

**Evaluation of the
Transportation Education Development Pilot Program
At the
Transportation Research Center
University of Vermont**



Submitted by Carol Vallett, Ed.D.
Research Associate Professor
College of Education and Social Services
University of Vermont
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For questions or more information about this report please contact the author, Carol Vallett, Ed.D., Research Associate Professor, at carol.vallett@uvm.edu.

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Introduction

In 2008 the University of Vermont Transportation Research Center (UVM TRC) was awarded a four-year grant from the Federal Highway Administration to conduct a Transportation Education Development Pilot Program (TEDPP). The TEDPP had two main goals: encourage new entrants into the field of transportation and increase the efficacy and retention of the current transportation workforce. TEDPP was composed of four distinct projects:

- Transportation Systems Institute (TSI)-intended to build leadership and management skills of incumbent workers in state Agency of Transportation workforce.
- Transportation Systems Academy (TSA)-focused on new entrants into the field of transportation, particularly maintenance and field personnel.
- Community Colleges and Transportation (CC) – sought to gather data from community colleges throughout the country in order to determine current and future transportation related education available at community colleges.
- Second Careers in Transportation (SCT) – planned to encourage retired or mature workers to consider second careers in the transportation sector.

Although each of these initiatives utilized evaluation methods during the project implementation (i.e. satisfactions surveys, pre-post assessments), the TEDPP director was interested in a comprehensive developmental evaluation for the program. A developmental evaluation is especially appropriate for socially innovative programs, such as TEDPP, which involve complex systems that often “cross sectors, involve changing dynamics, roles, and relationships between many players, and challenge conventional wisdom about the nature of the problem and its solutions” (Preskill & Beer, 2012, p. 2). The strength of developmental evaluation is the help it provides to decision makers in seeing the larger system of which the project is one piece, and helping the project adapt to the context of that system. Ideally, developmental evaluation begins with the start of the project and is on-going, but it can be conducted in a retrospective manner, as was the case with the TEDPP evaluation (Patton, 2010). In a developmental evaluation, the evaluator is a strategic learning partner with the project team. While some aspects of developmental evaluation use traditional evaluation techniques, a developmental evaluator also acts the role of an observer of formal and informal systems beyond the traditional evaluation framework.

While the data gathering techniques will be outlined in the methodology sections, all of the findings of this evaluation were discussed with the TEDPP project team on an on-going basis via twice monthly meetings, e-mails and phone calls. This enabled the current programming to develop and change as appropriate and influenced

future project activities. The goal of a developmental evaluation is always learning and providing useful information to project planners on continuous basis.

Each of the four TEDPP projects was considered individually, with primary emphasis on the Transportation Systems Institute and the Transportation Systems Academy. There was a significant amount of overlap between a few of the projects, and that will be discussed. This summary document is composed of individual evaluation reports for each of the four projects. The individual reports were originally written as stand alone documents, so some redundancy and overlap is evident.

Evaluation of the Transportation Systems Institute

The evaluation of the Transportation Education Development Pilot Program (TEDPP) was begun in July 2012. The purpose of this evaluation, which is developmental in nature, was not only to capture the successes, challenges and lessons learned from past TEDPP activities but also to look forward and provide a foundation for the development of future programs. The Transportation Systems Institute (TSI) was the first of the four TEDPP programs to be examined during this evaluation process.

Transportation Systems Institute was organized as a multi-day professional development series for transportation professionals working for state agencies of transportation in Maine, New Hampshire and Vermont. The TSI was conducted during 2010 and 2011 and included two cohorts totaling 26 transportation professionals from the state transportation agencies in Maine, New Hampshire and Vermont. The intent of the TSI was to address succession planning, capacity building and professional skills in the existing transportation workforce.

The TSI evaluation consisted of semi-structured interviews with organizers and instructors of the program. Additionally, TSI participants were surveyed and focus groups were conducted with participants in each state. Related documents were also reviewed. The results of the data collection indicate the TSI participants benefitted from the program. Making connections and building relationships with peers from other states proved to be a key outcome of the TSI along with developing communication, facilitation and general leaderships skills. Nearly all participants felt their approach to their work was enhanced by the TSI.

Future considerations of the program include the inclusion of other northeastern states along with additional curriculum topics including an enhanced focus on leadership, supervision and general management skills. Involving future TSI participants as consultants to projects in the state transportation agencies would also provide immediate application of theory and skills learned in the TSI. Additionally, developing professional communities of practice for TSI participants, beyond the completion of their TSI experience, would also help ensure the mutual engagement of participants and ongoing learning as transportation professionals.

The TSI holds promise as a national model for the continuous professional development of transportation professionals. The TSI helped address the issues of knowledge transfer and succession planning facing state transportation agencies and hopefully help ensure strong skills in future transportation leaders.

Introduction

The TSI concept was first initiated during the TEDPP planning stages in 2007. The planning process included representatives from the University of Vermont (UVM), the Vermont Agency of Transportation (VTRANS) and Vermont Technical College (VTC). The focus of the TSI was aimed at mid-career workers from multiple fields in state transportation agencies from Maine, New Hampshire and Vermont. The intent was to build leadership skills as well as address issues of succession planning and knowledge transfer in an aging workforce.

After the TEDPP grant was awarded, a TSI advisory group was formed and needs assessment undertaken during 2008-2009. The TSI curriculum, based on the needs assessment, was subsequently developed and the first cohort began in January 2010 and completed in June of that year. The second cohort was enrolled in the program from January through June of 2011. A total of 26 individuals attended the TSI including 9 each from New Hampshire and Vermont along with 8 participants from Maine. Subsequent TSI activity involved an outreach program to municipal transportation workers as well as additional webinars.

This developmental evaluation of the TSI is intended to examine the strengths and challenges of the program as experienced by the developers, instructors and participants. An important emphasis is placed on incorporating the lessons learned into recommendations and a foundation for future TSI initiatives in both the original states and beyond.

Procedures and Methodology

Data for this study were collected from various sources during the months of September through November of 2012. Interviews were conducted with TSI developers from UVM, VTC and VTRANS and TSI instructors. TSI participants were invited to attend facilitated focus groups and to complete an online survey about their TSI experience. Documents relating to the needs assessment and other related material were also collected and reviewed. These sources of qualitative data were analyzed by searching for common themes throughout the data. (Patton, 2002)

TSI Developers and Instructors

Private interviews, about one hour in length, were conducted with four individuals involved in developing the TSI and the two primary TSI instructors. Interviews were conducted either face to face or via telephone. A semi-structured interview guide was developed and with permission, interviews were recorded and subsequently transcribed.

TSI Participants

All TSI participants were contacted and invited to attend a focus group session of about one hour to review and comment on their TSI experience. Groups were held in each of the three state agencies of transportation offices and were facilitated in person by the TEDPP director. The focus groups were attended via phone by the evaluator who also recorded the session, with participant permission, and annotated the recording for review. A total of 19 individuals attended the focus groups including seven each from New Hampshire and Vermont and 5 from Maine.

Participants were also sent an online survey consisting of nine, primarily open-ended questions. Those who did not respond after a second reminder were subsequently contacted for a telephone interview and survey completion. A total of 24 responses were received using this method for an overall completion of 92%. Two individuals from Maine did not respond to repeated requests for phone or online survey completion.

Documents

The following items were reviewed for the TSI evaluation:

- TEDPP presentation report (11/2010)
- TEDPP quarterly reports
- TSI needs assessment
- TSI curriculum outline
- TSI participant satisfaction surveys
- TSI participant video

Findings

The findings in a developmental evaluation such as this are both retrospective and prospective in nature. While the findings will help illustrate and understand what did transpire in the TSI program, they will also serve to cast light on how the TSI could evolve in the future. This is somewhat different from traditional program evaluation that seeks to align program outcomes with program goals in measure of fidelity to the goals (Gamble, 2008; Patton, 2010). As such, these findings concerning the TSI will seek to answer inquiries concerning the intended goals of the TSI, program outcomes and strengths, and considerations for future TSI development.

