Follow-Up of the First National Technical Assistance Academy: Preparing Students Under-Represented for Their Gender for Success in Non-Traditional Occupations

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for Career and Technical Education project, like every program or activity receiving financial assistance from the U.S. Department of Education, must be operated in compliance with these laws.

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Executive Summary

In the spring of 2011, the National Alliance for Partnerships in Equity (NAPE) entered into an agreement with the National Research Center for Career and Technical Education (NRCCTE) to evaluate the first Technical Assistance (TA) Academy held on June 26 and 27, 2008, which was to assist states in preparing students who are underrepresented in certain occupations due to a gender stereotype for success in those occupations—such occupations are known as non-traditional occupations. As part of its work, NAPE reviewed four of the five participating states' applications, performance data, and work plans developed during the TA Academy; conducted a literature review of effective technical assistance; and analyzed survey and interview responses about the TA Academy's design and content and the states' progress in completing work plan activities.

NAPE determined that the design and content of the TA Academy itself reflected good principles of effective TA. In fact, most state teams did not recommend changing the major elements of the TA Academy. All participants rated the presentations as "somewhat useful" or better and agreed that the breakout sessions were best led by neutral, expert facilitators. Furthermore, most participants agreed that the TA Academy achieved its goals to raise the awareness of barriers to student participation in and completion of non-traditional programs, to offer strategies to improve data collection and accuracy, to provide analytic tools to identify under-performing providers, and to describe research-based approaches for improving statewide performance on the measures.

As a result of the TA Academy, three of four states contacted for post-TA Academy surveys conducted professional development with teachers and administrators on effective practices of recruiting and retaining students under-represented for their gender in non-traditional CTE programs. Although some of the teams admitted to being sidetracked or losing momentum, three of the four states reported they have made significant progress in completing their work plan activities.

However, through the survey and interview processes and the review of work plan completion, NAPE identified a major weakness in the lack of follow-up after the TA Academy. The literature suggests effective technical assistance should be scheduled to continue improvement efforts and should deliver reinforcement on a consistent schedule. Across the board, the participants expressed the strong belief that follow-up was necessary to reinforce lessons learned and to ensure mutual accountability and impactful completion of work plan activities. A second weakness was found in the lack of involvement by Business and Industry (B&I) representatives in the state teams' post-TA Academy efforts. Therefore, NAPE recommends that the TA Academy's post-TA Academy design include:

- a regular cycle of follow-up technical assistance via webinars, networking sessions, and state-level workshops;
- periodic reporting by state teams of their progress toward work plan completion;
- strategies to continue collaboration between secondary, postsecondary, and B&I representatives;
- post-TA Academy evaluation by facilitators of state-specific work plans for feasibility

and potential impact;
- continued involvement of the neutral, expert facilitators with the state teams; and
- monitoring of states' performance on the core indicators.

Follow-Up of the First National Technical Assistance Academy: Preparing Students Under-Represented for Their Gender for Success in Non-Traditional Occupations

The National Center for Research in Career and Technical Education (NRCCTE) planned, organized, and convened a one-and-a-half-day Technical Assistance (TA) Academy on June 26 and 27, 2008. The TA Academy's purpose was to assist states in preparing students under-represented for their gender for success in non-traditional occupations. Such non-traditional occupations are defined in this report as coming from the national Career Clusters or Career Pathways. For example, female students do not traditionally follow an Architecture path, and male students do not traditionally follow an Education path. To remove these gender differences, it is imperative for career and technical education (CTE) groups to minimize gender perceptions. The NRCCTE hence created the TA Academy. The TA Academy's objectives were (1) to raise the awareness of barriers and obstacles to student participation in, and completion of, non-traditional programs; (2) to offer strategies to streamline the collection of accurate local program data; (3) to provide analytic tools to identify under- and out-performing providers and programs; and (4) describe research-based approaches for improving statewide performance on the measures.

In January 2011, NRCCTE and the National Alliance for Partnerships in Equity (NAPE) entered into an agreement, whereby NAPE would (1) evaluate the effectiveness of the TA Academy's structure and content in achieving its stated objectives and its value compared to alternate state strategies; (2) identify lessons learned about providing technical assistance; (3) determine the extent to which the state teams developed different objectives and activities to improve performance; and (4) assess the state teams' progress in completing their work plan activities and improving their performance and identify obstacles to success.

To achieve its objectives, NAPE undertook to:

1. Review the participating states' application;
2. Analyze, for each state from the Consolidated Annual Report (CAR) for the program years 2008, 2009, and 2010: [1]
   - Core indicators, disaggregated by gender,
   - Enrollment (CTE concentrators), disaggregated by cluster and gender, and
   - Grand total performance on core indicators, disaggregated by gender;
3. When available, compare the states' pre- and Post-TA Academy responses to a "Backgrounds and Beliefs" questionnaire;
4. Review and compare the state work plans for common themes;
5. Collect and analyze qualitative data on the TA Academy design and work plan completion via an online survey and follow-up interviews with at least three individuals from each state;
6. Develop case studies for two states by collecting information via interviews and on-site visits;
7. Conduct a literature review on the subject of effective technical assistance;
8. Synthesize and analyze all data; and
9. Prepare a report summarizing the findings and made recommendations.

1 For some states, PY 2008 data were not available. PY 2011 data will not be available until January 2012.

Report Organization

The report first presents background information about the TA Academy's process, structure, agenda, and state team composition. The report then summarizes the findings from a literature search on effective technical assistance and the survey and interview processes. In the state-specific sections, the report provides background information provided by the states in their applications, baseline CAR data, and summaries of the states' responses to survey and interview questions about both the TA Academy's structure and content and the progress of work plan completion. The report concludes with overall findings, conclusions, and recommendations.

TA Academy Background

Process

To achieve the TA Academy's objectives, Academy staff performed a number of steps. First, the TA Academy issued a Request for Proposals on March 24, 2008, with a submission deadline of April 25, 2008. Once the applications arrived, the NRCCTE reviewed applications from five states—Alabama, District of Columbia, Georgia, Minnesota, and Pennsylvania—and determined that they met the participation requirements. Next, staff drafted, reviewed, and finalized the agenda and worked with NAPE to identify content experts and facilitators. Then, they designed the TA Academy under the direction of Ivan Charner, director of the Academy for Educational Development's (AED) National Institute for Work and Learning and principal investigator for the NRCCTE's TA plan. Afterwards, the TA Academy asked each state team to provide detailed performance data and information about CTE definitions, measure construction, and identification of gender imbalances and to complete a survey about state services and obstacles to non-traditional completion and participation. Next, they conducted a training session for the facilitators on June 25, 2008. Finally, the TA Academy was convened at AED's offices in Washington, DC, on June 26 and June 27, 2008.

Prior to the TA Academy in 2008, each state team submitted to the organizers a *Preparing Under-represented Students for Success in Non-traditional Occupations* questionnaire asking them to rate, on a five-point Likert scale: (1) their state's level of urgency regarding student participation in and completion of programs which lead to non-traditional careers, (2) the quality of services in the state for students pursuing non-traditional careers, and (3) what barriers students face to being successful in non-traditional career preparation programs. The survey was administered again during the study to see if any changes in responses would indicate improvement in any of these areas.

Structure

The TA Academy's one-and-a-half-day TA activity aimed to assist participating states in preparing students for career pathways for which they are traditionally under-enrolled due to their gender. The TA Academy combined presentations and plenary sessions for all participants with small group TA discussions and state team working sessions.

Agenda

During the first concurrent session, five experts provided information on strategies for improving student participation in and completion of CTE programs that prepare individuals for entry into non-traditional occupations. During the second concurrent session, participants were divided into groups based on state roles and responsibilities. Each group was led by a facilitator and discussed obstacles to improving student performance and strategies for overcoming these obstacles.

Nine sessions provided: (1) Strategies for Improving Student Entry into Non-Traditional Organizations, (2) The Equity Pipeline, (3) Recruiting and Retaining Non-Traditional Learners, (4) Career Clusters and Programs of Study, (5) Interpreting and Using State Perkins Data, (6) Generating Expectations for Student Achievement (GESA), (7) Finding Common Ground, (8) Table Shells (also referred to as Data Shells), and (9) Non-Traditional Crosswalk.

During the state team working sessions, each state team worked with a facilitator to discuss goals and expectations and clarify team members' beliefs about the causes of low performance; to review lessons learned from the concurrent sessions and state non-traditional participation and completion data; and to develop a state-specific work plan that outlined objectives, activities, responsible parties, timelines, and planned outcomes for team members to follow after the TA Academy.

