

Reimagining education for today's complex and fast-changing world

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Joseph Haldane (center), chairman and CEO of IAFOR (the International Academic Forum), in October 2019. Credit: Virginia Tech

Many educators and employers agree there's a disconnect between the skills today's workers need on the job and what students are taught in school.

It's a complex problem that touches on K-12, [higher education](#), and industry. While finding solutions won't be easy, a group of more than 60 leaders from education and workforce development are looking to make headway.

In an unusually broad and comprehensive effort led by the Virginia Tech Calhoun Center for Higher Education Innovation, IAFOR (the International Academic Forum), and the Future Talent Council, extensive research was conducted into innovative programs that are making an impact, leaders from those programs were engaged, and recommendations on new ways to improve [educational practices](#) worldwide have been compiled.

The [resulting report](#), "Adaptive Lifelong Learning for an Inclusive Knowledge Economy," published

by Virginia Tech Publishing, is just one step in the process of looking to help shift traditional educational practice in new, more innovative and effective directions, those involved say. The group is already engaged in a next step for the project: recruiting teams to put the report's recommendations into practice on as wide a scale as possible.

"As a society, we've created a global knowledge economy, but only a small percent of the population is fully participating," said Thanassis Rikakis, executive director of the Calhoun Center. "There is a significant amount of people with rich and unique human skills who are not or cannot participate. What brought us all together for this project was the issue of increasing participation."

Rikakis first brought those involved together for an October workshop in the greater Washington, D.C., metro area before the group collaborated in greater detail on the report.

"It's designed to be an open-source project, so to speak," said Joseph Haldane, chairman and CEO of IAFOR, an organization that promotes international exchange, intercultural awareness, interdisciplinary discussion, and the creation and sharing of new knowledge. "That excites me and fits very well in the mission of what we do."

The teams that will take the project to its next stage are being set up in nine thematic areas. The areas touch on a wide range of educational and workforce development issues for people of all ages, ranging from K-12 to older adults already in the workforce. Areas also focus on technology's impact on learning and on such issues as how to best equip tomorrow's employees for the rapid pace of change they will have to contend with throughout their careers.

"We're all trying to predict a future job market that is increasingly unpredictable," said Daniel Kjellsson,

managing director of the Future Talent Council, a global membership organization of talent leaders from the educational, corporate, and governmental sectors. "What we do understand, however, is that talent development will most likely happen throughout one's professional life—and looking at that timeline right now we see gaps. We support more active and organic collaboration between educators and employers; a more strategic, thought-through, and governmentally supported approach to the educational investments made by each employer; and an increasing presence from the universities in our long learning lives. If I'm about to learn new skills for the duration of a whole professional life, it doesn't make sense to have to say goodbye to my best professors when I'm in my 20s."

Highlights from the report's recommendations include:

- Value a broader range of competencies, experiences, and knowledge from across society. Find ways to create more accessible learning paths and to solve complex problems by drawing from a more inclusive base of knowledge.
- Recognize that domain-specific skills, domain-general skills, and life skills work together to advance integrated professional and personal development. Weave these skills together in new learning pathways rather than just teaching them through parallel or disconnected tracks.
- Accept that people have different learning experiences, methods, and goals. Find adaptive approaches and employ more flexible curricula in order to meet learners where they are and take them where they aspire to go.

Michael Richey is associate technical fellow and chief learning scientist for leadership, learning, and organization capability for The Boeing Company. His company plans to host the next gathering related to the Adaptive Lifelong Learning for and Inclusive Knowledge Economy project. An aim is to get together in summer 2021, should the need for social distancing related to the COVID-19 pandemic ease by then.

"Advancements in artificial intelligence, robotics, and machine learning raise the questions of which tasks will be most affected and which will be relatively unaffected," Richey said. "What does this mean for education and retooling students with future skills they'll need? Time and content of the traditional education structure will not scale, and many university programs are ill-equipped to move us into in a digital economy, but Virginia Tech has reimaged a dynamic education model that prepares students with future-proof human skills that cannot be readily replicated or automated."

The gap between what is taught, when people are taught it within their lifespan, and what people need to know to thrive at work throughout their decades-long careers is widely recognized. Forward-looking educators and employers are making bold attempts to address it. One valuable thing the Adaptive Lifelong Learning for an Inclusive Knowledge Economy report does is compile numerous examples of innovative programs.

