THE PROJECT ON WORKFORCE

HARVARD Kennedy School
MALCOLM WIENER CENTER
for Social Policy

STAKEHOLDER BRIEF 6

Preparing Students with the Skills to Navigate the Future of Work

In 2021, the Project on Workforce launched the College-to-Jobs Initiative, a multi-year research effort designed to examine the connections between postsecondary education and the workforce. The initial phase of research culminated in the College-to-Jobs Playbook, a comprehensive review of the evidence and implementation of programs that connect students to meaningful careers. Through our research, we identified six themes that warranted further exploration. This brief explores the sixth theme: preparing students with the skills to navigate the future of work. We convened expert discussion groups to dive into each theme and conducted additional research to produce memos detailing actionable recommendations for three main stakeholder groups in the college-to-work ecosystem: educators, employers, and policymakers.

Jump to Recommendations

New technologies are rapidly shifting the demands of the workforce and creating opportunities–and challenges–for students making the transition from college to jobs. Amid this technological disruption, colleges play a critical role in equipping learners with the skills and experiences they need to connect to, and navigate, the evolving labor market. In this brief, we identify actions that stakeholders can take to prepare students with competencies for the future of work.

Note: Technologies are evolving at a rapid pace, and the academic literature has been slow to keep up. This brief offers recommendations grounded in research, but the field needs to continue building the evidence base to fully understand the impacts of emerging technologies, education and training programs, and talent practices.

Challenges to Preparing Students for the Shifting Demands of Work

Rapidly changing skills requirements.
The current technological revolution is occurring at a speed and scale unlike other disruptions in the past.[1] Employers are continually updating skills requirements to match these emerging technologies, and executives estimate that half of the skills in the workforce will be irrelevant in two years.[2] Postsecondary institutions are often slow to adapt programming, giving rise to a mismatch between the skills taught in the classroom and those sought by employers.[3]

Difficulty measuring and certifying skills.
Skills, particularly foundational ("soft") skills, which are increasingly valued by employers, can be challenging to define, measure, and teach.[4] Teamwork, problem-solving, and communication, for example, have proven difficult to quantify and certify.[5] Across sectors, stakeholders have differing perceptions of how skills are defined, which further complicates efforts to standardize skills and assessments and promote alignment across stakeholders.

Insufficient career navigation support.
The demand for education and skills has steadily increased,[6] but there is a notable absence of coordinated career services to help individuals find and take advantage of aligned education opportunities. This leaves learners and workers on their own to navigate the siloed education and workforce landscape.

Inequitable access and opportunities.
Communities have unequal access to emerging technologies. Advances in artificial intelligence and other technological innovations run the risk of widening opportunity gaps across racial, geographical, and socioeconomic lines.[7]

Guiding Principles

Foster continuous learning and adaptation.
To respond to the rapidly evolving workforce, individuals will need to continuously upskill and adapt to changing needs. Programs should be designed to help students develop a lifelong learning mindset and agile approach to their careers.

Collaborate for skills alignment.
Close collaboration between colleges, industry, and policymakers can help ensure that the skills being taught in the classroom align with current and future labor market needs. Partnerships can look to develop short-term or non-credit skilling programs to directly connect to jobs.

Ensure inclusivity and equity in access.
Expanding access to education opportunities related to emerging technologies is crucial. Stakeholders should provide wraparound support and resources, including offering internet connectivity, clearly communicating skills information, and designing early career exposure programs for underrepresented populations in technology and other growing fields.

Prioritize foundational ("soft") skills.
By focusing on foundational skills like teamwork, critical thinking, and communication–which tend to be more durable than technical skills–educators can better prepare students for resilient careers as technologies change. "Human skills" are particularly important in the age of generative artificial intelligence, which can increasingly perform white collar tasks.[8]

Integrate emerging technologies into programs.
Education and training programs should integrate new technologies, like generative artificial intelligence, into coursework to prepare students to be critical users of those technologies in the workforce.