Intended Goals

There were a variety of goals for the TSI that varied somewhat by stakeholder perspective. Most of the TSI developers expressed intent to impact the aging workforce issues present in the state transportation agencies involved in the program. This included addressing needs such as succession planning (in the light

of anticipated retirements), mentoring, and knowledge transfer along with new skills in finance and project management. There was also a desire to conduct job rotation within departments as well as job visitation and shadowing between states. It was also a goal that TSI activity would help build additional transportation education expertise at UVM and contribute to the TRC as a revenue source.

The TSI instructors saw the goals somewhat differently. Their goals for the program involved building leadership and management skills in general preparation for the future. Although not mutually exclusive with succession planning, it did not carry the specific knowledge transfer and job shadowing aspects of the developers' goals.

Interestingly, participants did not have a clear idea on the goal of the TSI. When asked about how they could have been better prepared for the TSI, about 90% said that they would want more information about the TSI before the course started. Including topics to be addressed as well as expectations from the instructors and from their agency leadership was also noted. One participant mentioned,

A clear expectation from the start would have been beneficial. This could have come from our state DOT front office to describe why they have invested in this initiative and what they hoped the outcome would be. I think the instructors tried to shape an outcome that may or may not have been what our leaders wanted.

Outcomes and Strengths

Nearly all of the TSI developers felt that most of the goals they had for the program were met. The exception was job rotation/shadowing that proved to be too difficult to accomplish for reasons having to do with human resource logistics and labor rules. The instructors felt that all of their goals for the program were accomplished. They thought the TSI helped boost the leadership skills of the participants, in particular for a group that particularly needed professional development. The instructors also noted the incorporation of technology into the program; in the form of e-readers, tablet computers, wikis and webinars was a positive addition and outcome of the TSI.

When asked about the most important information from the TSI, 50% of participants mentioned the value of building relationships with their peers in their own and other states. The developers and instructors also noted the tri-state relationship as being a somewhat unexpected but very positive outcome from the TSI. Participants frequently commented that now they can call or contact a peer in a neighboring state to ask for advice or resources and that this was a very valuable outcome from the TSI.

Figure 1 displays responses from participant surveys when asked about the most important information learned from the TSI and the tool used the most frequently in their professional work.

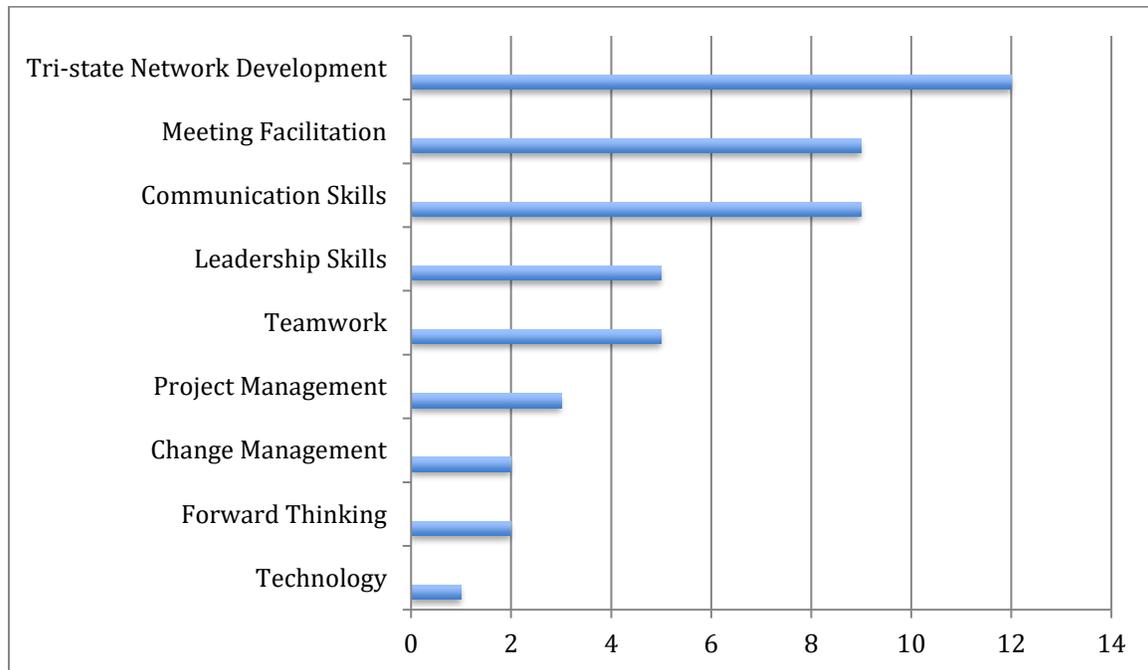


Figure 1. Participant perceptions of TSI tools and information

(Note: more than one answer per participant was possible)

When participants were asked if their job or work had changed since TSI completion, 19 (n=21) answered ‘yes’ with six individuals earning a promotion. Others who felt their job had changed mentioned that they now approached their work differently, had more opportunities or had fresh energy and enthusiasm for their work.

In terms of TSI impact on their future career, most participants mentioned a growth in leadership and management skills, a better awareness of change management and future planning and the benefits of additional exposure and contacts within and beyond their own organization. One participant mentioned:

I think the leadership skills and meeting skills will help me advance. I also think the relationships I have formed with other members from my state are priceless. I didn't have contacts in these other bureaus before like I do now.

Yet another participant noted:

TSI raised my awareness of need for change, planning for the future, and working with others to make it happen.

Considerations for future TSI development

Data collected from the TSI developers, instructors and participants was uniformly in agreement that the TSI was a valuable professional development opportunity for transportation professionals and should be continued and expanded in the future. Expansion of the program to encompass more states Northeastern was encouraged.

Suggestions for future program aspects ranged from logistics to curriculum and pedagogical improvements. These include:

- Content and learning centered around action learning project either within a home state or a bordering state. Use participants in TSI as a consulting group to address issues within an agency
- Clear support and buy-in from state agency leaders
- Less content on transportation finance and more project management
- Better preparation of participants
- Ensure a cross-section of job functions (HR, finance, operations, engineering, etc.) represented from each state
- Facilitation of the group after the formal TSI sessions end. Consider developing professional communities of practice

When asked about content for future professional development opportunities, participants put forward a host of suggestions. These topics are shown in Figure 2. Note that by far, most participants indicated a future interest in leadership, supervision and management skills to help them manage people more effectively especially in the public sector.

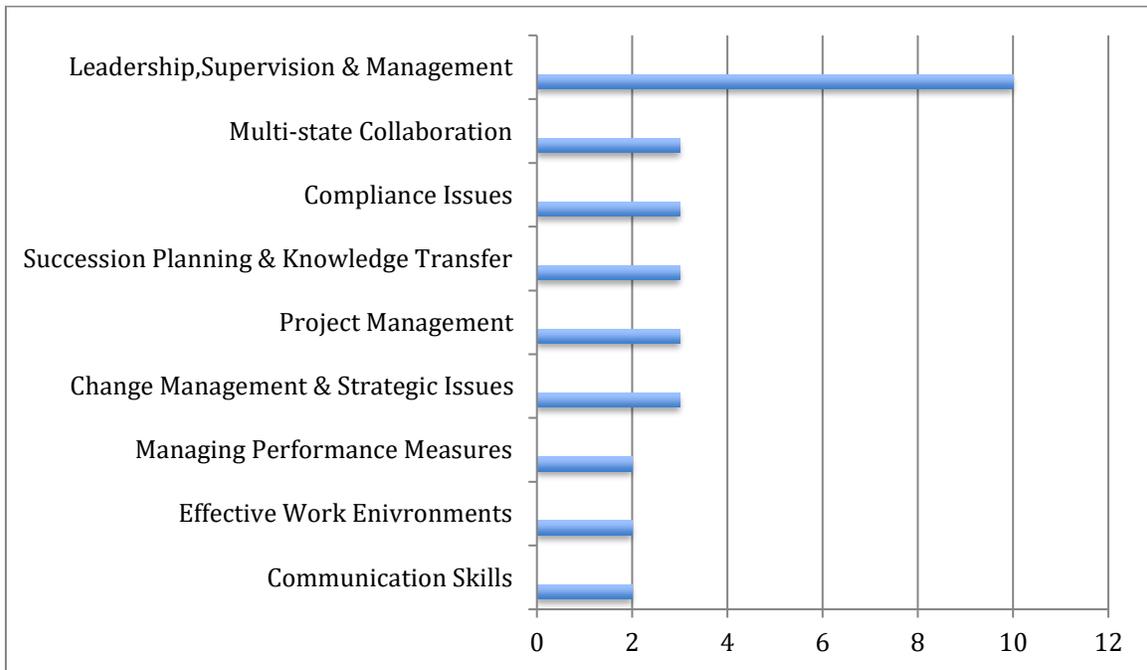


Figure 2. TSI Participant suggestions for future professional development

(Note: more than one answer per participant was possible)

