SCDOT

South Carolina
Department of Transportation

CLEMSON
U N I V E R S I T Y

U.S. Department of Transportation
Federal Highway Administration

PROJECT SUMMARY

Report No. FHWA–SC–17–02
March 2017

PROFESSIONAL SERVICES CONTRACT (PROGRAM) MANAGER ON-DEMAND TRAINING AND BEST PRACTICES

Overview

Every year the South Carolina Department of Transportation (SCDOT) spends millions of dollars hiring consultants to provide professional services in support of its planning, design, construction and maintenance operations. As a result of this demand, it is essential that professional service program managers have the experience and knowledge necessary to effectively and consistently procure and manage these professional consultants. In order to address program manager training needs that were identified during a pilot training session held in Columbia, SC in November 2012 for SCDOT employees, this research project was initiated with the following objectives: a) investigate the online training programs of state transportation agencies across the U.S. and develop a recommended "Best Practices" for online training; b) incorporate best practices to develop up to 10 (12-15 minute length) online training modules for program managers; and c) develop exam questions for each training module that could be used to test comprehension and understanding of the material covered by each module.

In order to create training sessions that addressed specific training needs and efficiently delivered the desired content, this research project solicited efforts for establishing the current practice of developing online training modules. The 10 online training modules developed in this research project are expected to meet the needs for training project managers in contract management at SCDOT, while ensuring consistent practices among employees and augmenting department leaders' training duties. The study of the current practices in the development, delivery, and assessment of online training at state DOTs and experiences gained through the concurrent development of the training modules led to the conception of an asynchronous online training development process for SCDOT.

The study of the current practice of design and delivery of online training has revealed that transportation agencies are shifting from traditional face-to-face training to online training programs. Findings from this research show that a majority of the participants from both the survey and telephone interviews had extensive online training programs for their employees. The remainder were making progress toward providing more online training options for employee use. Moreover, all of the DOTs that participated in the online survey and telephone interviews expressed their willingness to substantially increase online training programs. Two-thirds of the interviewed DOTs made online training compulsory for their employees, which depicts the inclination of these DOTs toward making online training programs a part of the core DOT capability building efforts. More than half of the interviewed DOTs mentioned that they offer certification through online training offerings. All but one of the interviewed DOTs have the capability to build and produce online training in-house; however, these DOTs also closely work and collaborate with consulting agencies, universities, and third party vendors to produce online training modules.

Effective strategies for building successful online training were also investigated in this research project. DOTs suggested that the use of interactive components in the training modules are key elements to engage the trainees for longer periods of time. In order to build interactive training modules, embedded learning games and audiovisual instructions are used to increase the learner's satisfaction with the online environment. An analysis of the responses from the interviewed DOTs revealed that training modules of shorter duration (i.e., 15-30 minutes) maintained the trainee's attention most successfully. Important considerations for selecting delivery platforms include interactive and user-friendly options. The DOTs were found to have a varied opinion regarding the use of mobile applications for training interfaces on tablets, which is likely because online training is considered an emerging concept for many state DOTs.

With accessible online modules, professionals have the ability to develop their skillset efficiently and effectively, which can facilitate capacity building for transportation professionals. Online learning sustains its effectiveness if maintained and updated regularly. This research project revealed that online training can have a distinct impact on learning and it can be easily tailored to target individual needs.

The objectives were met by conducting a detailed review of relevant publications and past studies, development and distribution of an online survey that facilitated the collection of data from ten state DOTs, and a series of telephone interviews with nine state agencies in order to collect additional details concerning their online training programs. The information collected from the state agencies during this process permitted the research team to develop a knowledge base of the current practice of online training among transportation agencies. This insight coupled with the lessons learned from the literature search was utilized to develop 10 online training modules for SCDOT Professional Services Program Management. Upon completion of these training modules, each module was pilot tested to simulate the experience of a 'new' user. Feedback from the pilot tests was incorporated in the final modules, which were then posted on SCDOT's intranet for employee access. Additionally, the process established by this research effort for the development of online training can be applied to future implementation of asynchronous online training by other SCDOT divisions.

During the development of online training it was found that the training modules can be most effectively and efficiently produced when: a) foundational content is consolidated and approved upfront; b) stylistic choices are made with the audience in mind; and c) modules are designed, built, and approved by a combination of content experts, creative developers, and agency champions.