Recommendations

Policymakers

1 **Build a system of career services that helps individuals navigate college and work.**
Very little public funding is dedicated to helping people access education and training to develop new skills and navigate into good-paying jobs.[9] Federal and state governments should do more to invest in public systems and structures that connect individuals to college opportunities, particularly for workers who are at risk of or have been displaced by new technologies. State policymakers should leverage Workforce Innovation and Opportunity Act (WIOA) funds to support professionalized career coaching. Federal, state, and local authorities should collaborate to embed public career services, like American Job Centers, in areas where people may benefit from these services the most, such as in community centers, prisons, and colleges.[10]

2 **Provide funds for workers to acquire new skills required for the evolving job market.**
Policymakers should focus on creating a continuous learning ecosystem, ensuring ongoing access to education and training as technology evolves. Federal and state governments can launch grant programs or offer tax credits to help workers develop skills that align with the demands of the evolving job market.

> **EXAMPLE**
> In Singapore, the government provides citizens over age 40 with a $4,000 grant to enroll in approved education programs that teach AI-related skills. Additionally, Singaporeans over the age of 25 can access a $500 grant to learn new skills.[11]

3 **Support partnerships between employers and colleges.**
Partnerships between colleges and employers are crucial to designing programs that prepare students with valuable skills.[12] Policymakers can provide grants to industry-education collaborations that align training with in-demand, quality jobs. More information on employer-college partnerships can be found in "Stakeholder Brief #1: Strengthening Regional College-Employer Partnerships."

4 **Fund research to identify and spread best practices.**
Policymakers should support research around education and training programs and practices that integrate emerging technologies. This will help build the evidence base and encourage colleges and employers to invest in programs that leverage best practices to prepare students for the future of work. Moreover, developing the evidence base will enable policymakers to better allocate resources to proven models, fostering a more targeted and impactful approach to skilling.

Higher Education Institutions

Redesign curricula to incorporate relevant technology and foundational skills.

1 Incorporate the use of new technologies, like generative AI, into coursework.

To prepare students for the future of work, educators must embrace new technologies, like generative AI, and redesign classes and coursework to integrate those technologies. Educators should focus on spurring higher-level thinking so that students approach technologies with a critical mindset.

> **EXAMPLE**
> At the University of Virginia, Professor Richard Ross asks students in his statistics class to research theorems without AI assistance, then use generative AI to supplement their findings. Students are required to assess which findings are more thorough and clear. In his course on data visualization, students are tasked with manually creating web apps from code, and then employing AI to replicate their work. According to Ross, these methods help students think more critically about their work.[13]

2 Teach foundational skills, such as critical thinking and interpersonal skills.

While foundational skills–such as critical thinking, adaptability, and problem-solving–can be difficult to teach and assess, they provide graduates with the resilience and versatility they need to navigate the rapidly evolving workforce landscape.[14] Institutions of higher education must proactively find ways to integrate those skills into curricula, including through experiential and work-based learning opportunities. As scholars continue to research how to measure and assess those skills, colleges should incorporate and collect data on emerging best practices.

3 Design curricula to ensure that all students feel represented and engaged.

College leaders and faculty should ensure that programs incorporate diverse perspectives and provide support for students that face significant barriers to educational and economic success. For example, to support adult workers looking to reskill, colleges can build flexible on-ramps. This could be offered through short-term, stackable credentials or earn-and-learn programs. Colleges should address barriers to participation, like limited finances, and consider providing access to childcare services and online courses.

4 **Provide professional development for faculty to integrate new technologies into curricula.**
Higher education institutions should develop professor training programs to educate faculty on ways to teach and integrate new technologies, like ChatGPT, into their classrooms. Outside providers can support this effort. For example, aiEDU currently designs programs tailored to educate faculty on AI literacy.[15] Colleges can also establish communities of practice, providing dedicated spaces for faculty to exchange insights and successful technology strategies.

Engage industry to ensure curricula keep pace with evolving skill demands.

5 **Invite business leaders to serve as adjunct faculty.**
Practitioners bring invaluable industry experience and first-hand knowledge in-demand skills and emerging trends to the classroom. Colleges should invite business leaders in growing fields to serve as adjunct faculty or guest lecturers. Students will not only benefit from firsthand, up-to-date industry insights, but also gain valuable networking opportunities with professionals in the field.