Suggestions for course delivery mode and logistics found a preference for a hybrid of face-to-face and online instruction. In focus groups, participants frequently noted the benefit of meeting face-to-face but also expressed frustrations with the challenges of travel and time out of the office. Results from the survey question concerning preferred delivery mode are in Figure 3.

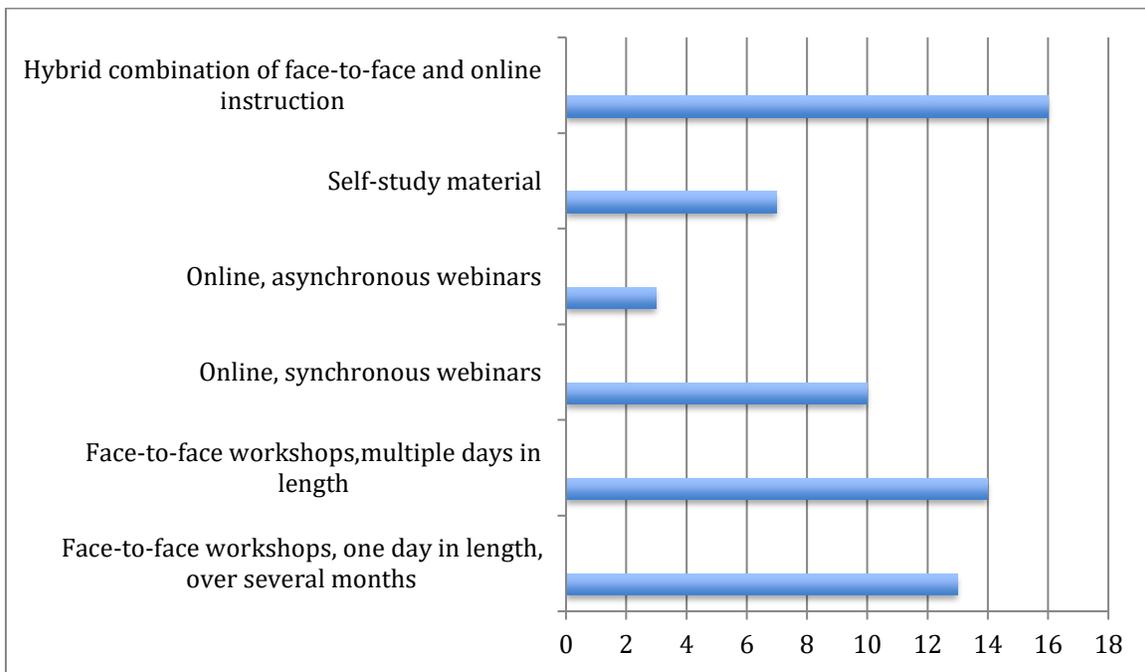


Figure 3. TSU Participant preference for future delivery mode

(Note: more than one answer per respondent was possible)

Summary

Overall, the TSI should be considered a success. Although some of the anticipated goals were not addressed, the institute did serve to build important skills in the participants that will be needed as these professionals advance within their organizations. Solving the issues of an aging transportation workforce and successful organizational transition depend on workers who are not only experts in their functional areas but also know how to lead and manage people, communicate within and beyond their organizations and effectively set and meet goals. The TSI curriculum, with continuous feedback and improvement, can serve as a national model for transportation professional development. Future TSI developers should build upon the unexpected outcome and benefit of having participants from several states learning together and forging collaborative bonds.

Finally, it is important to note that the TSI depended on partnerships between a university transportation center, a state technical college, and state agencies of transportation. While partnerships are not always easy to manage and sustain, they offer strength to the TSI and provide an important foundation for a successful program.

Evaluation of the Transportation Systems Academy

The evaluation of the Transportation Education Development Pilot Program (TEDPP) was begun in July 2012. The purpose of this evaluation, which is developmental in nature, was not only to capture the successes, challenges and lessons learned from past TEDPP activities but also to look forward and provide a foundation for the development of future programs. The Transportation Systems Academy (TSA) was the second of the four TEDPP programs to be examined during this evaluation process.

The TSA was organized as a multi-day program offered to potential entry-level transportation employees. The initial TSA offerings were held in 2010 and 2011 in conjunction with the Community High School of Vermont (a high school operated by the Department of Corrections) and an additional Vermont high school. In 2013, a Vermont high school, and two Career and Technical Centers offered the TSA, one to a traditional high school aged group and another to adult students.

Data was gathered for this evaluation primarily through semi-structured interviews with project partnering organizations, instructors and participants as well as a review of relevant documents. Data show a successful pilot project that resulted in much learning for both participants and the various partner organizations involved. TSA highlights and strengths included the sound curriculum, which was delivered in an interactive manner by highly experienced transportation professionals. Of greatest benefit to the participants, was the certification in flagging obtained through the TSA as well as basic Commercial Driver's License instruction. Adult students also benefitted from the same curriculum but brought a new set of challenges including scheduling, funding and for corrections students, issues of attendance and restrictions inside correctional institutions.

Future considerations for the TSA include outreach to other special adult populations, such as Veterans and instruction in heavy equipment as well as a sustained internship experience. Expanded linkages with potential transportation employers, in all transportation sectors, are also recommended.

One of the most successful aspects of the TSA was the orchestration of the effort by the UVM Transportation Research Center (TRC). The various partners looked at the TRC as the catalyst that brought disparate organizations together and provided the expertise and funding to operate the TSA. As noted by nearly all TSA partners, the TRC was essential to the current project and looked at as being vital to the future growth of TSA activities.

Introduction

The Transportation Systems Academy (TSA) was developed as one of the four primary programs of the Transportation Education Development Pilot Program (TEDPP). TSA was created as an educational program for potential entry-level employees at the Vermont Agency of Transportation (VTRANS) in collaboration with the University of Vermont Transportation Research Center (UVM TRC), Community High School of Vermont (CHSVT) and Vermont Local Roads, which is part of the Local Technical Assistance Program (LTAP). These entities recognized the need of VTRANS for entry-level workers while CHSVT, which oversees education for people under the supervision of the Department of Corrections (DOC), had a desire to expand education and employment opportunities for its students.

The collaborating organizations developed a 96-hour curriculum (see appendix A) that was first piloted inside a Vermont correctional facility in 2009. Subsequently, in 2010 the TSA was also offered at two different locations and to other audiences. A Vermont high school included the TSA in their Building Trades curriculum while the TSA was also operated on a Vermont Probation and Parole campus to a mixed group of supervised parolees and older adults preparing for employment. Subsequently, the TSA is also being presented during 2013 in three locations. These include a Vermont high school, a Vermont career and technical center (CTE) with a high school age population, and at an additional Vermont CTE as part of their adult education program.

