ISSUE BRIEF: Q1 2020

HIGH SCHOOL & THE FUTURE OF WORK

BUSINESSFORWARD FOUNDATION
TWO PROBLEMS: RELATED, DEPENDENT, AND REINFORCING

WE CANNOT FIX HIGH SCHOOL WITHOUT PREPARING GRADUATES FOR THE FUTURE OF WORK.

WE CANNOT PRODUCE A FUTURE-READY WORKFORCE IF WE WAIT UNTIL YOUNG AMERICANS ARE IN COLLEGE OR AT WORK.
FOUR KEY POINTS

THE CHALLENGE

1. Our schools are failing

2. Poor schools hurt our economy

3. As work evolves, the gap between today’s workforce and good jobs grows

THE OPPORTUNITY

4. The future of work is a road map for education reform

- Automation can create more jobs here than it destroys
- We know what students need: basic technical skills, the ability to learn continuously, teamwork and good judgment, and self-reliance
- Internships and apprenticeships work
- More college isn’t always necessary
OUR SCHOOLS ARE FAILING
WE ARE FAILING OUR KIDS

LACKING THE BASICS

Only one in three 8th graders is proficient or above in math, science, or reading.

PERCENTAGE DISTRIBUTION OF 8TH GRADE STUDENTS, BY NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS (NAEP) READING ACHIEVEMENT LEVEL (2019)

- Advanced
- Proficient
- Basic
- Below Basic

AN INCOMPLETE EDUCATION

Only one in four high school seniors is “college ready” in math, science, English, and reading.

PERCENTAGE OF STUDENTS ACHIEVING BENCHMARK SCORE ON ACT (2019)

- English
- Reading
- Math
- Science

THE COST OF REMEDIAL EDUCATION

More than four in 10 first-year college students require remedial education. These additional classes cost students $1 billion/year. They also make it harder for students to graduate on time.³

PERCENTAGE OF STUDENTS REQUIRING REMEDIAL COURSES

- 68% of high school students who go on to community college
- 40% of undergraduates in 4-year colleges

*2015 DATA
THE ODDS ARE AGAINST THEM

Students with only a high school degree are twice as likely to be unemployed as college graduates.

A LACK OF UPWARD MOBILITY

Four-year college graduates earn 62% more per year than high school graduates, on average. A college degree is worth about $2.8 million in lifetime income.6

CHANGING JOB REQUIREMENTS

67% of all jobs in the economy require post-secondary education and training beyond high school.

UNEMPLOYMENT RATE FOR WORKERS AGES 25-34, BY EDUCATIONAL ATTAINMENT (2017)5

MEDIAN ANNUAL EARNINGS OF FULL-TIME, YEAR-ROUND WORKERS AGES 25-34, BY EDUCATIONAL ATTAINMENT (2017)7

POST-SECONDARY EDUCATION AND TRAINING REQUIREMENTS8

LESS THAN HS | HS DIPLOMA | SOME COLLEGE OR ASSOCIATE’S DEGREE | BACHELOR’S DEGREE OR BETTER

100% — 80% — 60% — 40% — 20% — 0% 1992 2000 2010 2019

HIGH SCHOOL GRADUATES COLLEGE GRADUATES

HIGH SCHOOL DIPLOMA BACHELOR’S DEGREE

$0 $10,000 $20,000 $30,000 $40,000 $50,000 $60,000
AN UNNECESSARY DIFFERENCE
African-American 8th grade students are three times less likely to be proficient in reading or math as white students.

DROPPING OUT
Students of color are twice as likely to drop out of high school than white students.

THE GAP BETWEEN RICH AND POOR
Students from affluent families are four times more likely to earn a 4-year degree than students from poor families.

IT’S WORSE FOR POOR AND MINORITY STUDENTS

PERCENTAGE 8TH GRADERS PROFICIENT IN READING AND MATH, BY RACE (2019)

ADJUSTED COHORT GRADUATION RATE FOR PUBLIC HIGH SCHOOL STUDENTS, BY RACE (2016-17)

LIKELIHOOD OF GRADUATING FROM 4-YEAR COLLEGE, BY FAMILY INCOME

NATIONAL RATES OF REMEDIAL EDUCATION ENROLLMENT, BY STUDENT GROUPS

BLACK students are 21% more likely to require remedial education than their white peers.
POOR SCHOOLS HURT OUR ECONOMY
WE'RE FALLING BEHIND AS A NATION

WE NEED TO SPEND SMARTER

Despite ranking 2nd in per pupil spending for K-12, the U.S. ranks 13th in reading, 37th in math, and 18th in science.¹³

The U.S.’s per pupil spending on K-12 is 35% higher than the average for OECD countries.¹⁴
IF WE CAN’T FILL JOBS HERE, THEY’LL MOVE OVERSEAS

STEM jobs are growing six times faster than non-STEM jobs. Today, employers have 3 million STEM jobs they cannot fill.  

