10 Insights

on Closing the Tech Skills Gap and Training the Workforce of the Future

ChatGPT is taking the world by storm, and it's a prime example of how fast-changing technology makes it hard for today's learners to keep their digital skills current. And artificial intelligence isn't the only technology field where demand is outpacing supply. There's cloud, blockchain, robotics, and of course cybersecurity: In all these areas, industry is struggling to meet the need for skilled workers.

The problem is severe. According to a McKinsey survey, 87 percent of companies worldwide say they have skills gaps, or expect to within a few years.

Academic programs that address these in-demand skills are vital to prepare the workforce of the future, and can be a differentiator for colleges and universities under pressure to recruit and retain students. In a recent industry fireside chat, *Campus Technology* spoke with Tony Holmes, practice lead for solutions architects at Pluralsight, about the emerging skills gaps, common barriers for learners, and strategies for integrating skills training into higher education programs.

1 | The skills gap is widening.

Some 75% of companies are building new products and features in the cloud, but only 8% of technologists have experience with cloud-related tools. In cybersecurity, the global workforce gap is daunting, with a shortage of some 3.4 million people. "About 28,000 tech or IT degrees were awarded in 2020," Holmes said. Even if all those people went into cyber, that would hardly scratch the surface of the problem. There's a selling point here for higher ed: "If your goal is to have an in-demand career with a lot of career opportunity and a great salary, you could do a lot worse than to pursue a technology degree."

2 | The gap spans all disciplines.

Cyber gets the lion's share of the headlines, but the skills gap touches nearly every discipline. Cloud, artificial intelligence, data analytics, DevOps — all suffer from major shortfalls. "Every single area of tech is crying out for talent," Holmes said. Schools that put an emphasis on areas such as cloud, data analytics, and data science will be giving their students a leg up.
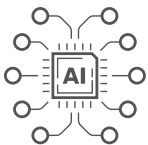
3 | Generative AI is going mainstream.

With the very public rise of ChatGPT, generative AI has roared into the mainstream. Schools have concerns, especially about students tapping AI to write their papers, but the pros may outweigh any potential cons. Novel tools should be embraced. Instead of fearing them, we need to think about how we can incorporate them into our workplaces, into our curriculums, and into our lives.

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practice lead for solutions architects at Pluralsight

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Rather than block students from accessing these tools, higher ed can focus on helping them master the skills to use AI responsibly.

4 | Address the challenges to upskilling.

Holmes cited Pluralsight survey data that shows students aren't always clear about the best path forward. This suggests a role for higher education, which can work in partnership with industry to chart pathways that will propel students forward, while also bringing needed skills to the marketplace. The speed of tech advancement also presents a challenge: With new tools emerging all the time, higher ed needs to emphasize continuous learning and on-demand learning models. "We want students to get into the habit of reaching out and grabbing knowledge adjacencies just when they need them," Holmes said.

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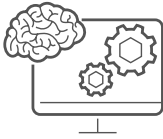
5 | Align with industry needs.

Higher ed can best help to close the skills gap by ensuring its offerings align with the most in-demand skills. School can best make students workplace-ready by "knowing what industry needs and providing them with that clear path, that roadmap," Holmes said. By partnering with industry to create programs that deliver a broad knowledge base, one that connects across the IT disciplines, schools can meet industry-specific needs while also training students to be creative problem-solvers in the face of a fast-changing technology landscape.

6 | Don't overlook industry-provided credentials.

Industry-provided training and microcredentials can play a vital role in closing the skills gaps, especially in high-demand areas such as cloud and cybersecurity. A microcredential earned in tandem with a degree gives employers an accurate way to gauge knowledge level right out of the gate. This in turn gives students the chance to enter the workforce at significantly higher salary levels. "That's a huge benefit for learners," and it can have "a significant impact on the recruitment and enrollment, when people see these outcomes," Holmes said.
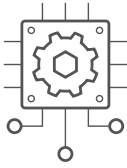
7 | Leverage outside partners.

With technology ever in flux, higher education may find itself "continually playing catch-up," Holmes said. Industry partners can help schools to keep up with those emerging technology trends, delivering the cloud labs, security labs, certification preparation and other tools that enable faculty to pivot as needed. Partnerships with industry enable higher ed "to become more agile and more nimble in responding to the needs of the student," Holmes said.

8 | Adaptable problem-solvers succeed.

Higher education can serve students well by emphasizing flexibility and agility. Given the constant state of flux in IT, technology professionals "need to be adaptable problem-solvers these days," Holmes said. Schools can support an adaptive mindset by emphasizing breadth of knowledge, encouraging students to pursue a wide range of interests alongside their specific subject-matter studies. "The more abstract and broad our knowledge base, the better we become at creative problem-solving and pivoting."

9 | Focus on tech fluency for undergrads.

Higher education can help to close the skills gap by incorporating an element of technology learning across the board. Because "every organization relies on technology," Holmes said, "every student, regardless of their field of study, needs to be tech fluent." That tech fluency will be key to workforce readiness, and it crosses all academic disciplines.

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10 | Tech apprenticeships help close the skills gap.

While there are lots of ways to glean IT skills, from classroom studies to microcredentials, Holmes said colleges can leverage a unique learning model in tech apprenticeships. With its hands-on learning opportunities, "the apprenticeship model is absolutely one of the ways that we need to look at, in order to be able to solve the skills crisis within our workforce today," he said.

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