

Trade and Transportation Talent Pipeline Blueprints: Building University-Industry Talent Pipelines in Colleges of Continuing and Professional Education

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Introduction

The adoption of transformational technologies in trade and transportation infrastructure and systems is creating a wide range of skills gaps and related workforce development challenges. These transformational technologies, along with economic and cultural shifts, are occurring at such a rate that there is a growing mismatch between workers and the necessary knowledge, skills, and abilities (KSAs) for in-demand occupations, which has largely been characterized as a “middle-skills gap.” However, a term like “middle-skills gap” fails to accurately document ways that occupational definitions and expectations are changing in the trade and transportation industry and beyond. This report proposes Talent Pipeline Management solutions that CSU campuses can facilitate in a transformational skills paradigm—a time in which entrants and incumbents need accelerated training and education to acquire the in-demand KSAs of today’s working standards.

Study Methods

This research project is a culmination of a literature review, labor market data analysis, and documentation of the researchers’ methodology in planning for a ‘proof-of-concept’ pilot program at CSULB. This project was initially proposed as something that could be offered to the CSUs as a resource for creating talent pipeline programming for the trade and transportation sector. The literature review required researchers to research what was being discussed in economic and workforce development journals both in and outside of the trade and transportation industry. Talent pipeline strategies have largely been discussed as a workforce solution to a growing “middle-skills gap” in numerous sectors because they largely activate cross-sector partnerships between education, industry, and government to

cultivate relevant KSAs in workers. This effort resulted in what is essentially a set of recommendations and resources for scalable talent pipeline solutions across the CSUs for trade and transportation education and training. The labor market data was compiled using Lightcast technology to provide CSU leaders with a recent snapshot of the most in-demand occupations in the trade and transportation industry. The data also shows how CSUs can use this data or conduct their own real-time labor market analysis to identify and target occupational demands in their regions. As a ‘proof-of-concept’ for talent pipeline programming, this report contains a methodology for a pilot program that the authors will launch at CSULB in Spring 2023, convening the College of Professional and Continuing Education, College of Engineering, and global infrastructure firm, Gannet Fleming, as partners in this effort.

Findings

One key finding of this report resulted from the labor market data analysis. A close review of the top 50 in-demand trade and transportation occupations—derived from labor market data available from June 2021 – May 2022—reveals a discrepancy between the “education level of employed individuals” and “education level based on posting requirements.” The percentage of job postings that now require a bachelor’s degree far exceeds the percentage of job holders with bachelor’s degrees or higher, which suggests that employers are actively seeking certain KSAs acquired in a university environment. This raises the question, what kind of training and professional development is the university uniquely qualified to provide? Another way of framing the question is, what kind of training and professional development is needed in addition

to the hard skills that are acquired through a two-year certification program? This finding confirmed there is a place for talent pipeline programming in four-year institutions. The authors identified that (Colleges of Professional and Continuing Education) CPaCEs specifically have capacity to provide accelerated short-term programming for KSA development and other professional competencies that employers are looking for.

Another key finding from this report resulted from planning the ‘proof-of-concept’ talent pipeline pilot program. The report breaks down, in detail, how CSU leaders can take the steps in facilitating and planning the programs themselves but, to get the ball rolling so to speak, CSU leaders need to assess their networks for willing and interested industry—and potentially government—partners to participate in the effort.

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Policy Recommendations

This report is meant to serve as a resource for CSU leaders, particularly interested staff and leaders in CPaCEs. CPaCEs already offer a number of industry-specific certification programs that target skills-based upskilling and professionalization. There are a range of trade and transportation degree and certificate programs offered at CSUs located throughout California, as documented in the report. This broad range of programmatic offerings represents an opportunity: CSU leaders can assess the champion instructors and subject matter experts working on their various campuses and establish a talent-pipeline infrastructure that can produce nimble responses to skills gaps created by rapid technological and socioeconomic change. Talent pipelines offered at CSUs could provide a valuable career bridge for students pursuing four-year and graduate degrees, and serving incumbent professionals through CSU-based talent pipelines would also be a way to increase enrollment of nontraditional student populations.

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To Learn More

For more details about the study, download the full report at transweb.sjsu.edu/research/2144



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