One example is Arizona State University's EdPlus initiative, which has leveraged technology and cross-sector relationships to try to expand access to higher education. One of the school's better-known methods of doing that is collaborating with Starbucks to cover the tuition cost of online bachelor's degrees for qualifying employees.

Juliet Greenwood, vice dean for educational initiatives at EdPlus, said she was attracted to the Adaptive Lifelong Learning project by its "focus on bringing together expertise across such a wide variety of sectors. I don't think I have ever participated in another meeting where I was sitting down with company executives so directly engaged in recruiting and human relations. Having that side-by-side interaction and engagement was something that was very attractive to me and a great learning experience. I think there is great opportunity in this initiative."

One of several forward-looking programs from Virginia Tech documented in the report brought together graduate students and working professionals in the housing industry this past summer. Known as Housing Camp, it was run out of the university's facilities in the greater

Washington, D.C., metro area. To allow both busy professionals and full-time students to tailor learning to their schedules, the program reimaged higher-education's traditional credit-hour billing system.

"We found a way to offer something that is very possible for a professional to do in basically a week- and a-half course but can also be combined with other modules to add up toward a degree," explained Andrew McCoy, the Beliveau Professor and associate director of the Myers-Lawson School of Construction, who also directs the Virginia Center for Housing Research at Virginia Tech.

"To pull something like this off you have to think in a really collaborative way across the university," Anne Khademan, who as presidential fellow at Virginia Tech worked closely with McCoy and others on the program. "The tools are there but you have to be creative and build internal partnerships, which can be hard. You also have to build partnerships externally. You want top notch professionals who are teaching the courses or serving as mentors."

The Adaptive Lifelong Learning for an Inclusive Knowledge Economy project dives into how the entire educational system, including K-12, can better prepare tomorrow's learners to succeed throughout their working lives. One participant in the project is Chip Blankenship, who found new ways to partner with public schools back when he was serving as CEO of GE Appliances.

"As CEOs, we always gave tons of thought to recruiting engineers and finance and HR folks from universities." Blankenship recalled. "We always thought that for manufacturing workers there would be more people than we needed, and that got out of balance."

Recognizing the problem, Blankenship and many other manufacturing leaders connected with the public schools in greater Louisville, Kentucky, to equip students with skills they needed to thrive in entry-level positions with strong career potential. Kristin Wingfeld continues to coordinate dozens of those partnerships for Jefferson County Public Schools.

"Our mission is setting up students for the fact that they need to be lifelong learners and their education doesn't end at high school or college," Wingfeld said. "I think this Adaptive Lifelong Learning project is a great way for us to see and learn how others are doing lifelong learning and what some other unique initiatives are out there across the country."

Scott Bess is head of school for Purdue Polytechnic High School, which launched in 2017 to help urban high school students prepare for post-secondary education in scientific and technological studies.

"We always have our antenna out for organizations that are willing to take a step and say 'Maybe there's a better way,'" Bess said while explaining what attracted him to the initiative. "In this project with Virginia Tech, it's a university saying we can do better and let's bring people together from around the world to talk about it. That's what was really impressive to me as a person and to us as an organization."

Purdue is a land-grant university, as is Virginia Tech. Starting in the 1860s, such universities were created out of a federal act that sought to expand the number of higher education institutions preparing people with practical, technical skills as a response to the industrial revolution and changing social dynamics. While that mission has evolved, and broadened, it does mean that universities like Virginia Tech have a special responsibility to adapt to society's changing needs, Rikakis said.

"Land grants of the 21st century should be tackling these hard questions head on," Rikakis said.

"That's why we were created. Increasing participation in the economy has always been part of the mission of land grants. However, the economy and society have changed, the participation needs to be broader and more diversified than ever, and the ways to increase participation need to be adapted."

Shari Garmise is executive vice president for the Coalition of Urban Serving Universities and senior vice president for urban initiatives at the Association of Public and Land-Grant Universities. She said one thing that struck her while

participating in the project was the comprehensive nature of what it was looking to accomplish.

"It's developing a roadmap by aggregating what is out there, trying to build a framework, and then building an infrastructure for change," Garmise said. "Where you often see this level of stakeholder connection is in a more regional space. You bring together K-12, higher education, and community groups. It's much harder to translate that range of stakeholder engagement at a national level and also with global players, too. This is pretty unique. ... It's an invitation to engage in the future of learning, and to be one of the authors of that future."

Provided by Virginia Tech

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