This developmental evaluation (Patton, 2010) of the TSA project is intended to examine the strengths and challenges of the programs as experienced by program organizers, teachers and participants. Emphasis is placed on lessons learned through the TSA pilot programs that are applicable to shaping future TSA-related offerings.

Procedures and Methodology

Data for this study were collected from a variety of sources beginning November 2012 through March 2013. In addition to document review, key sources of data were individual interviews conducted with program personnel and participants. These semi-structured interviews ranged from 30 to 90 minutes in length and sought to understand the background, strengths, challenges and recommendations for the TSA. Interviews were transcribed and then coded using HyperResearch software and common themes were established that aided in evaluation efforts (Patton, 2002). In addition, the evaluator was able to accompany the TSA program planner to site visits during the planning process for spring 2013 TSA classes.

TSA Developers and Instructors

Private interviews, about one hour in length, were conducted with eleven individuals who were involved in either designing and/or delivering the TSA curriculum during 2009 and/or 2013. This included representatives from UVM

TRC, CHSVT, VTRANS, Vermont Local Roads, a Vermont high school and two Vermont career and technical centers. Additionally, a representative from Vermont Associates for Training and Development, a non-profit that provides job training opportunities to individuals 55 years of age and older was also interviewed.

TSA Participants

Only two participants were able to be located and were interviewed for this study. This is a limitation of this evaluation, but highlights the issue of mobility and maintenance of current contact information for participants. However, the interviews conducted were data rich and added to the evaluation efforts.

Documents

The following documents were reviewed for the TSA evaluation:

- TEDPP presentation report (11/2010)
- TEDPP quarterly reports
- TSA curriculum outline
- TSA media reports
- TSA posters and material
- TSA curriculum

Findings

The findings in a developmental evaluation are both retrospective and prospective in nature. While the data gathering was intended to understand what did occur during the initial TSA offerings in 2010-2011, this evaluation process was enhanced by involvement with the planning process for new TSA programs being held in Spring 2013. These findings then seek to address questions concerning the intended goals and program outcomes, partner contributions and relationships, and considerations for ongoing and future TSA programs.

Intended Goals

The initial goals and objectives of the TSA were outlined in the TSA Case Study documents produced by the UVM TRC and attached to this evaluation as appendix B. The short-term objective was to support the career-preparation of potential transportation sector employees with the longer-term objective of attracting new workers to the transportation industry from multiple populations, including both youth and incumbent workers. These activities were intended to happen with and through the CHSVT and also with Vermont high schools and career and technical centers.

The CHSVT became involved in the TSA with a goal of seeking more vocational and job opportunities for their students in fields that were closely linked to the Vermont

economy. The goal for VTRANS involvement with TSA was aimed at tapping into a pool of potential new employees that would have some initial qualifications to fill operations and maintenance positions in the highway division. The Vermont high school that incorporated the TSA in 2010 was interested in providing exposure with transportation related work for their students in addition to certifications in flagging and heavy equipment. Vermont Associates for Training and Development (participants in the program in 2011) and the CTE adult education offering in 2013 were both interested in developing skills for adults that would lead to employment.

Outcomes

The initial and subsequent offerings of the TSA provided some expected as well as unexpected outcomes. Interviews with key partners developed several themes that were captured in concept maps. Instructional practices including the curriculum and instructor qualities were key to the success of the program and are represented in Figure 4. Issues unique to an adult population, either with the CHSVT or at a CTE are represented in Figure 2.

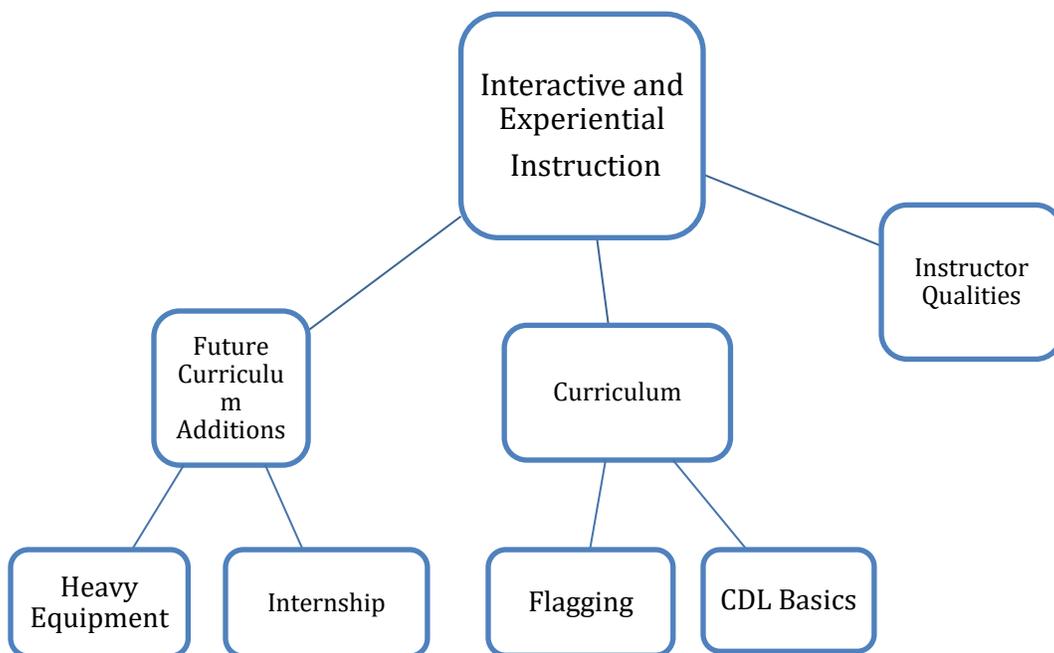


Figure 4. TSA Instructional Practices Findings

Interactive and Experiential Instruction.
 All groups involved noted good instructional practices as important to TSA success. Interactive and hands-on instruction was frequently cited as a strength of the

program that leads to high student engagement with the material. For example, some instructors brought material into the classroom and had students construct a model road. Others arranged for field trips to the local VTRANS or municipal garage so students could operate or view equipment. A CDL simulator was brought to instructional sites for student instruction.

“We made a road right down the middle of the room. There were buckets of gravel along with eggs and mini culverts. We built a road different ways, stood on them and found out which ones crushed and which didn’t.”

TSA Instructor

Curriculum.

The curriculum content and instructor qualities emerged as two themes that were specific strengths of the program. The curriculum, developed by UVM TRC working with Vermont Local Roads and VTRANS, was thought to embrace all the basics for entry level workers at VTRANS and would help lead to employment. Of particular note were work zone flagging and Commercial Drivers License (CDL) Basics. Work zone flagging, which was taught by a certified instructor, resulted in students earning their American Traffic Safety Service Association (ATSSA) certificate. In conversations with TSA participants (or information from program partners) it was often mentioned how the flagging certificate lead to entry-level employment. This employment may have been in transportation or in transportation related field such as a private construction company, utility or logging operation.

The CDL Basics course was also often noted as a highlight of the curriculum because of employment preparation. Although students did not receive their CDL through the TSA course, they were prepared to continue on for licensing.

“The CDL instruction with the simulator was the most important part of the course for me because of the hands-on. And the flagging certificate really helped me out too when I got a job. I applied for my CDL and got my permit and got hired by a construction company. When I’m 21, my company will help me get my CDL and pay for it too. But learning about the log book and pre-trip inspection through the CDL course helps me on the job even now.”

TSA Graduate

Instructor Qualities.

The instructors for the transportation specific TSA courses were experienced professionals drawn from VTRANS, Vermont Local Roads and professional organizations such as the Association of General Contractors. Their expertise in the subject matter helped them engage and earn respect from the students. Additionally, the instructors were experienced trainers who also brought sound instructional practices into the classroom. Other courses, such as Construction Math and CPR were lead by local instructors who were often part of the sponsoring school.

“The instructors deep expertise was essential to the course. They were also well organized and had connections to the local garage where students could try operating some pieces of equipment.”