In fast-growing economies, local schools cannot keep up with skilled-job growth.

As a result, employers in high-growth markets import workers from other states, leaving low-skilled workers underemployed.

Meanwhile, their universities import talent to fill STEM classrooms.
AS WORK EVOLVES, THE GAP BETWEEN TODAY’S WORKFORCE AND GOOD JOBS GROWS
“WORK” IN THE U.S. IS CHANGING

MORE ROBOTS

There are 3X more robots now than there were 20 years ago. There will be 9X more in 2030 than today. Workers will need to work alongside these robots moving forward.

NUMBER OF ROBOTS IN THE U.S.

1999 2019 2030
750,000 2,250,000 20,000,000

And MIT Economist Daron Acemoglu estimates that every new robot reduces employment by 5.6 workers.

MORE JOB CHANGES

The average American will have at least 12 different jobs between the ages of 18-50.

DIFFERENT KINDS OF JOBS

Jobs are quickly becoming more technology-intensive. Workers will need higher proficiency in science, engineering, and math than they have before.

85% OF JOBS THAT TODAY’S LEARNERS WILL BE DOING IN 2030 DON’T EXIST YET.
NEW JOBS REQUIRE NEW SKILLS

RESKILLING

40% of Americans are in occupational categories that could shrink by 2030. 54% of U.S. workers need reskilling. The length of training ranges from a few weeks to more than one year.

A high school diploma is no longer enough training to secure a job. Four-year, two-year, and certificate-granting programs provide a pathway to new jobs.

POSTSECONDARY EDUCATION IS KEY

A high school diploma is no longer enough training to secure a job. Four-year, two-year, and certificate-granting programs provide a pathway to new jobs.

“HUMAN” SKILLS GROW MORE VALUABLE

Workers will need to develop the skills that cannot be automated — and the skills that allow them to work with new technologies.

BY 2030, WORKPLACE DEMAND WILL INCREASE BY

99% of jobs created during the economic recovery went to workers with postsecondary education or training.

FOR TECHNOLOGICAL SKILLS

FOR CREATIVITY

FOR ENTREPRENEURSHIP
WE’re behind on worker training

We invest less than our competitors

We’re investing less than we did

Total public spending on worker training, as percentage of GDP (2017)²⁷

- Denmark
- France
- Belgium
- Spain
- Canada
- United States
- Japan
- Australia

Spending on worker training as a percentage of GDP²⁸

- 1993: 0.08%
- 2017: 0.03%
2.4 MILLION MANUFACTURING JOBS ARE AT STAKE

A DELOITTE STUDY PROJECTS OUR WORKFORCE WILL LACK THE SKILLS NEEDED TO FILL 2.4 MILLION NEW JOBS

2.7M
JOB OPENINGS CREATED BY RETIREMENT

+1.9M
JOB OPENINGS CREATED BY NATURAL GROWTH

=4.6M
MANUFACTURING JOBS TO FILL BETWEEN 2018-2028

ONLY 2.2 MILLION WORKERS CAPABLE OF FILLING THESE JOBS.

=2.4M
JOB GAP

IF WE CAN’T FILL THESE JOBS, OUR ECONOMY COULD LOSE $2.5 TRILLION IN OUTPUT BY 202829

PERSISTENT SKILLS SHORTAGES COULD COST THE U.S. $85 BILLION THIS YEAR, AND COULD RISK $2.5 TRILLION IN ECONOMIC OUTPUT OVER THE NEXT DECADE

SOURCE: DELOITTE
AUTOMATION IMPACTS WORKERS, REGIONS, AND INDUSTRIES DIFFERENTLY...