State Team Composition

NRCCTE offered to pay a $2,250 stipend to each state that committed to send the following five individuals to the TA Academy:

1. State director of secondary CTE programs, or his or her designee;
2. State director of postsecondary CTE programs, or his or her designee;
3. State Perkins data analyst responsible for compiling and reporting state data;
4. A business and industry (B&I) representative; and
5. State gender equity coordinator, or a workforce development coordinator or local agency representative if the state did not have a gender equity coordinator.

These individuals worked together throughout the TA Academy as the state team. The work plan developed during the TA Academy would, in theory, be the responsibility of the entire state team.

Results of the Literature Review on Effective Technical Assistance

NAPE conducted a literature search for effective technical assistance practices. Three resources were particularly helpful. Salient points from these papers are summarized below, along with comments on the TA Academy.

National Technical Assistance Consortium (NTAC)

The National Technical Assistance Consortium (NTAC), in a paper titled *Effective Technical Assistance Fact Sheet* (NTACT & Sharpton, 2000), explains that there are three types of technical assistance: program evaluation activities, time-limited technical assistance activities, and long-term activities. This last type is often called an initiative.

In *program evaluation activities*, technical assistance supports the identification of needs and assists in the validation of these identified needs. *Time-limited technical assistance activities* are usually short-term (less than six months) and generally require a "roadmap" of sequenced activities to be successful. Typically, they are more structured and process-oriented than long-term initiatives. The major outcomes of time-limited activities are pre-identified and broken down into discrete activities. Time-limited activities often reflect specialized training addressing a specific content area and may include demonstration, shaping, and modeling of new skills. A *long-term activity or initiative* usually starts as a concept or idea that requires a broad base of support to be accomplished. The final outcome is often a product of the ongoing planning and implementation of the activities conducted during the initiative. Long-term initiatives often result in new policy and procedure development and adoption of new policies or practices.

Types 2 and 3 may seem similar, but they are not. A time-limited technical assistance activity typically addresses a specific purpose and usually employs a single technical assistance strategy, such as training. The activity is not necessarily linked to another activity, nor is the activity typically linked to other efforts. Although the focus of an activity may be either on an individual or on a system, the activity often results in only short-term effects or impacts with little sustainability. In contrast, a system-wide initiative employs multiple technical assistance strategies and typically targets a key goal with multiple objectives. To be successful, initiatives must be based on valued outcomes and require sufficient resources, the use of multiple change, technical assistance strategies, and internal leadership.

NTAC and Sharpton (2000) also identify six elements of effective technical assistance: (1) technical assistance intensity should vary according to its purpose; (2) multiple stakeholders should identify technical assistance targets; (3) technical assistance should clearly articulate targets and supports; (4) technical assistance should be sequenced to continue improvement efforts; (5) technical assistance should have both individual and systemic targets; and (6) technical assistance should be designed to deliver reinforcement on a consistent schedule.

How did the TA Academy measure up? Based on its stated objectives, it appears as though the TA Academy was striving for an NTAC Type 3 result. However, the TA Academy was designed more along the lines of an NTAC Type 2. The technical assistance was short-term, process-oriented, and addressing a specific content area; and the outcomes were pre-identified and broken down into discrete activities. Notwithstanding this incongruity, it may not even be possible to provide technical assistance that results in organizational shifts in policies and practices but is offered to multiple organizations with different problems, cultures, and resources. In addition, and as stated below in the states' responses to NAPE's survey, the TA Academy did not arrange assistance to continue improvement efforts and did not deliver reinforcement on a consistent schedule.

MN SMART - Concordia University

According to the MN SMART project at Concordia University, technical assistance delivery is short in duration, is customized to meet the needs of the client, and offers prescriptive solutions to a specific issue (MN SMART, 2007). Its goals are designed to utilize recognized best practices to help organizations or individuals seeking answers to specific questions. Its relationships are program-focused and may use an interactive, on-site, hands-on approach.

Furthermore, the technical assistance provider should do seven things: (1) demonstrate expertise in applying research-based knowledge and content, best practices, and resources, (2) provide information on different strategies and resources available, (3) analyze information from observations to guide the development of program improvement goals, (4) support goals that require different levels of intensity and timelines, (5) provide support and guidance in developing a network of peers working to address similar issues, (6) use new knowledge and skills to assist clients with capacity building, and (7) provide well-documented assessment and reports.

How did the TA Academy measure up? The TA Academy planners, presenters, and facilitators demonstrated expertise in applying research-based knowledge and content, best practices, resources, and they provided information on the different strategies available. The facilitators assisted states in developing work plans with different levels of intensity and timelines, but the work plans may not have been evaluated to determine whether they addressed the identified problems and were realistic and sustainable. Although during one Academy session, participants were broken out by roles and responsibilities during the activity, some participants have commented that it would have been helpful if the TA Academy had guided Post-TA Academy peer networking to connect those who had similar roles, thereby providing some structure to Post-TA Academy activities.

Mattson and McDonald

Mattson and McDonald (2005) identified the following steps to effective technical assistance:

1. Investigate and identify priority needs for technical assistance
2. Identify purposes, measurable goals and objectives, and outcomes
3. Identify services and agree of amount and duration
4. Develop a plan
5. Implement the plan
6. Establish mutual accountability for technical assistance and outcomes. Specifically, the client must be accountable to the technical assistance provider by sharing information, working cooperatively, and carrying out responsibilities according to planned timelines. The provider must be accountable for the quality, appropriateness, and timeliness of the technical assistance provided.
7. Develop an evaluation plan of the plan and services:
8. Establish an evaluation team
9. Specify goals and objectives
10. Formulate evaluation questions related to goals and objectives

11. Formulate the outcomes of the technical assistance
12. Design a formative and summative evaluation plan
13. Implement the plan by collecting data
14. Analyze the data
15. Report the results

How did the TA Academy measure up? The TA Academy carried out Tasks 1-5. Where the process broke down was at the end of Task 5, that is, the state teams were not held accountable for carrying out their work plan responsibilities and the TA Academy was not held accountable for sequencing its assistance. Furthermore, an evaluation of the TA Academy's effectiveness was not held in a timely manner.

Survey and Interview Processes

In the spring of 2011, Alabama, Georgia, Minnesota, and Pennsylvania accepted NAPE's invitation to participate in a follow-up study of the TA Academy consisting of a survey and a 20-minute interview. NAPE designed the survey using the SurveyMonkey tool and posed questions about demographics, the Perkins set-aside, state team composition, TA Academy elements, usefulness of sessions and materials provided, and Post-TA Academy activities including progress toward meeting work plan objectives.

The SurveyMonkey tool included a pre-determined list of expected Post-TA Academy activities, ranging from positive outcomes to negative or unknown outcomes:

- We conducted a presentation to other staff about what occurred at the TA Academy.
- We created a broad team of individuals (agency staff and others) to further develop the work plan.
- We created a state advisory group on non-traditional career preparation.
- We conducted professional development with administrators on effective practices of recruiting and retaining under-represented gender students in non-traditional CTE programs.
- We conducted professional development with teachers on effective practices of recruiting and retaining under-represented gender students in non-traditional CTE programs.
- We conducted professional development with administrators on strategies to collect accurate local program data.
- We improved data collection for the non-traditional measures.
- We used the national non-traditional crosswalk to identify non-traditional programs in the state for data collection at the local level.
- We used the table shells provided at the TA Academy to analyze local educational agency (LEA) performance on the non-traditional measures.
- We aligned the use of Perkins state leadership non-traditional set-aside with the TA Academy work plan.
- We have made significant progress in implementing our work plan.
- No one was interested in hearing about the TA Academy or continuing development of the work plan.
- Non-traditional courses of study or occupations are not important or are not priority areas

in my state.
- The team was sidetracked by other responsibilities or competing interests.
- The team lost momentum or enthusiasm.
- My job responsibilities do not support continuing work on the plan.
- I do not know.

In addition, the authors conducted interviews with at least two Academy participants from each state. Questions centered on the application process, the content and length of the TA Academy, implementation of work plan activities, and recommendations for future Academies.

It is important to note that NAPE was unable to engage all attendees in the survey and interview processes for differing reasons. Several of the attendees have since retired or transferred and were no longer available to provide input, which raises concerns about loss of institutional knowledge, especially about the TA Academy experience. Because of the lapsed time since the TA Academy, several of the attendees did not remember attending or were concerned that their recall would be inadequate for NAPE's purposes. There were discrepancies between the list of attendees in the *Report on the First Annual State Technical Assistance Academy* (NAPE, 2009) and actual attendance. Finally, for the most part, the B&I representatives were not included in the Post-TA Academy efforts by other members of the state teams and were therefore disinclined to participate in the follow-up study. Reasons for such an exclusion are explored later in this report.