TSA Vermont School Partner

Future Curriculum Additions.

While the curriculum was thought to be sound, two suggestions for additions to future offerings emerged from the interviews. These additions are 1) introduction to various types of heavy equipment as well as 2) a required internship. Just as flagging certification can lead to entry-level employment, basic operational knowledge of heavy equipment used in construction and transportation helps a new employee become ready for immediate work. A sustained, multi-week internship, either with a public or private employer, was also frequently suggested as a curriculum addition to aid with career paths and work readiness. It should be noted that the original curriculum did plan for both job shadowing (8-16 hours) and internship experience (40-80 hours) but in most cases was not achieved due to a variety of circumstances. The over-riding event was the impact on State and local transportation crews in the aftermath of tropical storm Irene that hit Vermont in August 2011.

“I visited the classroom a few times and it was a very engaging and non-threatening atmosphere for adult students, who often are hesitant to re-enter a classroom. The only piece that was a disappointment was the lack of internships due to Irene. If there had been internships this would have lead to jobs.”

Adult Student Advocate

Adult Student Specific Issues.

TSA programs that were focused on adult students carried some unique challenges that are diagramed in Figure 5.

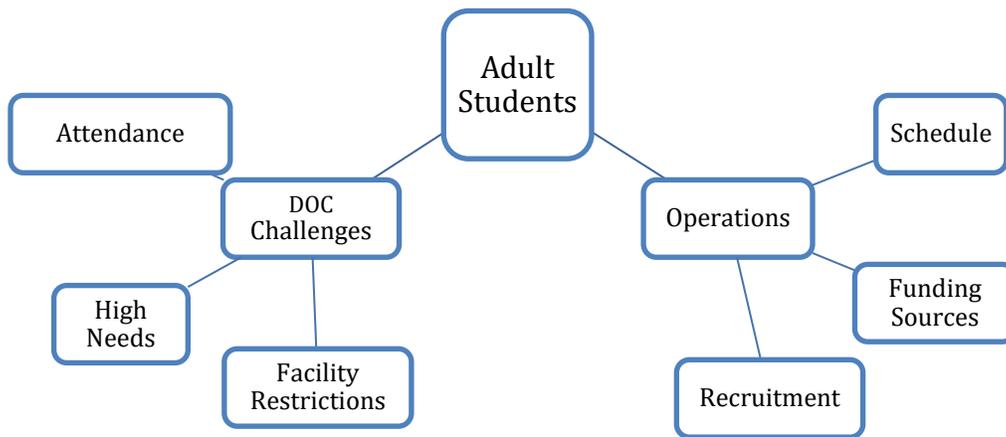


Figure 5. TSA Adult Student Issues

Department of Corrections Challenges.

TSA programs that were operated with the Department of Corrections (either inside a correctional facility or at a probation and parole campus) had some unique challenges. Restrictions inside a correctional facility, such as the type of equipment that could be brought inside, schedule changes and timing lead to curriculum adjustments. Some of the important hands-on elements of instruction could not be accomplished inside a facility. Outside field trips and experiences were also restricted.

“I wouldn’t offer the TSA at a correctional facility again. There were just too many barriers to hands-on learning inside the facility.”

Department of Corrections Official

Attendance, both for those inside the facility and for students at probation and parole centers, was problematic. Inmate location changes and lack of follow-up for other students lead to poor attendance. DOC Students who had what DOC officials consider to be high employment needs also had greater needs in other life-skill areas including unstable living situations. This made attendance and follow through with the TSA program challenging.

Operations.

Operating a TSA program for adult students at CTEs had specific challenges. Unlike high school age students, adult students need to be specifically recruited into TSA through outreach and marketing efforts. In addition, CTE adult programs carry a cost to the student that must be funded by the student or a sponsoring agency (such as an employer, Vocational Rehabilitation, Vermont Student Assistance

Corporation). This cost and funding can be a significant barrier to student enrollment especially to those who need employment and job training the most. Adult students also need a training schedule that can compress learning develop job skills on a shorter timeline. While high school students may be able to engage with the TSA curriculum over a period of many months, adult students would benefit from a shortened timeline.

Other TSA Outcomes

There were other outcomes from the TSA pilot project that were evident from interviews and observations. The first is a lack of direct job placement in transportation of TSA graduates. Only a handful of the nearly 50 TSA participants in the early pilot programs had found jobs in transportation or transportation related fields upon program completion. This number may be higher, but lack of follow up available follow-up data on participants makes this unknown.

The valuable role of the TRC was evident throughout the evaluation process. The TRC was acknowledged as the entity that brought collaborators together and facilitated the development of the TSA. Partners saw UVM TRC as being very valuable to the TSA in terms of advice, visibility and program continuation. As one partner representative noted:

“The TRC and Glenn have been great; they were the organizers to get everybody at the table. They opened doors for us with VTRANS and with their workforce development. Prior to TRC’s work with us on the TSA, my organization did not have a relationship with VTRANS.”

Program Partner

The larger TEDPP effort had projects aimed at both second career adult workers and community college involvement. The TSA development also served to involve organizations from both of those sectors. Vermont Associates for Training and Development is a non-profit that works with displaced workers age 55 and over. They participated in the Rutland based program offered at a probation and parole office. These participants were provided with various supports for the program and had a 100% completion rate for their 8 attendees. Although no specific job placements could be attributed to TSA completion, Vermont Associates is enthusiastic about TSA and looks forward to additional offerings of the program.

The Community College of Vermont (CCV) in 2012 instituted a new Associates Degree in Applied business, with a transportation focus. Although the TSA does not carry college credit, CCV has offered a portfolio review process for students who have completed the TSA. This could result in up to 12 college credits for students who wish to earn the Associates Degree. This is a bonus from the TSA that will help in developing transportation career pathways for students.

And although the CHSVT has decided not to continue the TSA in its current form, they have taken steps to add a highway heavy equipment training program to their curriculum. In early 2013, six CHSVT staff were certified by the National Center for Construction Education and Research (NCCER). NCCER is an organization that provides training material, assessments and documentation for students in construction career related programs. CHSVT staff look forward to beginning this program soon and placing students in transportation related jobs.

Considerations for Future TSA Development

Interviews, observations and reviews from all TSA partners found overall enthusiasm for the pilot project and a desire to continue the TSA in the future. The pilot projects of 2010-2011 and 2013 all contributed to learning how to fine-tune TSA for future offerings. Suggestions for the future include:

- Institute a comprehensive public relations campaign emphasizing the opportunities in transportation careers. This should be aimed at various audiences including educators/guidance counselors, parents and students of all ages. Special campaigns for special populations such as Veterans or displaced workers should also be developed.
- Develop strong relationships with transportation employers, in both the public and private sectors. These employers can publicly endorse the program (as VTRANS recently has) but also serve as sites for internships.
- Make curriculum adjustments as mentioned in this report including a strong internship experience. This will aid in making job placements and employment possible.
- Grow the instructor pool. While enough qualified instructors were secured for the pilot program, others will need to be recruited, trained and supported if the TSA is to expand throughout Vermont. TRC is currently operating a instructor development program for potential trainers and much will be learned from this new effort.
- Expand the TSA to include training in other modes of transportation. While the “Transportation 101” course does provide an overview to the transportation industry in general, some of the other courses are more specific to highway transportation. As the TSA program grows, it might be possible to offer specific courses in other transportation modalities.
- Enhance linkages with the adult learning community through the adult coordinators at all CTEs and other adult education service providers such as Vocational Rehabilitation, Parent-Child Centers, Department of Social Welfare, Vermont Works for Women and others.

Summary

The development of the TSA was very much a pilot project that provided learning for all involved. Although actual job placements in transportation positions may have been low, the program was successful in establishing a valuable curriculum, bringing partners together, initiating the conversation about training for transportation jobs and helping develop a mechanism for facilitating that training. The TSA may very well be considered a model pilot program that has helped raise the awareness of transportation related careers in Vermont and seems well positioned to expand in terms of geography, audiences and scope of instruction.