6 **Organize regular employer advisory committee meetings to evaluate and update curricula.**
Advisory committees can provide ongoing assessments of curricula relevance and recommendations to better align programs with the field. Committees typically consist of employers, industry experts, alumni, and community leaders.[16] They should be held regularly and organized at the program level to account for different trends and needs across fields. Colleges should encourage employers that serve on advisory committees to commit to offering a guaranteed number of job interviews to graduating students each year.

7 **Build personalized career paths for students using emerging technologies.**
AI-driven assessments can analyze students' skills, strengths, and interests and develop detailed profiles to recommend and guide students along personalized career paths. Such tools can take into account up-to-date career information, including skills requirements, salaries, demand, and growth. Handshake recently launched an AI-assisted career guidance tool called Coco.[17] It is important that tools are paired with human support and that research be conducted on their impacts on economic outcomes.

Employers

Partner with educational institutions to prepare students to meet evolving labor market demands.

1 **Train educators on the latest tools and skills.**
Employers can provide insights into the latest skills and knowledge that are in-demand in the workforce. They can also help educate faculty and staff on recent industry trends and technologies, and support educators in developing or enhancing curricula.

2 **Host events at universities to share workforce trends.**
By hosting events on college campuses, employers can establish a pipeline of new talent, while educating students on evolving industries and jobs. Events may include workshops, seminars, guest lectures, or interactive sessions in which industry leaders share practical use cases, discuss challenges and successes they've encountered, and offer insights into the evolving skills required in the field.

3 **Design work-based learning programs that provide training in in-demand skills.**
Programs should provide hands-on, practical experiences for students to apply their academic knowledge to real-world scenarios with the latest tools. Work-based learning programs, like internships, apprenticeships, and co-ops, should be compensated to ensure equitable access. Find more recommendations for creating work-based learning experiences in "Stakeholder Brief #2: Expanding Equitable Work-based Learning Opportunities."

4 **Adopt a skills-based talent system that outlines the skills required for jobs.**
Implementing a skills-based talent system requires identifying and assessing skills for hiring and promotion processes.[18] To embrace a skills-based talent system, employers should work with managers to identify job-specific skills and clearly outline those skills in job descriptions, making it clear to potential candidates which tasks will be performed. Job descriptions should be reviewed for bias and clarity.[19] Adopting a skills-based approach helps learners identify the necessary skills for a job, thereby better informing their educational decisions to align with careers.

Additional resources

The Harvard Skills Lab.
The Skills Lab is defining and measuring concepts like teamwork, leadership and decision-making skills, with a focus on the changing demands of the labor market.

AI and the Future of Work, Stanford University.
Produces research on the impact of artificial intelligence and other digital technologies on the future of work.

Endnotes

1 Schwab, Klaus. "*The Fourth Industrial Revolution: What It Means and How to Respond.*" World Economic Forum, January 14, 2016. https://www.weforum.org/agenda/2016/01/the-fourth-industrial-revolution-what-it-means-and-how-to-respond/.

2 "*Navigating the Workplace in the Age of AI: How a Strong Focus on AI Skills Will Help the C-Suite Future-Proof Their Business, Their Workforce, and Their Own Careers.*" EdX, 2023. https://campus.edx.org/hubfs/B2B%20PDFs/edX_Workplace_Intelligence_AI_Report.pdf.

3 Craig, Ryan. "*America's Skills Gap: Why It's Real, and Why It Matters.*" Progressive Policy Institute, March 2019. https://files.eric.ed.gov/fulltext/ED600483.pdf.

4 Deming, David J. "*The Value of Soft Skills in the Labor Market.*" NBER, January 5, 2018. https://www.nber.org/reporter/2017number4/value-soft-skills-labor-market.

5 Heinrich, Carolyn J., and Susan N. Houseman. "*Worker Hard and Soft Skills and Labor Market Outcomes: A Lens through the Temporary Help Industry.*" W.E. Upjohn Institute for Employment Research, July 2021. https://my.vanderbilt.edu/carolynheinrich/files/2016/06/Worker-Soft-and-Hard-Skills_7.18.21.pdf.

6 Choitz, Vickie, Louis Soares, and Rachel Pleasants. "*A New National Approach to Career Navigation for Working Learners.*" Center for American Progress, March 2010. https://cdn.americanprogress.org/wp-content/uploads/issues/2010/03/pdf/career_counseling.pdf.