State-Specific Information

Alabama

Background Information

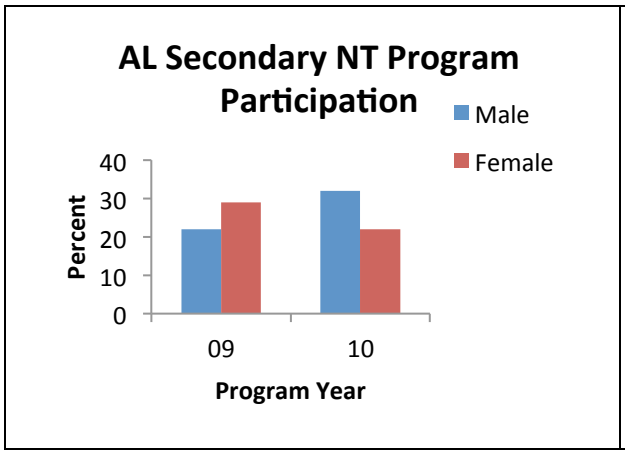
Identified barriers. Alabama states in its application the first problem has been the lack of recruitment of students at the local level into training programs because of gender perceptions or stereotypes of communities, parents, and peers of students who may be interested in non-traditional occupations and of minimal efforts to retain students. A problem at the postsecondary level involves the difficulties experienced by non-traditional programs in graduating students because of the overwhelming need for knowledge and skills gained, cultural stereotypes, and biased guidance by counselors. Manufacturing, construction, and health sciences seem to be most impacted by these factors.

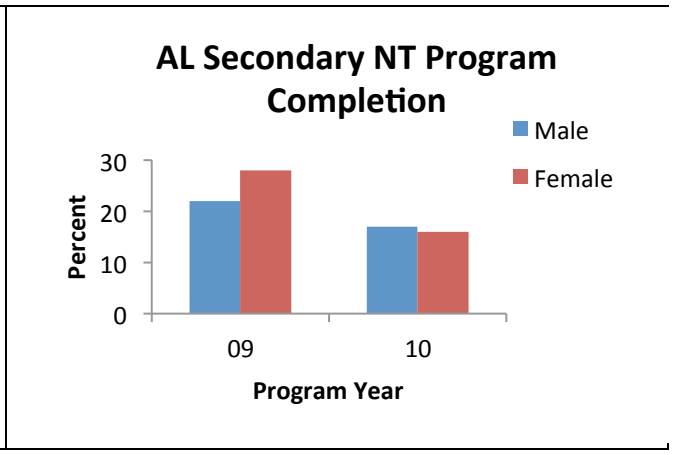
Steps taken to assist local education agencies (LEAs) in non-traditional participation and completion. Alabama explains in its application it has set aside the required funds through competitive applications (Request for Proposals; RFPs). That state provides technical assistance to all LEAs that are interested in the RFPs. After applications are awarded, the state provides additional technical assistance to facilitate the activities identified in the winning applications. At the postsecondary level, colleges must report on the activities they have incorporated to improve enrollment, retention, and graduation rates.

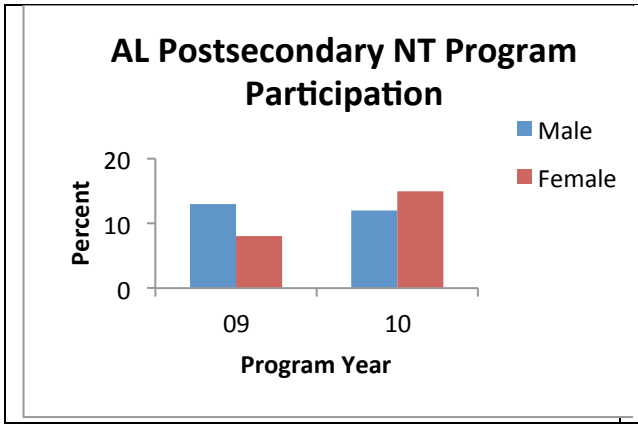
Baseline performance data. Using CAR data for PYs 2008, 2009, and 2010, NAPE analyzed Alabama's core indicators, disaggregated by gender and grand total, and enrollment regarding

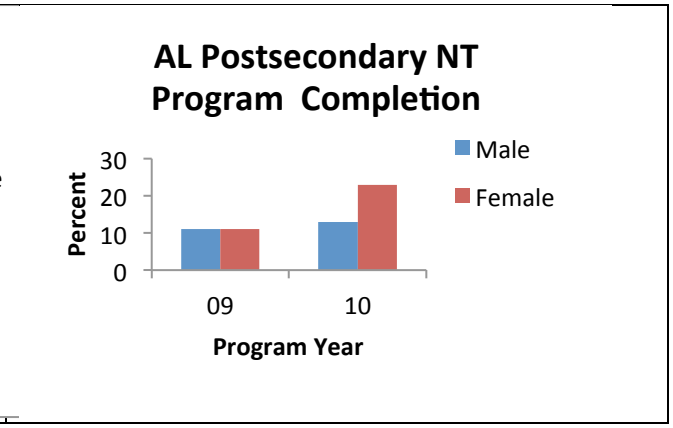
CTE concentrators, disaggregated by gender and cluster.

Core indicators (gender disaggregation). As illustrated by the charts below, at the secondary level, the participation rate of males in programs not traditional for their gender increased by close to 50%, but the completion rate decreased. For females, the secondary participation and completion rates decreased. At the postsecondary level, the participation rate of males in programs not traditional for their gender increased slightly and the completion rate decreased slightly. For females, in contrast to secondary performance, the participation and completion rates increased substantially. The volatility of the secondary data for both males and females and at the postsecondary level for females is not readily explainable but could be due to a number of factors such as data collection issues, changes in non-traditional program identification, or the opening or closing of programs, which would cause significant increases or decreases in important factors for calculations.







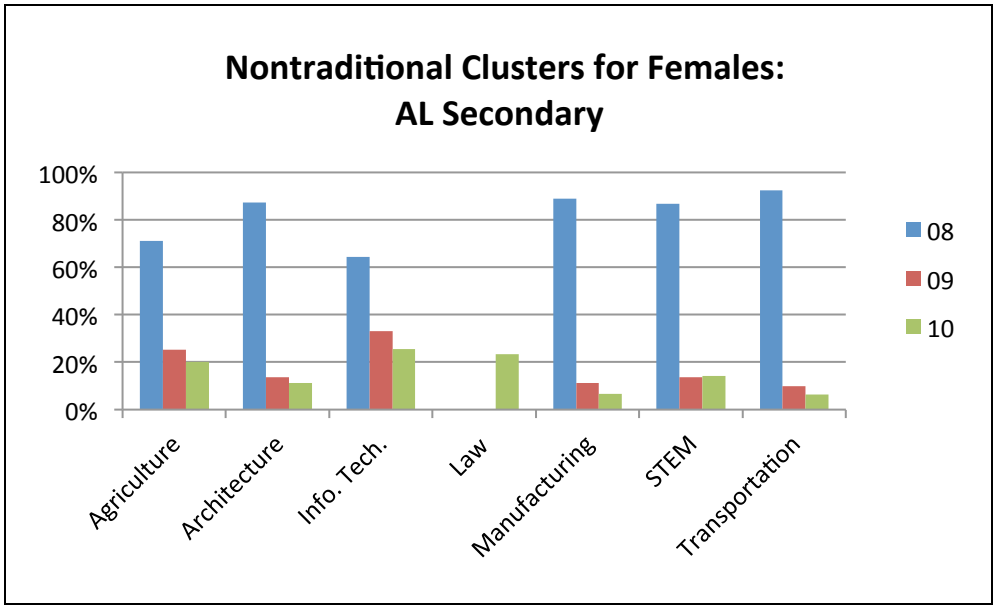


Core indicators (grand total disaggregation). As indicated in the table below, Alabama met all grand total targets except PY09 postsecondary participation and completion.