Evaluation of the Second Careers in Transportation

Introduction

The Second Careers in Transportation (SCT) project did not lend itself to as methodologically detailed evaluation as the TSI and TSA. The SCT was intended to interest, train and recruit mature or retired workers over age 50 into professional positions in the transportation sector. Over the length of the TEDPP, the SCT project evolved into both a major data gathering effort and exploration of employment opportunities in transportation for the growing population of mature workers in Vermont.

Procedures and Methodology

Data for this evaluation were gathered from a variety of sources from November 2012 through May 2013. Data gathering overlapped with the TSA evaluation and benefitted from the intersection of the two efforts. Data collection involved interviews, a focus group, surveys as well as document review.

TEDPP Personnel and Partners

Informal interviews were conducted with various TRC personnel as well as community partners in the SCT project. Late in the spring of 2013, a TSA session was offered for adult students at a Career and Technical Center outside of Burlington. Students in that class participated in a short focus group about their experience and completed surveys regarding their experience.

Documents

In addition to the documents reviewed for the TSA evaluation, the Second Careers in Transportation Needs Assessment Analysis was also reviewed.

Findings

The findings of the SCT evaluation fit the developmental evaluation particularly well. While the project attended to the overall goals, the expected partners, pathways and participants took unanticipated turns.

Intended Goals

According to the SCT documents, the project had three goals. These goals were 1) gauge level of awareness of the transportation industry by the mature worker audience, 2) attract older workers to consider professional positions in transportation and 3) provide the link between older workers and transportation

job opportunities, primarily those who have recently retired from other industries with needed skills. It was expected that AARP Vermont would be a strong partner with UVM TRC along with an advisory committee.

Outcomes

While some of the specific SCT goals were not quite reached, the SCT did address the overall recruitment and preparation of candidates for careers in transportation. This was accomplished primarily by partnering with Vermont Associates for Training and Development and other adult training and education organizations.

Partnerships

Vermont Associates is a non-profit that specializes in training and providing employment support for individuals over age 50. Vermont Associates supported seven participants in a TSA course held in the Rutland area and is eager to repeat this experience when participants and opportunities arise. Although none of the participants were known to have subsequently become employed in transportation related work, the linkages between UVM TRC, Vermont Associates and VTrans is now established and ongoing.

TEDPP also initiated a relationship with Vermont Works for Women, a non-profit that supports and trains women for entry into non-traditional jobs. Seven women, of varying ages and a majority new Americans, participated in the spring 2013 TSA offering for adult students. The students were enthusiastic about their learning and survey results showed that half were interested in more transportation related learning while a majority were planning to apply for a transportation job within the next year.

Additionally, TEDPP established a working relationship with Vermont Department of Labor, Veteran liaisons. The TRC has participated in Veteran job fairs and is establishing a presence as a resource for Veterans seeking transportation jobs.

Needs Assessment

A product of the SCT initiative was the SCT Needs Assessment. This assessment was completed in **date?** By the TRC and the UVM Center for Rural Studies. The instrument asked about current and potential jobs and job openings for administrative, professional or skilled labor in transportation related positions in northern New England. 207 organizations responded (41 private and 166 public sector) the results did not lead to any profound conclusions regarding mature workers and the transportation industry. However, the data did point to a need for people to fill positions in general labor, trucking and equipment operations with the CDL being the most sought after certification.

Considerations for Future SCT Development

It is recommended that as the TEDPP goes forward and moves into an established phase of operation, SCT could cease to stand alone as a separate project in the overall program. It has become quite evident that a separate education or training program does not need to be developed for adult student seeking second careers. The TSA, and perhaps enhanced versions of the TSA, has served and can continue to serve as an entry point for adults who wish to begin careers in the transportation sector. Customized outreach material could however be developed to speak to each of the special populations who are potential students for TEDPP programs. Additionally, UVM TRC should continue to work with the organizations that support these populations to enhance success in transportation education and careers.

Summary

The SCT initiative helped the TEDPP engage with experienced workers in special populations beyond the original mature and retired population. In working through the complex system that is the adult education landscape in Vermont, the most notable outcome was the partnerships that the UVM TRC developed with organizations that are already established and experienced in working with adults who are in career transition. This includes Vermont Associates, the Department of Labor, Vermont Works for Women, the Community College of Vermont and the adult coordinators who serve at career and technical centers. These relationships are emblematic of the sorts of unintended consequences of socially innovative programs that evolve and contribute to program outcomes yet cannot be predicted in the planning stages.

Evaluation of the Transportation and Community Colleges Initiative

Introduction

The TEDPP community colleges (CC) project was initially conceptualized as a national summit of community colleges with a focus on transportation education and training. The summit was intended to follow a comprehensive national survey of community colleges in order to gauge the level of transportation related programming occurring in community colleges.

The review of the CC project again did not follow as methodologically detailed evaluation as the TSI or TSA. During the course of the TEDPP, the CC project primarily evolved into a data gathering effort via documents, surveys and work with the local Community College of Vermont (CCV).

Procedures and Methodology

Data gathering for this evaluation consisted primarily of documents review, partner interviews and the execution of an enhanced and regionalized survey.

Documents

The summary data from the original survey, which was executed in 2009, were reviewed as were original planning documents. Unfortunately, the raw data from the survey was not accessible, so only the summary report from the data as published by the TRC (Glitman, 2010) could be reviewed.

Regional Survey

In early 2013, a survey of New England Community Colleges was undertaken in order to better understand transportation offerings at those institutions. The survey implementation followed the Tailored Design Method for online surveys (Dillman, 2011). The survey was introduced via a personalized hard copy letter to either the President or Academic Vice President of the college. It was then followed by an invitation to the online survey site and weekly reminders were also sent online. This survey of 35 community colleges had a 57% response rate (n=20) and will be discussed in the findings section of this report.

Interviews

Representatives from the Community College of Vermont were also interviewed about transportation related issues and educational offerings. Interviews were about 30 to 60 minutes in length and sought to gather information concerning transportation related offerings and plans for expansion.

Findings

Intended Goals

The Community College portion of TEDPP was intended to be comprised of both a national survey of community colleges and a follow up summit of survey respondents. The goals of the proposed summit were to:

- Identify the current and potential role of community colleges in providing for transportation workforce development.
- Identify possible transportation careers or positions that are currently or would have the potential to be served by community college courses or a degree.
- Identify the potential curriculum that community colleges presently have in place or could administer that will prepare students for a career in transportation.
- Identify and discuss the issues or barriers community colleges face in being more engaged in transportation workforce development.
- Identify and discuss strategies and processes that may be utilized to address how community colleges can better identify transportation workforce development needs.
- Discuss the role of community colleges in providing continuing education for in-service transportation professionals, how community colleges can work with the transportation industry to identify those needs, and the strategies and processes to provide for transportation professional continuing education.

Outcomes

The resulting outcomes of the CC project were useful but did not meet intended goals. While the national survey was executed, the follow up summit was not created. This was due primarily to the fact the TEDPP personnel began to work with the American Association of Community Colleges (AACC) leadership and realized that the AACC offers conference opportunities on an annual and national basis for their member organizations.

UVM TRC launched the national survey in partnership with the AACC in 2009. Details concerning methodology and results can be found in the resulting report (Glitman, 2010) which was presented at the annual AACC Workforce Development Institute in 2010. The survey results partially answered the first three goals of the CC project, namely a benchmark of existing transportation programs and planned program additions at the colleges (n=167) who responded. The survey did suffer from a rather low response rate of approximately 15%. However, the remaining goals addressing engagement in transportation careers and continuing education were not specifically met.

