

FACT SHEET

Measuring the Effectiveness of Competency Models for Job-Specific Professional Development of Engineers & Engineering Technicians

RESEARCH PROJECT TITLE

Measuring the Effectiveness of Competency Models for Job-Specific Professional Development of Engineers & Engineering Technicians

STUDYTIMELINE

March 2015 –December 2018

PRINCIPAL INVESTIGATOR

Christopher Ahmadjian

NETCCONTACT

Hannah Ullman
NETC Coordinator
University of Vermont
Transportation Research Center
210 Colchester Avenue
Burlington, VT 05405
802-656-1306
netc@uvm.edu

MORE INFORMATION

Link to Final Report:
https://www.newenglandtransportationconsortium.org/wp-content/uploads/NETC_Final_14_1_updated-1.pdf

The New England Transportation Consortium, a cooperative effort of the transportation agencies of the six New England States, funded this research. Through the Consortium, the states pool professional, academic and financial resources for transportation research leading to the development of improved methods for dealing with common problems associated with the administration, planning, design, construction, rehabilitation, reconstruction, operation and maintenance of the region's transportation system.

The NETC is hosted by the University of Vermont Transportation Research Center.



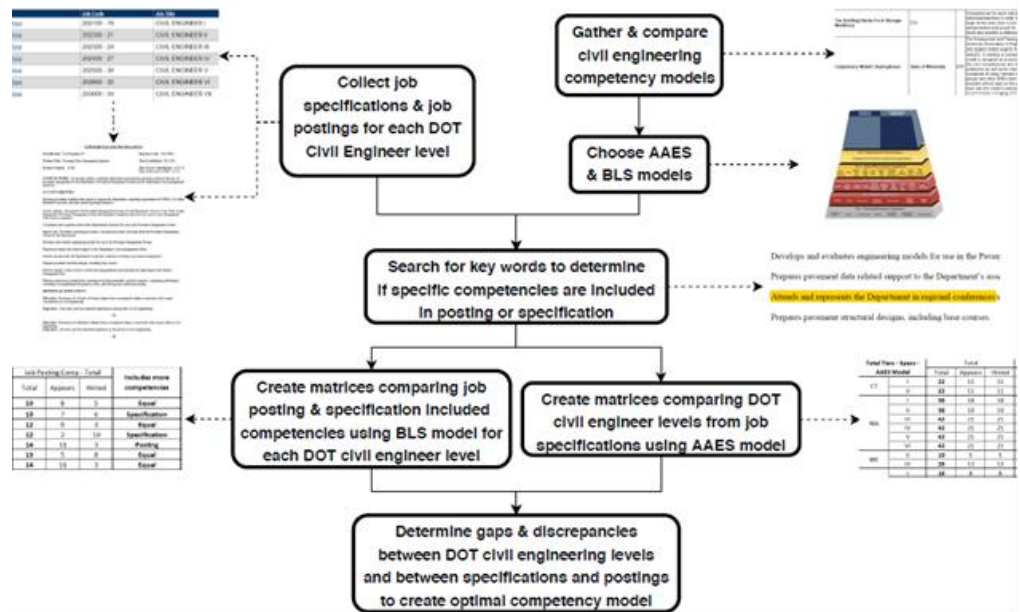
The UNIVERSITY of VERMONT

TRANSPORTATION RESEARCH CENTER

Introduction

As many within the current transportation workforce approach retirement and the industry transitions into the 21st century, there are two notable challenges: 1) the incredible wealth of institutional knowledge that will be leaving the workforce, and 2) the continued increase in the application of new technologies, skills, and knowledge of the entering workforce. A resulting impact of these issues is that the gap between old and new employee competencies and skills is widening; therefore, there is a specific need and opportunity to develop new job competencies which address these changes. This research provides an analysis of current job competencies and licensure requirements for civil engineering positions at the six DOT's within the New England region.

Methodology



Conclusion

Through the comparisons of job competencies, it can be concluded that several gaps (intentional or otherwise) in competencies exist, even in the highest level civil engineering position at a single DOT. These variances in engineering competencies show that each position is not covering the same skills and knowledge as the other; this can negatively affect some state DOT's as their civil engineering workforce may not be as skilled as another DOT's. It is concluded that each civil engineer-specific competency model for state DOT civil engineering positions should be formed around each DOT's strategic goals and objectives. Further, it is recommended that agencies develop the necessary developmental programs and guidelines to verify that their civil engineering employees are able to acquire the competencies needed for the next job level before obtaining the title.

What are potential impacts?

This research sets the stage for the development of competencies for civil engineering positions at state DOT's and other agencies to create a more dynamic and sustainable transportation workforce that will excel throughout the 21st century.