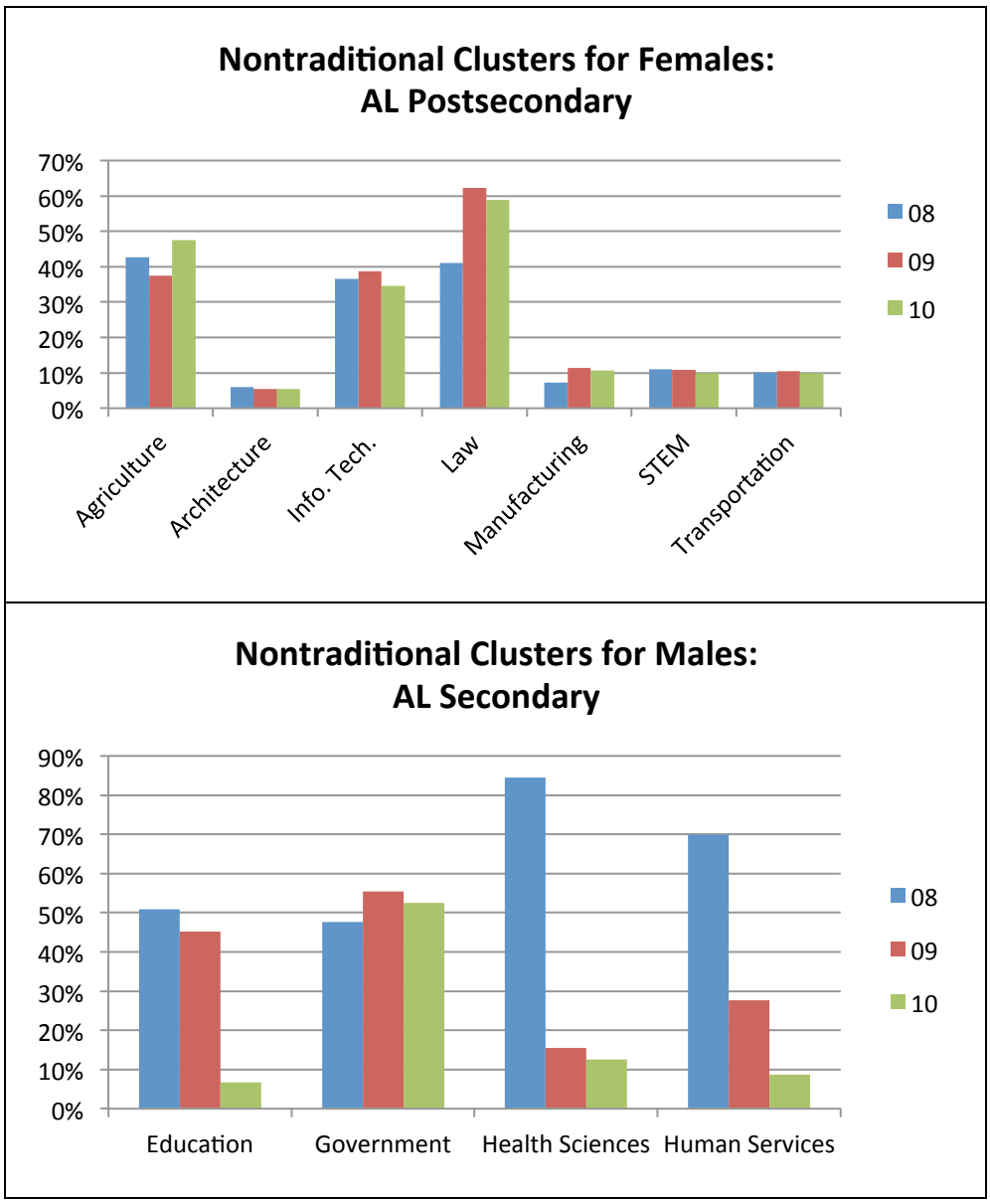
Table 1
Alabama Grand Total Performance

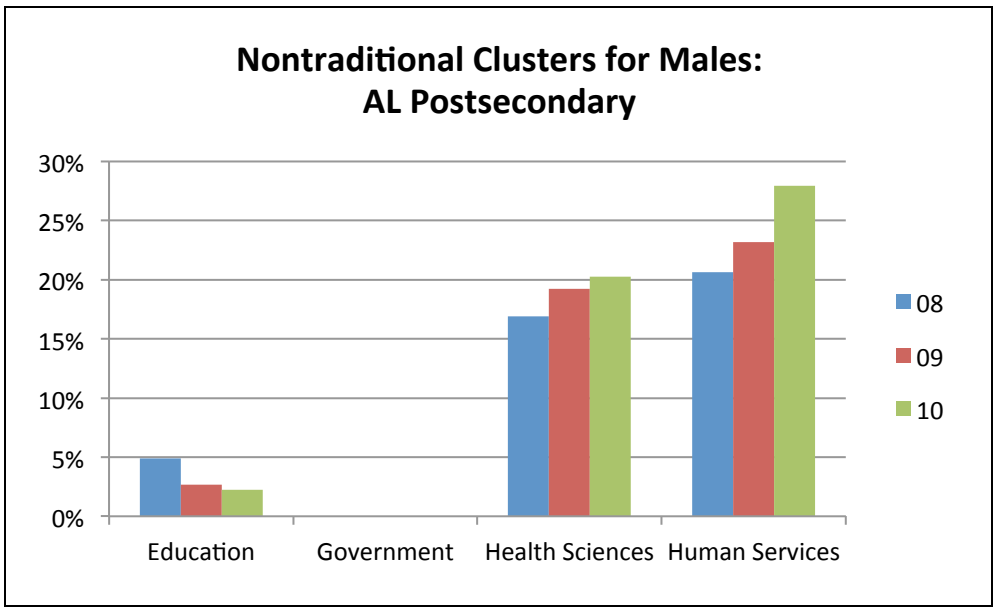
Secondary	08-09		09-10	
	Target	Actual	Target	Actual
Participation	17.00%	28.43%	17.25%	22.62%
Completion	17.00%	27.14%	12.00%	16.19%
Postsecondary	08-09		09-10	
	Target	Actual	Target	Actual
Participation	11.27%	10.98%	12.00%	17.00%
Completion	11.00%	10.53%	11.50%	13.32%

Enrollment (gender and cluster).[3] Based on the CAR data, for at least one of the past three program years at either the secondary or postsecondary level, Alabama reported the Agriculture, Architecture, Law, Manufacturing, STEM, and Transportation Clusters as having the female enrollments less than 25% and the Education, Health Sciences, and Human Services Clusters as having male enrollments of less than 25%. The charts below also display Information Technology for females and Government for males, because they were reported as having less than 25% enrollment for those genders by at least one other state under study. Again, the volatility of the data suggests a data quality issue for PY08 as it appears Alabama transposed its male and female data when reporting secondary enrollment for PY08.



[3] For all states, the percentage for females is calculated as: number of females/(number of females + number of males) enrolled in the cluster, and the percentage of males is calculated as: number of males/(number of males + number of females) enrolled in the cluster.


Nontraditional Clusters for Females:
AL Postsecondary
70%
60%
50%
40%
30%
20%
10%
0%
Agriculture
Architecture
Info. Tech.
Law
Manufacturing
STEM
Transportation
08
09
10
Nontraditional Clusters for Males:
AL Secondary
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Education
Government
Health Sciences
Human Services
08
09
10



Survey and interview responses. According to the first report, five individuals from Alabama attended the TA Academy. One has since retired, and one reports that she didn't attend. Of the remaining three, only one completed the survey. The respondent was also interviewed. As such, the authors have omitted a tabulation of data in favor of a summary of responses.

In response to the statement "It has been important to achieving the work plan objectives that the following individuals remained on the team after the TA Academy," the respondent strongly disagreed regarding the B&I representative and had no response regarding the secondary state director, the postsecondary state director, the Perkins data analyst, the gender equity coordinator, the workforce development coordinator, and the local agency representative. The following statements reflecting on the TA Academy were done on a four-point scale, ranging from "strongly disagree" to "strongly agree." The respondent agreed with the statement, "1.5 days was an adequate length of time for the TA Academy." In response to the statement, "It was sufficient to hold the TA Academy just once," she disagreed. She agreed with the statement, "What I learned would have been reinforced if there had been follow-up." In response to the statement, "The application process prepared my team for the TA Academy, she disagreed. The respondent strongly agreed with the statement, "It was effective to include a B&I representative." She agreed with both "The TA Academy achieved its goal to raise the awareness of barriers and obstacles to student participation in, and completion of, non-traditional programs," and with "The TA Academy achieved its goal to offer strategies to streamline the collection of accurate local program data." The respondent disagreed with the statement, "The TA Academy achieved its goal to provide analytic tools to identify under- and out-performing providers." Finally, she agreed with the statement, "The TA Academy achieved its goal to describe research-based approaches for improving statewide performance on the measures."

In response to the question, "Would you keep, change, or remove the following elements of the TA Academy," she elected to keep "Application," "Stipend," "Access to experts at Academy," and "Facilitated breakout sessions for teams to develop work plans." The respondent wanted to

change "Concurrent session on strategies for improving student practices." Finally, she did not respond regarding "Data submission," "Length of 1.5 days," "Data shells," and "Required development of work plans."

When asked to "rate the usefulness of the following sessions and the materials provided," the respondent rated "Strategies for Improving Student Entry into NTOs," "Recruiting and Retaining NT Learners," "Career Clusters and Programs of Study," and "Interpreting and Using State Perkins Data" as "Somewhat useful." She rated "The Equity Pipeline," "Generating Expectations for Student Achievement (GESA)," "Finding Common Ground," and "Non-traditional Crosswalk" as "Very Useful." Finally, the respondent did not reply regarding "Table shells."