AUTOMATION POTENTIAL BY INDUSTRY GROUP

PERCENT OF WORKERS IN HIGHLY AUTOMATABLE JOBS BY EDUCATION LEVEL

SOURCE: BROOKINGS
...WHICH INCREASES INEQUALITY

GEOGRAPHY
60% of U.S. job growth through 2030 will likely be concentrated in 25 urban counties, while rural areas lose jobs.

ESTIMATED PERCENTAGE OF NET JOB GROWTH IN MIDPOINT ADOPTION SCENARIO (2017-30)31

SOURCE: MCKINSEY GLOBAL INSTITUTE ANALYSIS

RACE
11.9 million Hispanics and African Americans are projected to be displaced by automation by 2030.

PROJECTED DISPLACEMENT RATE BY RACE32

>15 0-5 10-15 <0 5-10
WHITE 22.4% 23.1% 25.5%
BLACK
HISPANIC

GENDER
Because women are heavily represented in health professions and personal care work, they are projected to capture 58% of net job growth between 2017-2030. This does not account for the fact that men are more heavily represented in “frontier” jobs involving cutting-edge technologies, which may position them for other jobs that have yet to emerge.33

42% MEN 58% WOMEN
THE FUTURE OF WORK IS A ROAD MAP FOR SCHOOL REFORM
STEP ONE: TECHNICAL AND DIGITAL SKILLS

Seven million job openings in 2015 were in occupations that required coding skills. But only 35% of U.S. high schools offer computer science classes. Programming jobs overall are growing 12% faster than the market average.

By increasing computer science and other STEM course work, we can help graduates succeed at work — and many of them can do so without college.
STEP TWO: CONTINUOUS LEARNING

The kinds of technical skills workers need are continuously evolving, so being able to learn quickly is essential.

Most jobs will not be automated out of existence, instead they will integrate new technologies to expedite existing processes, meaning workers need to quickly learn and adapt to new systems, softwares, and machineries.

They also need the ability to understand the engagement, interaction, and collaboration between humans and machines.

THE PRODUCTIVITY REVOLUTION IN STEEL DEMONSTRATES A TREND ACROSS INDUSTRIES

Consolidation and improved processes in the steel industry have increased productivity by more than 6 times since 1980.38

As the [steel] industry continues to introduce technological innovations, the profile of the workforce will evolve and require higher levels of education and training than ever before...the demand for engineers, computer scientists, business major, and skilled production workers is expected to remain strong.

- WORLD STEEL ASSOCIATION39
STEP THREE: TEAMWORK AND JUDGMENT

As automation eliminates simple tasks, it increases the value of “human” skills that robots and A.I. cannot handle.

CRITICAL THINKING AND PROBLEM SOLVING
CREATIVITY
SOCIAL AND EMOTIONAL SKILLS
EMPATHY
ENTHUSIASM FOR LEARNING
ABILITY TO EMBRACE CHANGE AND UNCERTAINTY

“Interpersonal skills are unlikely to be rendered obsolete by technological innovation or economic disruptions. In a changing workforce, it’s having a strong foundation in these versatile, cross-functional skills that allows people to successfully pivot.”

- WORLD ECONOMIC FORUM

“At its core, work in the future will be more networked, more devolved, more mobile, more team-based, more project-based, more collaborative, more real-time, and more fluid.”

- DELOITTE WHITE PAPER ON THE FUTURE OF WORK
STEP FOUR: SELF-RELIANCE

LESS THAN 13% OF AMERICANS HAVE PENSIONS

25 years ago, that figure was 38 percent.42

TODAY’S YOUNG WORKERS WILL NEED TO PREPARE FOR THEIR RETIREMENT

The percent of non-elderly Americans with employer-sponsored health insurance has dropped from 67.3% in 1999 to 58.4% in 2017.43
A PLACE TO START: INTERNSHIPS AND APPRENTICESHIPS

Business leaders understand the demands of the market in which they’re operating. No group is better suited to help train the employees of tomorrow before they enter the workforce. Their industry knowledge, when coupled with their ability to offer apprenticeships and internships, makes them the real leaders and experts.

More than 80 percent of U.S. companies that sponsor apprentices say that apprenticeship is an effective strategy for helping them meet their demand for skilled labor.44

For every $1 invested in apprenticeship programs, Canadian employers of all sizes and in every province can expect to receive $1.47 in return.45

In Switzerland, 70 percent of young people enter the workforce through an apprenticeship.46
REFERENCES


32. Ibid.

33. Ibid.


45. Ibid.

46. Ibid.