7 Brown, Michael, and Carrie Klein. "*Data Justice Now: Why We Need Technologies Built for Care and How You Can Advocate for Change.*" About Campus 28, no. 4 (September 1, 2023): 14–22. https://doi.org/10.1177/10864822231195579.

8 "*Generative Artificial Intelligence and the Workforce.*" The Burning Glass Institute and the Society for Human Resource Management, February 1, 2024. https://shrm-res.cloudinary.com/image/upload/v1706729099/AI/CPR-230956_Research_Gen-AI-Workplace_FINAL_1.pdf.

9 Fuller, Joseph B., Kerry McKittrick, Ali Epstein, Cole Wilson, Vasundhara Dash, and Sherry Seibel. "*Unlocking Economic Prosperity: Career Navigation in a Time of Rapid Change,*" November 2023. https://889099f7-c025-4d8a-9e78-9d2a22e8040f.usrfiles.com/ugd/889099_ccfbbc70b125467b8f8bb4109d85c3ff.pdf.

10 Fuller, Joseph B., Kerry McKittrick, Ali Epstein, Cole Wilson, Vasundhara Dash, and Sherry Seibel. "*Unlocking Economic Prosperity: Career Navigation in a Time of Rapid Change,*" November 2023. https://889099f7-c025-4d8a-9e78-9d2a22e8040f.usrfiles.com/ugd/889099_ccfbbc70b125467b8f8bb4109d85c3ff.pdf.

11 SkillsFuture Singapore. "*SkillsFuture Singapore.*" Accessed April 9, 2024. https://www.skillsfuture.gov.sg.

12 Leavitt, Melissa, and Elaine Leigh. "*Employer and Community College Partnerships: Models and Practices for Supporting Students and Strengthening the Workforce.*" Strada Education Foundation, 2023. https://stradaeducation.org/report/employer-and-community-college-partnerships-models-and-practices-for-supporting-students-and-strengthening-the-workforce/#:~:text=By%20putting%20student%20needs%20at,could%20achieve%20on%20their%20own.

13 Salman, Javeria. "*How Educators Are Using AI in the Classroom.*" The Hechinger Report, June 8, 2023. http://hechingerreport.org/how-educators-are-using-ai-in-the-classroom/.

14 Fuller, Joseph B., Kerry McKittrick, Ali Epstein, Cole Wilson, Vasundhara Dash, and Sherry Seibel. "*Unlocking Economic Prosperity: Career Navigation in a Time of Rapid Change,*" November 2023. https://889099f7-c025-4d8a-9e78-9d2a22e8040f.usrfiles.com/ugd/889099_ccfbbc70b125467b8f8bb4109d85c3ff.pdf.

15 aiEDU. "*aiEDU.*" Accessed April 9, 2024. https://www.aiedu.org.

16 Jyotishi, Shalin. "*Colleges Must Improve Their Employer Partnerships. Here Is How.*" New America, October 6, 2022. http://newamerica.org/education-policy/edcentral/colleges-must-improve-their-employer-partnerships-here-is-how/.

17 Handshake. "*Meet Coco: Your AI-Assisted Career Guide,*" November 8, 2023. https://support.joinhandshake.com/hc/en-us/articles/17467074261783-Meet-Coco-Your-AI-Assisted-Career-Guide.

18 "*The Business Case for Skills-Based Hiring.*" Opportunity@Work. Accessed April 9, 2024. https://opportunityatwork.org/wp-content/uploads/2023/09/STARs-Business-Case-for-Skills-Based-Hiring.pdf.

19 "*Skills-Based Sourcing & Hiring Playbook.*" The Markle Foundation, September 2023. https://www.markle.org/wp-content/uploads/2023/09/Skills-Based-Hiring-Sourcing-Hiring-Playbook.pdf.

Acknowledgements

The Project on Workforce thanks the members of the expert discussion group, whose insights informed this memo: Yuanxia Ding, Nithya Govindasamy, Justin Heck, Shalin Jyotishi, Dakota Pawlicki, Sheila Sarem, Joel Simon, Scott Solberg, Bill Turner, Aneesh Raman, and Ben Wildavsky.