

Essay 07

To Close the SKILLS Gap, Start with the LEARNING Gap

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The emerging jobs of today, tomorrow, and the future we cannot foresee will require the skills and capabilities that make us most human.

Take the common assumption about the kinds of skills that are least likely to be automated: Most believe that higher-order skills, requiring complex intellectual processing and extensive training, are least likely to be automated. To demonstrate the weakness in this assumption, let us consider two highly different jobs: Expert Radiologist and Construction Worker.

The Expert Radiologist undergoes a long journey of schooling, internship, residency, and often, a post-graduate fellowship in a subspecialty of radiology. The Construction Worker requires little-to-no formal education. However, radiology is already subject to far greater automation than construction, due to its primary reliance on analyzing and evaluating visual images and patterns; tasks completely performed by computers. In fact, robots programmed to assess medical scans out-performed expert human radiologists in a controlled setting.¹ How can this be?

Unlike the core work of a radiologist, which is highly predictable and often routine, the Construction Worker acts in an unpredictable physical environment, requiring human assessment and judgment, and physical navigation—activities inextricably linked to being human. It is primarily the routine nature of job activities and the predictability of the physical environment in which tasks are performed that predict a job's automation potential.² The possibility that automation could replace one-third to one-half of today's jobs as soon as 2020 is not new. What is much less known is that nearly half of all job activities performed across jobs, and at least 30 percent of activities in 60 percent of all occupations, could be automated. This is why understanding the specific activities associated with jobs can provide more detail on the future of work, and therefore, on the future of learning.

While we face the certainty of many activities integral to today's workforce becoming automated in the future and the fear of disappearing



jobs, we hear the loud voice of employers affirming that already today there aren't enough skilled workers to meet employers' needs globally. Interestingly, there is overwhelming unity around the kinds of skills most needed, and they aren't only traditional vocational skills, but competencies in activities supporting collaboration, communication, and mental agility.^{3,4,5} The kinds of activities least likely to be automated happen to be the same activities facing talent deficits! This could be seen as great news if we are prepared to close this gap.

Yet we have much to do to close this gap. On the positive side, global education reform efforts over the past decade are doing more to foster whole child and youth development, in order to strengthen core values and capabilities for life. On the negative side, education policy and practice reform aren't yet aligned to the activity gaps described above, and employers are relatively absent from education policy reform.⁶ Therefore, it is urgent and critical that efforts to reform and innovate education are linked to and aligned with workforce gaps and employer needs.

REFRAMING THE PROBLEM TO DESIGN THE SOLUTION

If breaking occupations down into their component activities can improve our understanding of workforce needs and heighten our awareness of what activities are needed to perform certain functions particularly well, could applying that kind of thinking to education reform help to improve learning outcomes? If we reframe the problem from a *Skills Gap* issue (usually linked to vocational skills training) to a *Learning Gap* issue (linked to strengthened competences for cognitive and socio-emotional learning that are fundamental to the skills gaps defined by employers), can we simultaneously strengthen life and livelihood trajectories? By reframing the problem as one largely stemming from a gap in learning, we aim to link education and employment by distributing ownership of, and leadership for, the solution across the education and employment sectors.

Momentum for addressing the Learning Gap is swelling: The U.N.'s Sustainable Development Goals highlight quality education and relevant skills for global youth and adults as major vehicles for strengthening economies and reducing poverty. They provide a blueprint for the education of the future—focused on responsibility, resilience, connection and creativity—and what the Brookings Institution rightly calls “*breadth of skills*.”⁷ While the goals underscore the need for cognitive competencies (litera-



cy, mathematics, science) they also reinforce the socio-emotional skills needed to succeed at the cognitive acquisition communication, critical thinking, problem solving, creativity, management of one's emotions. In addition, they reference life-long learning, starting with early year education through adulthood, and includes such themes as good citizenship, participation, sustainable development, and entrepreneurship.

There are three actions that employers, educators, and related stakeholders can do to close these gaps:

1. Align Workforce Needs to Education Reform, Keeping in Mind that Employers Seek “Whole Persons”

Policy reforms for education are rarely linked to those of the workforce, though they often have impact on one another. Furthermore, at the national level, surveying of employer-assessed gaps rarely feed into formal system-level education reform or drive curricula in informal settings. Employer engagement is good business: Having under-educated employees hurts firms' productivity.⁸

Creating a place for employers at the education reform table and vice versa can foster greater dialogue and influence in both directions. From employers to educators: Feedback on the kinds of activities required for employment success. From educators to employers: Feedback on how employers can move beyond traditional candidate and employee evaluation to better assess (and value) a breadth of skills targeted by innovations in pedagogies and curricula.