Upon given the chance to make recommendations, the respondent replied, "It would be helpful to have templates from successful program implementation success, from recruitment to hidden barriers, program completion and credentialing."

Summary observations of the TA Academy's structure and effectiveness. The respondent agreed one-and-a-half days was an adequate length of time and what she learned would have been reinforced if there had been follow-up. She indicated the application process did not prepare the state team for the TA Academy, although it did force the team members to sit down and talk about issues surrounding participation and the attractiveness of "the grant." The team also realized it needed to focus the state's program or grant objectives more strongly. She believed it was not sufficient to hold the TA Academy just once. She agreed the TA Academy met all of its goals except to provide analytic tools to identify under- and out-performing providers and programs. She rated all of the sessions (except Data Shells) as somewhat or very useful.

During the interview, she explained, while waiting for their plane home, several team members expressed a wish to have had more time to reflect as a team on what they had learned, what they wanted to take back to the state, and with whom they wanted share it.

Post-TA Academy activities. Of the pre-determined list of Post-TA Academy activities, Alabama completed only conducting a presentation to other staff about what occurred at the TA Academy. The state also presented the information to the statewide business and industry council for secondary CTE.

Progress on Work Plans

Pre-TA Academy work plan. In its application, Alabama stated it would identify, using the Department of Industrial Relations labor market information, the occupations in demand in the state. It would then require each sub-recipient of Perkins funds to target a percentage of those allocated funds towards activities in those programs with courses or subjects which prepare students for non-traditional occupations. Similar activities would occur at the postsecondary level. At the time of the application, a plan was in place to develop a mandatory orientation course in which students will use the labor market information (LMI) data to research various fields. Other activities would include greater emphasis on in-service discussion with deans, faculty, and registrars to bring about an awareness of opportunities and methods to encourage

enrollment and completion of knowledge and skills acquisition in non-traditional fields.

Academy work plan results Post-TA Academy. The respondents were asked to indicate the state's progress in completing each activity in the work plan developed during the TA Academy. Again, only one person responded, so the authors chose to summarize rather than tabulate the results.

When asked if the state followed its plan to improve secondary and postsecondary collaboration, the respondent replied "Didn't attempt" to both choices of "Conduct quarterly secondary and postsecondary work sessions" and "Hold fall meeting of secondary and postsecondary CTE administrators to discuss goals."

The state had indicated it would identify opportunities to gain input from business and industry by pursuing one specific activity. The respondent replied "I don't know" to whether or not that activity, "Hold secondary CTE advisory committee meeting to discuss business and industry partnerships," was completed.

When asked if the state identified strategies for dissemination of information to locals and colleges through specific activities, the respondent replied, "In progress" for "New Teacher Institute," "Completed" to "AL ACTE concurrent session" and "Secondary CTE administrators," and "I don't know" to "Postsecondary instructional officer" and "AL College Association Annual Conference."

The respondent was asked if the state increased "interest and awareness of non-traditional occupations and availability of funding for non-traditional occupations" through a specified activity. The respondent replied "Competed" to "Explore options for the use and distribution of non-traditional set-aside."

The state indicated it would improve data quality by pursuing three activities, "Access technical assistance from MPR through OVAE technical assistance program," "Review data for quality and determine problems and solutions," and "Advocate for policy changes to improve data quality." The respondent replied "I don't know" to all three.

Summary observations on the work plan outcomes. Although NAPE heard from only one participant, it appears evident that the majority of work plan activities were not accomplished, or, if they were, their results were not communicated to the entire team. During the interview, the secondary representative admitted the team fell apart after the TA Academy, largely because the team members are geographically disbursed.

Georgia

Background Information

Identified barriers. In its application, Georgia stated it experienced problems in obtaining local understanding and acceptance of the new "career pathways" concept. The second barrier related to data collection at both the secondary and postsecondary level. Specifically, the accuracy of

data could not be guaranteed until all three phases of curriculum implementation were complete and all new or revised curricula and course numbers are aligned with the 16 clusters and pathways.

Steps taken to assist LEAs in non-traditional participation and completion. Georgia also explained in its application it worked with Georgia Career Information Systems to identify non-traditional occupations on its website. The state provided professional learning via distribution of *Taking the Road Less Traveled: A Educators Toolkit for Students in Non-traditional Careers*, developed by the Multi-State Academic and Vocational Curriculum Consortium (MAVCC) and NAPE, and facilitated three one-day workshops to provide technical assistance regarding non-traditional participation in and completion of identified pathways. The state emphasized non-traditional strategies at the local level during Career, Technical, and Agriculture Education (CTAE) program reviews. The state purchased and distributed customized copies of the *American Careers Magazine for Parents: Non-Traditional Careers Edition* in middle schools. Finally, the state joined NAPE and attended NAPE's Professional Development Institute (PDI).

Furthermore, at the postsecondary level, Georgia developed a definition of high-skill, high-wage, and high-demand occupations with Georgia Career Information Systems and encouraged local colleges to develop marketing materials which promote those defined occupations in non-traditional fields. Each technical college is required to have a special populations coordinator; the coordinators meet regularly to discuss issues and share best practices and have been encouraged to use materials such as the MAVCC products. The state offered a discussion listserv for local college coordinators and encouraged the coordinators to attend NAPE's PDI.

Pre-TA Academy questionnaire. Georgia's pre- and Post-TA Academy responses to the *Preparing Under-Represented Students for Success in Non-Traditional Occupations* questionnaire may be found in Appendix A. In summary, Georgia's responses to the *Background and Beliefs Survey* indicated a continuing concern and priority for improving performance on the non-traditional measures, an improved rating of the services available supporting students in non-traditional programs, and a similar rating for the barriers students face in non-traditional programs.

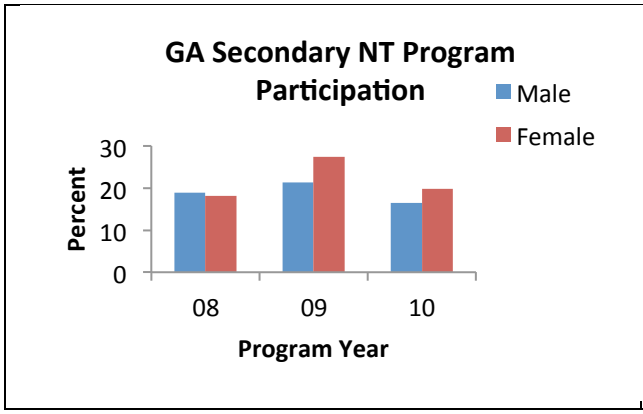
Baseline performance data. Using CAR data for PYs 2008, 2009, and 2010, NAPE analyzed Georgia's core indicators, disaggregated by gender and grand total, and enrollment of CTE concentrators, disaggregated by gender and cluster.

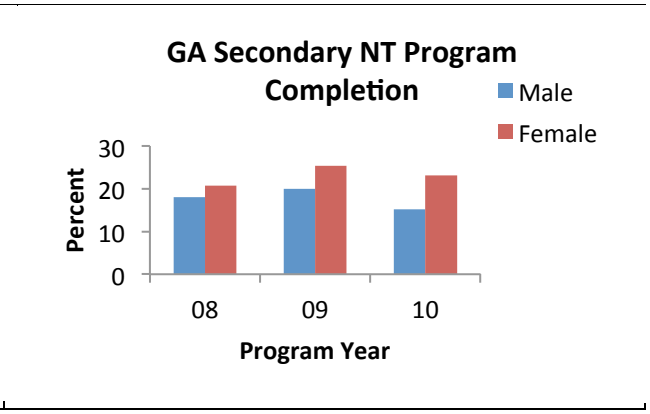
Core indicator (gender disaggregation). As illustrated by the charts below, at the secondary level, the participation and completion rates for males in programs not traditional for their gender increased from PY08 to PY09 then dropped from PY09 to PY10 to below PY08 levels. For females, the participation and completion rates increased significantly from PY08 to PY09 then dropped from PY09 to PY10 to above PY08 levels. At the postsecondary level, the participation rate for males in programs not traditional for their gender increased slightly from PY09 to PY10, while the completion rate decreased. For females, the postsecondary participation and completion rates decreased from PY09 to PY10. With the exception of secondary participation, the rates for females exceeded the rates for males.