National Survey

The national survey of community colleges did produce some useful information. The key findings seemed to be: 1) about 55% of respondents had partnership relationships with industry and transportation employers 2) 61% of respondents reported shared technical programs that were transportation related and 3) 86% of respondents owned facilities or equipment that supported transportation courses. However, due to the lack of raw data, it was impossible to contact these institutions in 2013 in order to follow up on program updates. While the survey served to give a snapshot of transportation related educational efforts at 167 institutions, it was limited by possible response bias.

Regional Survey

A regional survey was launched in April 2013 to the 35 community colleges located in New England states. This survey was similar to the previous national survey, however institutions identities and demographics (size, location) were collected as were individual contact information for those who completed the surveys. (In a few cases, multiple individuals from one institution completed the survey adding information from their specific area of responsibility.) The survey was also enhanced with additional questions by transportation mode, but yet easier to navigate for respondents due to built in survey logic that allowed for question skipping.

The results do provide a baseline of transportation related education available at New England community colleges currently and a look at what is planned for expansion in the near future. Programs in transportation logistics are in place at three institutions and planned in the future in another two schools. Four institutions are planning to initiate aviation specific programs while three are currently offering programs in marine technology. Road construction or technology programs were also in place at four institutions. Programs in railway and pipeline were not evident. Not surprising, programs, equipment and partnerships were very location dependent.

The data from this survey not only serve to provide a snapshot of community college based transportation education, but also served to establish a database of information and contacts at community colleges in New England. This will be useful as the TRC continues its work with a regional focus.

Relationship Building

An outcome from UVM TRC efforts with community colleges was the development of a working relationship with the Community College of Vermont (CCV). As noted previously, CCV recently developed a new degree with a elective concentration in Transportation from a policy and operations perspective. UVM TRC was instrumental in helping bring about a relationship with CCV and VTRANS both for advisory purposes but also for student recruitment. CCV in Vermont provides yet

another pathway for students into transportation sector employment as well as continuing education for current employees.

Considerations for the Future

The UVM TRC should continue to build relationships and partnership with community colleges in New England. This can best be accomplished by helping to articulate clear career pathways from K-12 to community colleges for transportation careers and also by supporting, if possible, the curriculum development needs of community colleges. Promoting and encouraging employer relationships with community colleges should also be a focus for the future since these partnerships can help to lead directly to jobs and careers in transportation.

Summary

While the Community College initiative of the UVM TRC did not accomplish all of its original goals, it did have important and useful outcomes. It was the beginning of both knowledge gathering and relationship building. True to social innovation efforts, strategy must often shift to reflect the reality of the innovation, and this is captured in the results of the Community College strand of TEDPP.

Additional Accomplishments

Career Pathways

While not part of the original TEDPP plan, the pilot project was active in the area of transportation career pathways including outreach, leadership and general awareness building. Career pathways are a workforce development concept that works to connect education to employment and careers by articulating a clear linkage between them (Hull, 2005). Specifically, the UVM TRC developed transportation specific outreach material and sponsored career pathways leadership training.

Outreach Material

The TRC developed a series of five “Career Pathways in Transportation” documents by mode of the transportation sector including maritime, rail, transit, highway construction, and public works. Each pathways document includes an introduction to the mode, provides a snapshot of an employer, a graphic of a career pathway from entry level to experienced worker, career biographies of people who are in that career and also a list of transportation education and training resources. The pathways documents can be accessed at XXXXXXXX. The Career Pathways documents are also available in printed form and have been used at career fairs, distributed to CCV and Vermont career and technical centers. A companion piece to the pathways documents is the “Vermont Transportation Industry Factsheet”.

Leadership Training

The UVM TRC also arranged and sponsored a two-day Career Pathways Leadership Workshop lead by Fran Beauman and Carol Jurgens, both members of the Center for Research and Occupational Development. The 24 participants represented a variety of organizations including secondary and technical education, community colleges, Vermont Agency of Transportation, Vermont Department of Labor, Regional planning boards, and Vermont Agency of Education as well as TRC personnel. Participants were enthusiastic about the training and in evaluation surveys felt that the material and information would lead to more partnership building and development of clearer pathways into transportation employment.

Tool Kits

Building on the lessons learned and experience of developing and operating both the TSI and the TSA, the UVM TRC created “tool kits” for other transportation workforce development centers to use in their own educational program development. These tool kits contain resource material and suggestions for the establishment of similar programs along with case studies and vignettes of participants. The tool kits are available online at XXXXXX .

Summary

This developmental evaluation allowed for a retrospective look at the activities of TEDPP in its initial four years along with current assessment of the fifth year undertakings. Although TEDPP made progress on each of the four funded programs, TEDPP did not accomplish all of its objectives as initially conceived. This is not unlike many socially complex and innovative programs. For TEDPP, some expected partnerships did not materialize, (AARP) while others that were not on the horizon in the beginning became solid partners (high schools, career and technical centers). Innovative and valuable activities, such as the Pathways Leadership Training arose while the planned community college transportation summit was found to be unnecessary.

The initial goals of TEDPP, encourage new entrants into the field of transportation and increase the efficacy and retention of the current transportation workforce, were met through the program's efforts. Current transportation professionals in three states became re-energized about their careers and improved their professional skills, networks and resources through participation in the TSI. While direct numbers of workers into transportation employment through the TSA is low, the TEDPP allowed for a testing of curriculum and building of awareness and skills with a variety of populations beyond the program's original target participants. Tools are now available for dissemination to other regions of the country and awareness of UVM TRC's activity has spread in the transportation workforce education community, particularly in New England. UVM TRC is now well poised to continue, expand and accomplish their transportation workforce goals.

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Appendices

Appendix A - TSA Curriculum

Glenn McRae, Outreach Manager
glenn.mcrae@uvm.edu
UVM Transportation Research Center

802-656-1317

The Transportation Systems Academy

The basic TSA certificate can be a stand-alone program or offered in conjunction with another certificate or degree program (e.g., high school diesel technology, automotive technology).

While each Center may build its own version of the Academy based on its strengths and capacities there are 12 basic components to the program. Numbers 1-10 are required to be incorporated in some form, and it is highly preferred to have either or both component 11 and 12 to provide a level of familiarity and experience with the industry, especially with participants who are new to the workforce. Systems can be introduced for more mature or experienced workers to translate experience or prior leaning to equate to any of the components. The program will need to have a consistent and established system to do this. The units below are based on pilot programs initiated in 2010-2011 with the Community High School of Vermont and Canaan High School. They can be adapted with new titles, combined in different units, or delivered in a different manner, but the basic competencies have to be met in any new program.

Course	Description	Syllabus	Hours*
1. Transportation 101	Overview of the transportation industry, operations, modes, careers, jobs, skills applied.	UVM TRC Can be taught by in house staff, regional planning staff, VTrans UVM TRC Career Pathway Docs	3-6 hrs (can include exercises and field trip)
2. Basics of a good road	This course teaches the basics of road rules, regulations, processes and care of maintaining good roads.	VT Local Roads / VTrans	5 hrs.
3. Winter Roads	History and overview of winter road maintenance and gives basic information on what is involved in proper winter road maintenance and management.	VT Local Roads / VTrans	5 hrs
4. Worker Safety basics			

