precarious workers are five times more likely than those in secure jobs to be at risk of depression and three times more likely to report having an anxiety attack in the past month.¹⁷ Research from Sweden¹⁸ suggests precarious work has a ‘scarring effect’ on young people’s long-term mental health. Stress, unhappiness, and unhealthy home life are the biggest consequences of precarious employment.¹⁹

¹⁶ Mark Savickas, Ph.D., 2013, Career Construction Theory

¹⁷ (<https://www.thestar.com/news/gta/2017/03/20/precarious-jobs-scar-employees-mental-health-survey.html>)

¹⁸ (<https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-016-3358-5>)

¹⁹ (<https://ofl.ca/stress-caused-insecure-work-affecting-mental-physical-health-ontario-workers-survey/>)

In the *gig economy*,²⁰ temporary jobs are increasingly common with employers contracting independent workers for short-term, low-wage ‘gigs’ without benefits. To prosper in this new reality, young people need to learn entrepreneurial, social/emotional, and financial management skills. These include the creativity to imagine new ideas, courage, confidence, and communications skills to sell their ideas and initiative, grit, and team skills to make them happen. These skills will serve graduates well with *any* employer and in all facets of their life. Skills cannot be memorized. They must be learned experientially, by doing. They are best acquired and honed through collaborative, experiential learning projects from the earliest years of school.

Life is an endless balancing act of multiple, collaborative projects. Sports, friendships, work, driving, social or service clubs, vacations, romance, marriage, parenting, budgeting, social distancing, etc., are all collaborative projects. Time committed to work, for example, can conflict or compete with time for family, friends, and leisure. Those who collaborate naturally, and adapt to changing circumstances with resilience and confidence, are happier and more successful. In a better world, politics, civic engagement, and social networking would be more collaborative and less polarized and confrontational.

“Life is an endless balancing act of collaborative projects.”

Taking an exam is a *non-collaborative* (collaboration is cheating) project imbued with stress and fear for many. They can compel rote learning, but stress and fear impede authentic learning²¹ and brain development. On the other hand, *positive brain states*²² in supportive, friendly, and cooperative groups increase memory retention along with pleasure, motivation, perseverance through challenges, and resilience to setbacks. In most cases, the only genuinely collaborative school activities are extracurricular, and they are seldom graded. With academics, it is every student for him or herself, certainly at test time if not always. Traditional teachers see their classroom as their fiefdom, avoiding, if they can, collaboration with other teachers, let alone with students and their parents.

To prepare students for a lifetime of multi-generational collaborative projects in an increasingly diverse world characterized by accelerating change, public education needs to be one collaborative, multi-disciplinary project after another, involving as many students and community partners, from as many age groups, ethnic and cultural backgrounds, and viewpoints as possible. Fully engaged students’ brains can not only master academics sooner and better, they also become proficient with the essential and ‘soft skills’ they will need as adults. Armed with these competencies, and with confidence and purpose, students can become “*solutioneers*,” helping solve real problems in their family, community, and in our troubled world that need solving now. We need our students among the kids who will change the world in the next decade²³.

We will have ‘arrived’ at a collaborative, community-based education system when essential elements of traditional academic curriculum have been absorbed into collaborative learning projects at all grade levels and ***school is nothing but engaging, challenging, meaningful, supportive, collaborative learning projects***. If aspects of the curriculum do not ‘fit’ in the context of real-world issues students care about, ***they should be discarded***. Students with a personal

²⁰ https://en.wikipedia.org/wiki/Gig_worker

²¹ https://www.washingtonpost.com/blogs/answer-sheet/post/how-much-does-stress-affect-learning/2011/06/08/AGJctrNH_blog.html?utm_term=.0b2fe2a1048a

²² <https://archive.nwp.org/cs/public/print/resource/3555>

²³ <https://www.rd.com/list/kids-who-changed-the-world-in-the-last-decade/>

interest can delve into them when and if it suits them. If they are only in the curriculum as a precursor to a university program most students will never attend, they should be addressed in collaborative, community-based, learning projects *at university*.

‘Big Ideas’ for Collaborative Learning Projects

Students can learn everything they need to be *ready* for post-secondary training, employment, and adult life by engaging in collaborative learning projects that address the *United Nations Sustainable Development Goals*.²⁴ These are the ‘big ideas’ the entire world needs to address with a sense of urgency. Each of the goals below envelops multiple issues that apply *anywhere*. Educators at all levels can design collaborative, community-based learning projects around them, and, if they wish, connect their learning teams to others anywhere in the world. Exceptional learning materials on the UN goals, including engaging lesson plans, videos, and suggested projects, are available free at The World’s Largest Lesson²⁵.



Conclusion

As we pass through the pandemic portal, let us travel lightly and leave the carcass of the industrial age lecturing tradition behind. Everyone in the school, indeed in the community, is a learner. To solve real-world issues that require urgent solutions, all of us need to collaborate and support each other’s learning, in school and in life. If we do, the view on the other side of the portal will be spectacular!

²⁴ <https://sdgs.un.org/goals>

²⁵ <https://worldslargestlesson.globalgoals.org/>