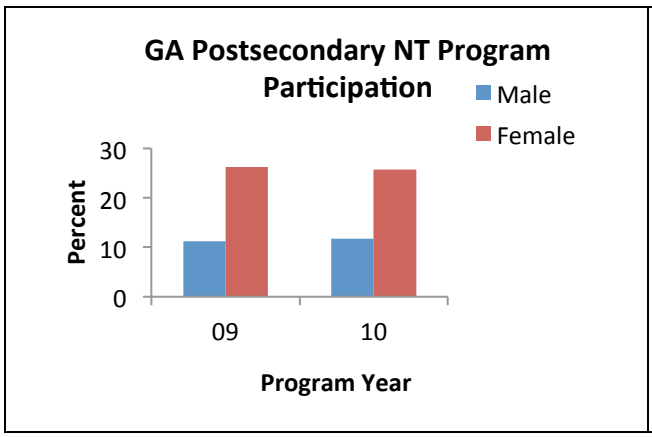
Core indicators (grand total disaggregation). As indicated in the table below, Georgia met only one grand total secondary target in PY09 and PY10 (PY09 participation), and the actual participation and completion rates decreased from PY09 to PY10. It is important to note three of the four targets were exceptionally high: the three performance measures not met at the secondary level. This would make one believe these targets were negotiated in error as they have no relevance to previous year's data. In contrast, Georgia met three of four postsecondary targets, with only a decrease in the completion rate to below target in PY10.

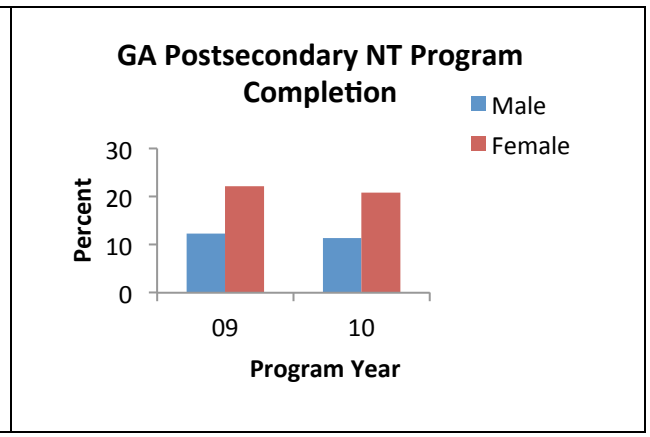
Table 2
Georgia Grand Total Performance

Secondary	07-08		08-09		09-10	
	Target	*Actual*	*Target*	*Actual*	*Target*	*Actual*
Participation	NA	18.53%	16.00%	24.63%	40.89%	18.28%
Completion	NA	19.26%	86.50%	22.81%	45.61%	19.38%
Postsecondary						
	Target	*Actual*	*Target*	*Actual*	*Target*	*Actual*
Participation	NA	NA	16.72%	17.75%	17.25%	17.78%
Completion	NA	NA	17.01%	17.27%	17.15%	15.97%