4a. First Aid/CPR	<i>American Heart Association Heartsaver course or Red Cross First Aid /CPR</i> Leads to certificate http://www.heart.org/HEARTORG/CPRAndECC/WorkplaceTraining/HeartsaverCourses/Heartsaver-Courses_UCM_001295_SubHomePage.jsp http://www.redcross.org/take-a-class/program-highlights/cpr-first-aid	Need certified instructor	6-8 hrs
4b. OSHA 10-construction / garage	Leads to a broad awareness in recognizing and preventing hazards. Covers a variety of safety and health topics, which a worker may encounter. The training emphasizes hazard identification, avoidance, control and prevention. Leads to OSHA-10 Certificate	Need certified instructor	10 hrs
4c. Workzone/ flagging	This course presents the basic guidelines and regulations for temporary traffic control, installation, maintenance and removal. Can lead to ATSSA certificate.	Need certified instructor http://www.atssa.com/TrainingCertification.aspx	8 hrs
5. Respectful work environment	This course provides information and discussion on the guidelines and laws around creating healthy workplaces and gives specific examples of how to maintain this environment. Importance of understanding workplace expectations; Definition of unlawful workplace harassment; Examples of harassing behavior; Harassment by non-employees; Why victims don't speak out... Fears; Same-sex harassment ; Employer responsibilities & policies; Employee responsibilities		4 hrs
7. Project Planning	This course provides a general understanding of the basics in Project Planning by detailing the tools and formats used in successful projects. Review of basic road design/layout; Defining the project; Measuring options and equipment ; Calculating quantities and cost; Measuring distances; Instruction operation – hand/laser level and rod; Definitions for leveling; Using grade stakes; Estimating quantities ; Cost estimates; Presenting project overview ; Focus on key policies and trends; Use props for emphasis; How to gain public support	VT Local Roads and VTrans	6 hrs
8. Construction Math	Covers fundamental elements of mathematics necessary to a broad range of applications in construction. The emphasis is on basic concepts of place value, fractions, decimals, unit conversions, percents, area/perimeter/volume, geometry, and the metric system that are useful in measuring and quantitative problem solving in construction trades.	Determine what is available at center. How to assess competencies of participants and design course to fit needs.	38 hrs
9. Job search: research, resume, interviewing	Basic skills in crafting a resume, writing a cover letter, conducting a job search, navigating the state HR web site, basics of interviewing. Thinking about a career as well as getting a job	UVM TRC Career Pathway Docs	4 hrs
10. CDL Basics	This course gives students a basic understanding of the Commercial Driving License (CDL)		20+ hrs

	<p>requirements and reviews the CDL manual so that they are better prepared to take their written CDL test and will have a basic understanding of the requirements involved.</p> <p>Understand Commercial driver responsibilities (License Types, vehicle types, and endorsements; General Safety concerns; Transport and Cargo considerations); the CDL application; Understand the Vermont and Federal CDL Rules/Regulations; Understand the basics of pre-trip inspection Can add the use of a CDL Simulator. There is a mobile unit at the Police Academy in Proctor.</p>		
11. Job Shadowing	VTrans or DPW garage and/or construction site.		8-16hrs
12. Internship	Regular engagement at an employer site for a prolonged period with a mentor.		40-80 hrs



TRANSPORTATION RESEARCH CENTER

**The Transportation
Systems Academy:
Partnerships building the
next generation of
transportation workers,
one student at a time
A Case Study with the**

Community High School Vermont

Seeking to prepare a new generation of qualified and motivated workers to fill operations and maintenance positions in the public and private sectors the UVM TRC developed the Transportation Systems Academy (TSA). The TSA provides a sound introduction to the field and specific training and certifications necessary to obtain entry level positions as the first step on a career pathway in transportation. Partnering with the Community High School of Vermont, serving the Vermont Corrections community, as well as the Vermont Agency of Transportation, the program built a specific bridge to prepare individuals under the supervision of Corrections to be able to transition to jobs in the transportation field.



The Community High School of Vermont (CHSVT) is a unique institution, operating within the state's Corrections Department [<http://doc.vermont.gov/programs/educational-programs>] and is accredited by the New England Association of Schools and Colleges as an Independent High School that awards credits and high school diplomas. It has campuses in every state correctional facility and most probation and parole sites across the state. Research has continued to support its educational and workforce development efforts showing significant improvements for graduates in recidivism rates and the ability to secure and retain employment.

The CHSVT Workforce Development Partnership was designed by faculty and staff, with input from offenders, to teach fundamental life skills using a unique, holistic approach that immerses participants in educational, work, and living unit settings that use a strength-based approach supporting offender development. This strength-based approach is built on the understanding and use of 16 aspects of behavioral intelligence, or life skills that increase the participants' ability to effectively solve problems. These [16 Habits of Mind](#) are detailed in a series of four books edited by Arthur L. Costa and Bena Kallick. The Habits of Mind were used to

create a [curriculum for CHSVT students](#), as well as training materials in [strength-based supervision](#) for faculty and staff working with WDP participants.

The UVM TRC recognized that the CHSVT represented a diverse pool of untapped future workers who had access to a strong education and training framework. The Transportation Systems Academy (TSA) was developed through a series of pilot efforts over two year to provide a flexible curriculum that aligned directly with the industry needs to recruit a more prepared and motivated workforce. To implement the program effectively and spread it state-wide, training resources and partnerships were developed with the state Agency of Transportation, Vermont Local Roads (LTAP) and private companies. Work is being continued to gain recognition for the TSA as a valid and easily identifiable credential that will be valued throughout the industry.

The Transportation Systems Academy is continuing its second phase of development to take the work done by the CHSVT and deploy it across their campuses as well as into the state's network of Career and Technical Centers to reach an even wider range of high school age students. In this venue, through adult education programs, it can also be designed to specifically address the opportunity to reach out to more mature dislocated workers, and provide a bridge for Veterans to more easily gain recognized credentials and identify career pathways in the transportation sector.



What is the Transportation Systems Academy?

Overview: The Transportation Systems Academy (TSA) is a multi-tiered workforce development pilot program that is geared at working with non-traditional labor pools to provide career awareness and skills training for the transportation industry. The TSA is a comprehensive program that specifically trains individuals in the basics of transportation careers with an emphasis on operations and maintenance career pathways starting with a solid foundation in transportation system fundamentals and work zone safety.

The program has created a toolkit of training modules, career pathways and career development information as well as job seeking and workplace skills that can be integrated into existing curriculum or programs, or be combined as a stand-alone program that will assist interested students gain a foundation that will prepare them to be competitive in the job marketplace for positions in transportation operations and maintenance as the first step on a career path. Pathway tools demonstrate connections to jobs in multiple transportation modes. Modules include:

- Transportation 101
- Basics of a Good Road
- Winter Roads
- Worker Safety
 - ✓ First Aid/CPR (Certification)
 - ✓ OSHA-10 (Certification)
 - ✓ Work Zone/Flagging (Certification)
- Respectful Work Environments
- Citizenship and Community Participation
- Project Planning & Selling
- Construction Math
- CDL Basics
- Work Experience in a DOT garage

History: Created at the Transportation Research Center at the University of Vermont, the TSA has run pilot programs at the Community High School of Vermont and the Career Center at Canaan Vermont. This initiative was possible through a multi-year grant from the U.S. Department of Transportation TEDPP (Transportation Education Development Pilot Program) to help develop four innovative programs to attract and retain skilled workers in the transportation sector of Vermont, New Hampshire and Maine. The pilot program goal is to help educate, prepare and engage individuals not just for their next job but to start in a lifetime career path in the field of transportation.

The TSA program was designed to help address the following areas:

- 40-50 % of Vermont's transportation workforce is eligible to retire in the next 10 years.
- Fewer people are going into the key transportation fields & there is competition for those potential workers.
- The challenge of reaching non-traditional populations to create a workforce representative of our nation's diversity.
- The need for different and more complex skill sets for the next generation of transportation professionals.
- The critical shortage of maintenance and operations workers, which can be overlooked when universities focus workforce development programs on other professional positions.

- Jobs in transportation operations and maintenance are distributed widely across the state (local DPWs, state maintenance garages, private companies, nonprofit transportation services) and different modes.

Objectives: The immediate objective of the program is to support the training and career-readiness for potential *up-and-coming* employees. The longer-term objective is to attract new talent to the transportation industry from multiple pools (youth and mature workers). The program was designed in close cooperation with the Vermont Agency of Transportation (VTrans). The skill building and certification modules are closely aligned with the VTrans training requirements for all first year employees and VTrans has provided training assistance and opened up facilities for job shadowing and internships, as well as summer employment opportunities that provide excellent entry level workplace experience. The TSA is easily combined with existing education programs in construction, heavy equipment operation, or automotive maintenance.