2. Adopt Whole-Child Approaches in Education and Teach Core Competencies

Numerous surveys of employers worldwide have identified common areas of core competence for the 21st century: *Critical thinking and problem solving*, based on asking the right questions; *collaboration and influence*, especially with one's peers and within diverse groups working across national borders on globally relevant problems; *mental agility* to adjust for changes and unknowns and to upskill quickly and as needed for one's career; *entrepreneurship* to identify and act on new ideas; *effective communication*; the ability to *access and analyze information*; and *curiosity*. Young people need to have a good grasp of their chosen content area, but they need broadly transferable skills that are often positioned and nurtured in the humanities.

These core competencies often overlap with needs for social and emotional learning (SEL). SEL enhances the capacity of young people to assimilate attitudes, skills, and behaviors to deal effectively with what they encounter in school and daily life, and include intrapersonal, interpersonal, and cognitive competencies.^{9,10,11,12} Categories of SEL skills include: Self-awareness, social awareness, self-management, relationship skills, and responsible decision-making. This is the foundation on which cognitive learning rests—a child cannot focus on the difficult tasks of learning to read and doing complex mathematics if they cannot manage their emotions or work within a team to investigate and propose a solution to a scientific study. Reinventing education systems around integrated, whole-person frameworks support families and children to be successful in education, work, and life, and mitigate the adversities that children often face, and can prevent success.

3. Close Learning Gaps for Teachers & School Leaders

We often overlook the criticality of teachers or principals in embodying changes we hope to achieve in and through learning. It is easy to understand why teacher training programs or classroom material cannot alone achieve profound transformation. When the teacher or principal has firsthand experience, and has directly benefitted from a truly holistic learning environment, she is an authentic role model and change champion. In addition, for experiential learning to be grasped, students need an empowered and skilled guide for the methodology, meaning that teachers and other educational leaders must integrate the importance of active learning and be able to demonstrate it from a place of firm belief in its value.

Given that schools are never separated from the community where they are located, teachers and principals who model active learning are not just educational leaders, they are leaders capable of transforming whole, interconnected communities by working collaboratively to dig up the roots of entrenched social problems that ricochet into education. Greater, looping partnerships are needed between teacher training institutions, schools, and researchers who generate evidence on what works (and what doesn't) to continue feeding the field of education with its accountability needs. Teachers would also benefit from hearing feedback from employers. This collaborative approach not only supports accountability from all parties, and supports adults' own development of critical competencies, but it seamlessly models expectations for students' progress,



behavior, and interaction by all who are responsible for their growth and development.

4. Invest in ECD – A Moral Imperative to Learn Early, and Learn Well

Early childhood hosts an extremely robust development of values, character, and a particularly important set of skills known as “executive functioning”—include working memory (hold, manipulate, and connect information over short periods), inhibitory control (mastery over impulses, resisting temptations, pausing and thinking before acting) and mental flexibility (the ability to adjust to changed demands, priorities, and perspectives, and to understand someone else’s point of view). *Executive skills in pre-school are more predictive of life outcomes than academic skills at that age.*¹³

Furthermore, quality early childhood care and learning can offset the lottery of birth. Children who are born facing the greatest, most extreme adversities—including poverty, violence, displacement, severe abuse, neglect, and marginalization—can develop resilience to mitigate their circumstances and to participate in the common good.^{14,15} Facing adversity positively (i.e. being able to thrive despite challenges) will only help children who face an unknown future. If the majority of the jobs needed by today’s teenagers remain a great unknown, what about the future facing today’s two-year-olds?

Creativity and improvisation, flexibility in thought and action, critical thinking and analysis, impulse control, the ability to interface with a diverse array of humans and robots are distinctively human. While it is unlikely that entire jobs will be replaced, what is most at risk is a great majority of the tasks within jobs. Those tasks that will remain will be more rewarding, but require an ability to learn fast, learn often, and connect with fellow humans, artificial intelligence, and technology in unprecedented ways. We would do well to strongly align workforce needs, which include thoughtful, active, and compassionate citizens, to education reform and learning outcomes.

Editor's note: Dr. Randa Grob-Zakhary is the Global Head of Education at Porticus and Jessica Hjarrand is Global Programme Manager, Education at Porticus. Porticus provides financial support to the Center for Universal Education.

ENDNOTES

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