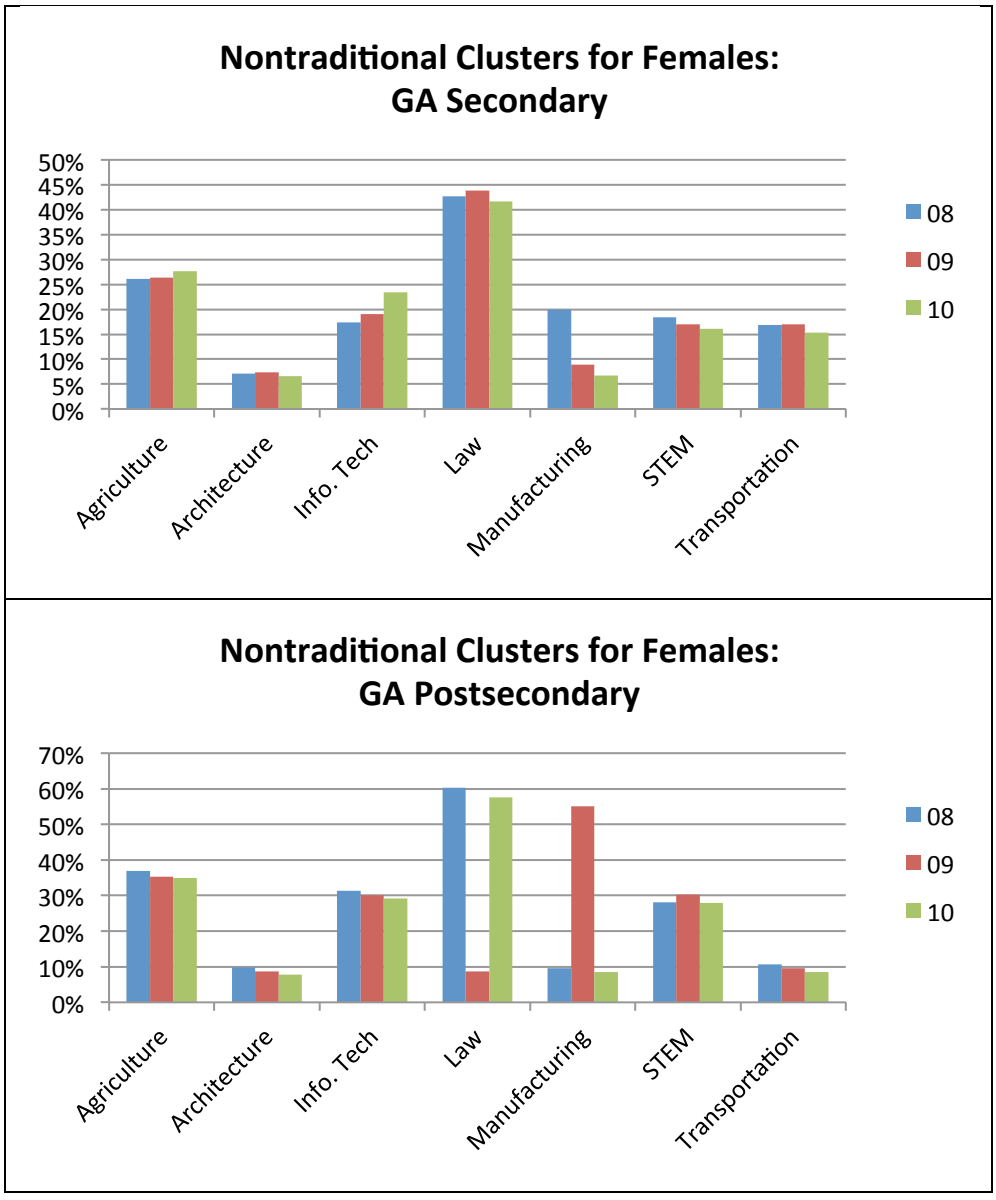


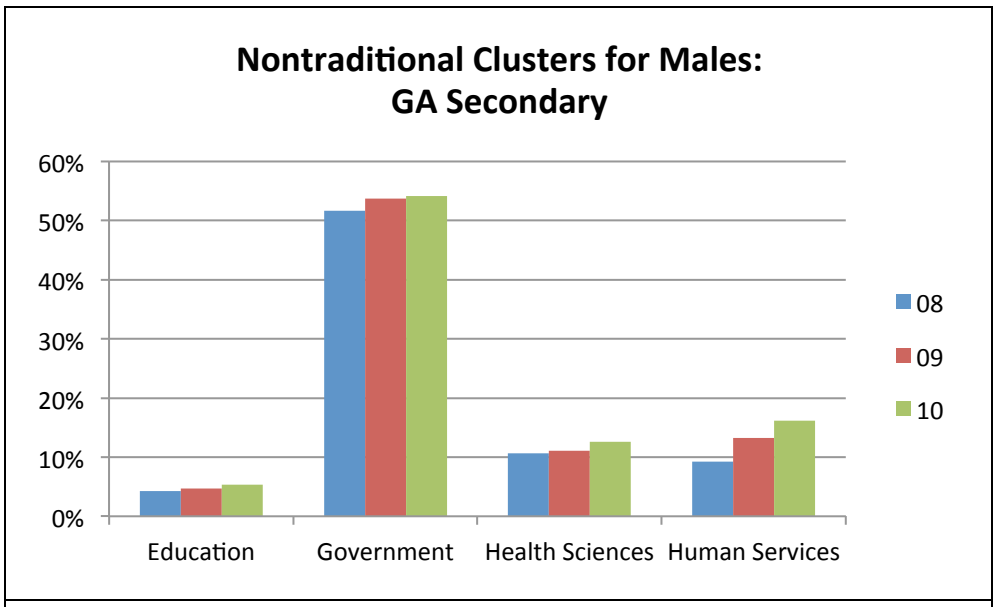


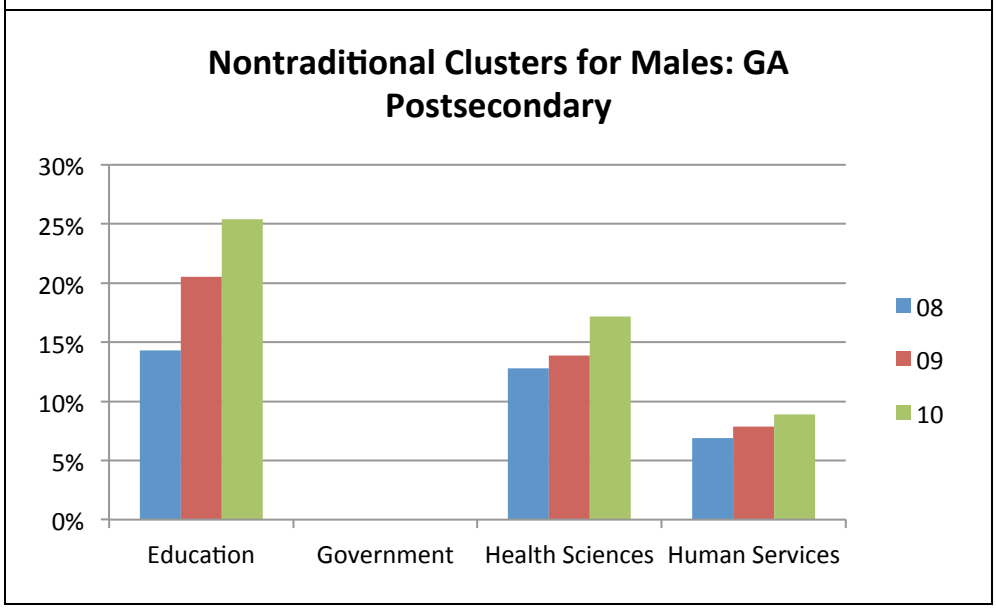




Enrollment (gender and cluster). Based on the CAR data, for at least one of the past three program years at either the secondary or postsecondary level, Georgia reported the Architecture, Information Technology, Law, Manufacturing, STEM, and Transportation Clusters as enrolling less than 25% females and the Education, Health Sciences, and Human Services Clusters as enrolling less than 25% males. The charts below also display Agriculture for females and Government for males, because they were reported as having enrollments less than 25% for those genders by at least one other state under study.







Survey and Interview Responses. Of the five individuals from Georgia who were listed in the first report (NAPE, 2009) as attending the TA Academy, three (all from postsecondary) responded to the survey, and three (two postsecondary and one secondary) agreed to an interview.

Table 3
Team Composition

It has been important to achieving the work plan objectives that the following individuals remained on the team after the TA Academy:					
	Strongly Disagree	Disagree	Agree	Strongly Agree	Number of Responses
Secondary State Director	0%	50%	0%	50%	2
Postsecondary State Director	0%	0%	33%	**67%**	3

Perkins Data Analyst	0%	0%	33%	**67%**	3
Gender Equity Coordinator	0%	0%	33%	67%	3
Workforce Development Coordinator	0%	0%	0%	0%	0
Local Agency Representative	0%	0%	100%	0%	1
B&I Representative	50%	0%	50%	0%	2

Table 4
Reflections on the TA Academy

Please indicate if you agree or disagree with the following statements:					
	Strongly Disagree	Disagree	Agree	Strongly Agree	Number of Responses
1.5 days was an adequate length of time for the TA Academy	0%	0%	**100%**	0%	3
It was sufficient to hold the TA Academy just once	0%	**67%**	33%	0%	3
What I learned would have been reinforced if there had been follow-up.	0%	0%	33%	6**7%**	3
The application process prepared my team for the TA Academy.	0%	33%	**67%**	0%	3
It was effective to include a B&I Rep.	0%	33%	**67%**	0%	3
The TA Academy achieved its goal to raise the awareness of barriers and obstacles to student participation in, and completion of, non-traditional programs.	0%	0%	**100%**	0%	3
The TA Academy achieved its goal to offer strategies to streamline the collection of accurate local program data.	0%	0%	**100%**	0%	3
The TA Academy achieved its goal to provide analytic tools to identify under- and out-performing providers.	0%	33%	**67%**	0%	3
The TA Academy achieved its goal to describe research-based approaches for improving statewide performance on the measures.	0%	33%	**67%**	0%	3

Table 5
Elements of the TA Academy

Would you keep, change, or remove the following elements of the TA Academy?				
	Keep	Change	Remove	Number of Responses
Application	**100%**			3
Data submission	**100%**			3
Stipend	**100%**			3
Access to experts at Academy	**100%**			3
Facilitated breakout sessions for teams to develop work plans	**100%**			3
Concurrent session on strategies for improving student practices	**100%**			3
Length of 1.5 days	**100%**			3
Data shells	**100%**			3
Required development of work plans	**100%**			3

Survey Comments: I couldn't remember some of the details. Some of the topics tend to bleed over into other presentations at other events or a combination of presentations from multiple events.

Table 6
Usefulness of Sessions and Materials

Please rate the usefulness of the following sessions and the materials provided:						
	Not useful	Somewhat useful	Very Useful	Didn't attend	Don't Remember	Number of Responses
Strategies for Improving Student Entry into NTOs			**100%**			3
The Equity Pipeline			**100%**			3
Recruiting and Retaining NT Learners		33%	33%		33%	3
Career Clusters and Programs of Study		33%			**67%**	3
Interpreting and Using State Perkins Data			**100%**			3
Generating Expectations for Student Achievement (GESA)		33%			**67%**	3
Finding Common Ground			**100%**			3
Table shells			33%		**67%**	3
Non-traditional Crosswalk			**100%**			3

Upon reflection, what recommendations do you have for strategies to improve the TA Academy and the technical assistance received from the NRCCTE and/or the U.S. Department of

Education, Office of Vocational and Adult Education on increasing the participation and completion on under-represented gender students in non-traditional CTE programs?

***Survey Comments**:*

- Accountability for specific tasks required in the action plan.
- The TA Academy was good, but I just think more follow-up afterwards would have been good.

***Summary observations of the TA Academy's structure and effectiveness**.* Regarding the team composition, the only dissenting votes were for the secondary State Director and the B&I Representative. Although two of the three survey respondents agreed it was effective to include a B&I Representative on the team, the interviews revealed it was difficult for the state to find a business person to attend, and he was not involved with the team after the TA Academy.

All three survey respondents recommended keeping all elements of the TA Academy intact. Although the survey respondents agreed the application process prepared the team for the TA Academy, the interviews revealed some confusion about who actually prepared the application. At least two of the three survey respondents agreed one-and-a-half days was an adequate length of time, but the interviews revealed this conclusion was largely based on state travel constraints. At least two of the three survey respondents agreed that it was insufficient to hold the TA Academy just once and there should have been follow-up. One interviewee stated the state greatly benefited from separately contracted, follow-up training on the Five-Step Improvement Process, a process of which it became aware during the one of the TA Academy's sessions.

At least two out of three survey respondents agreed the TA Academy accomplished its four goals. It may be important to note, however, the representative from the Department of Education (secondary) did not agree that the TA Academy achieved its goals of providing analytic tools to identify under- and out-performing providers and describing research-based approaches for improving statewide performance on measures.

Two of the three survey respondents did not remember the Career Clusters, Interpreting and Using State Perkins Data, and Table Shells sessions. All of other sessions were rated somewhat useful or very useful.

An interviewee stated two great things came out of the TA Academy: (1) "getting us all in a room together with experts, talking with neutral people who provided a lot of really good feedback, and allowing us to focus on this issue with a plan that would be held over our heads to make sure it really happened;" and (2) "getting us involved in the STEM Equity Pipeline Project."

Post-TA Academy activities. Two out of three of respondents agreed that, after the TA Academy, the state conducted professional development with administrators on effective practices of recruiting and retaining under-represented gender students in non-traditional CTE programs and improved data collection for the non-traditional measures. Additionally, two out of three believed the team made significant progress in implementing the work plan but also lost momentum and enthusiasm.

- We conducted a presentation to other staff about what occurred at the TA Academy—33%
- We created a broad team of individuals (agency staff and others) to further develop the work plan—33%
- We created a state advisory group on non-traditional career preparation—0%
- We conducted professional development with administrators on effective practices of recruiting and retaining under-represented gender student in non-traditional CTE programs—67%
- We conducted professional development with teachers on effective practices of recruiting and retaining under-represented gender student in non-traditional CTE programs—33%
- We conducted professional development with administrators on strategies to collect accurate local program data—33%
- We improved data collection for the non-traditional measures—67%
- We used the national non-traditional crosswalk to identify non-traditional programs in the state for data collection at the local level—33%
- We used the table shells provided at the TA Academy to analyze local educational agency performance on the non-traditional measures—33%
- We aligned the use of Perkins state leadership non-traditional set-aside with the TA Academy work plan—67%
- We have made significant progress in implementing our work plan—67%
- No one was interested in hearing about the TA Academy or continuing development of the work plan—0%
- Non-traditional courses of study/occupations are not important or are not priority areas in my state—0%
- The team was sidetracked by other responsibilities/competing interests—33%
- The team lost momentum/enthusiasm—67%
- My job responsibilities do not support continuing work on the plan—0%
- I don't know—0%

Progress on Work Plans

Pre-TA Academy work plan. In its application, Georgia stated it would share best practices and strategies with LEAs and technical colleges through train-the-trainer model workshops and would distribute information via the discussion listserv. In addition, the state would work with individuals in LEAs and technical colleges who need technical assistance to meet non-traditional benchmarks.

Academy work plan. The respondents were asked to indicate the state's progress in completing each activity in the work plan developed during the TA Academy. The results are summarized in tabular form below.

Table 7
Data for Improvement

Your state indicated that it would provide accurate, usable, and specific data that support improvement in non-traditional awareness, actions, and outcomes by pursuing the following activities.						
	Didn't attempt	Attempted, but failed	In progress	Completed	I don't know	Number of Responses
Describe to programmers the exact specifications for the desired data				**100%**		3
Run data.				**100%**		3
Analyze raw data with respect to sites, programs, and BLS data				**100%**		2
Provide user-friendly, actionable data for practitioners.				**100%**		3
Provide training in how to read and make use of data.				**100%**		2
Produce and disseminate higher level, statewide analysis.				**100%**		3
Develop surveys, focus groups, and other new data from current students and educators.	50%				50%	2

***Survey Comments**:* The following is a link to Google Docs, where Georgia's data can be accessed for Perkins: http://tiny.cc/GAPerkins.

Table 8
Advisory Council

Your state indicated that it would establish a state-wide cross-agency, non-traditional advisory council by pursuing the following activity.						
	Didn't attempt	Attempted, but failed	In progress	Completed	I don't know	Number of Responses
Each agency will identify potential members for the council.	**67%**	33%				3
Determine meeting schedule and agenda.	**67%**	33%				3

***Survey Comments**:* At the time we wanted to proceed with the project but due to our budget issues we were not given permission to proceed.

Table 9
College and School Activities

Your state indicated that it would provide specific, positive activities for colleges and schools to increase non-traditional career communication, awareness, actions, and outcomes by pursuing the following activities:						
	Didn't attempt	Attempted, but failed	In progress	Completed	I don't know	Number of Responses
Contract with [NAPE] to conduct five-step training.				**100%**		3
Conduct GESA/SAGE training at new teacher institute, CTAE directors and supervisors.				33%	**67%**	3

Table 10
Career Concentrations/Pathways

Your state indicated that it would infuse equity, diversity, and non-traditional in career concentrations/pathways initiatives by pursuing the following activities:						
	Didn't attempt	Attempted, but failed	In progress	Completed	I don't know	Number of Responses
Survey those who attend NTO awareness workshops to determine the effectiveness of the awareness and recruitment				**67%**	33%	3

information.						
Replicate a paper version of the workshop materials to create professional NTO notebook to distribute at GA ACTE conference.				33%	**67%**	3
Follow-up with supervisors that did not attend workshops.	33%				**67%**	3
Encourage state program to conduct NTO sessions at the curriculum conferences.	33%			33%	33%	3
Include non-traditional information in the CTAE supervisor training program.				33%	**67%**	3

Summary observations on the work plan outcomes. All three respondents agreed all but one of the activities aimed at providing accurate, usable, and specific data that support improvement in non-traditional awareness, actions, and outcomes (the first objective) have been completed. All three respondents agreed the team attempted but did not succeed, or did not attempt, to establish a state-wide, cross-agency, non-traditional advisory council. The reason given was budget constraints. It appears as though both activities for the third objective have also been completed, although two of the respondents did not know about the second activity.

Regarding the last objective—to infuse equity, diversity, and non-traditional occupational opportunities in career concentrations or pathways initiatives—agreement about the progress of completion was not unanimous. However, it appears as though these activities were targeted at the secondary level; if one looks only at the response from the secondary representative, it can be shown four of the activities were completed, and one was not attempted.

Overall, of the 16 activities, 12 have been completed, three were not attempted, and the status of the remaining one is unknown. However, it is important to note one interviewee indicated the team members did not meet again as a group after the TA Academy. The three interviewees agreed their facilitator was very helpful and the team members should have somehow been held accountable for completing the work plan activities.

During the interviews, the Georgia team was asked once again to complete the "Preparing Under-represented Students for Success in Non-Traditional Occupations" questionnaire. The answers were compiled and compared against the teams' Pre-TA Academy answers to determine whether the participants' perceptions about obstacles to student participation in and completion of CTE programs which are non-traditional for their gender changed as a result of the TA

Academy.[2] In summary, Georgia's responses to the questionnaire indicated a continuing concern and priority for improving performance on the non-traditional measures, an improved rating of the services available supporting students in non-traditional programs, and a similar rating for the barriers students face in non-traditional programs.

Case study: Georgia's Actions Following the TA Academy

Secondary/postsecondary professional development partnership. Upon returning home from the TA Academy, the Georgia team expanded one of its work plan activities, "Contract with [the author] to conduct five-step training" and embarked on a state-wide non-traditional program improvement effort conducted jointly the by the Georgia Department of Education and the Technical College System of Georgia (TCSG). The secondary and postsecondary partnership was cited as an outcome of the TA Academy. This effort included conducting training with secondary and postsecondary site teams and targeting the submission of their fiscal year (FY) 2010 Local Perkins Plans towards improving performance on the non-traditional core indicators.

On January 29, 2009, the author went to Atlanta to conduct training with representatives from 62 secondary and postsecondary institutions from across the state. The training was conducted with teams in the Atlanta area in person and televised over the state's distance learning system to nine educational training centers. Each training center location was hosted by a facilitator trained to assist the teams in developing their local plans and to lead the hands-on activities to be conducted as part of the training. The training included the completion of a performance gap analysis using Georgia's Perkins performance data for each school and program, disaggregated by gender, race or ethnicity, and special population status. Training was conducted on research-based root causes which are barriers to students' access and success in non-traditional career preparation programs. Teams then created a hypothesis as to which root causes they thought were in effect at their school and identified action-research strategies to test their theory and to identify the root causes actually in existence. Training was conducted on research-based strategies which impact the identified root causes, and each team, based on its theories, identified potential strategies to implement through their local Perkins plans.

On March 11, 2009, a follow-up webinar was conducted to train teams in the evaluation step of the Five-Step Program Improvement Process to ensure that the local Perkins plans included appropriate and measureable objectives in addition to the longer term outcome measure of the core indicators.

Postsecondary follow-up. At the postsecondary level, the TCSG required every technical college to complete a "Non-Traditional Improvement Activities" document for FY2010 as part of the Perkins Plan due in April of 2009. In this document, colleges reported on the results of their gap analysis and submitted plans for conducting their root cause action research during FY10. These plans were to be focused on institutional research strategies for identifying barriers for student participation and completion of non-traditional programs. It was intended that the colleges would describe in their FY11 Perkins plans the implementation strategies they identified from their root cause research. Unfortunately, because the data reported to the state lag by two years, there has not been enough time to see the results reflected in the data. In addition, the Perkins funding

[2] See Appendix A for pre- and post-survey responses.

process at the postsecondary level does not include an annual report of outcomes other than the data collection.

In April, 2010, Perkins Plan submissions for FY11 required technical colleges who did not meet their negotiated performance measure by 90% on any one of the indicators to submit a plan for how they would improve their performance on that measure. Out of the 30 technical colleges in the system, two colleges did not meet Perkins indicator 5p1 (non-traditional participation), and ten colleges did not meet 5p2 (non-traditional completion).

In April, 2011, Perkins Plan submissions for FY12 included four colleges which did not meet 5p1—one of these for the second year—and 14 colleges which did not meet 5p2—five of these for the second year. It is interesting to note, however, that only one college, down from two, did not meet 5p1, and five colleges, down from ten, did not meet 5p2 for the second year.

The two-year data lag makes it difficult to interpret the effect of the technical assistance, because the data used to create plans for FY12 were received in December 2011 for policy year (PY) 2010. The first year which would reflect any impact from the technical assistance would be PY11, the data from which would be used for FY13 Perkins plans.

PY11 data for FY13 Perkins Plan submissions included two colleges which did not meet 5p1—one new college and one which did not meet the measure for the second year. There are six colleges which did not meet 5p2—four new colleges and two which did not meet the measure for the second year. What the performance trends show over these three years is, in all cases, when a college does not meet its performance measure, it is able to improve its performance within two years to meet the measure.

Local performance measure negotiation was conducted by forming a statewide committee of state and local representatives. The committee proposed a system-wide benchmark which consisted of the average of the college's three previous years' performance on the measure, with an expected increase of 0.125% per year calculated every other year. All colleges agreed to this process of setting performance measures.

Each of Georgia's technical colleges has a Special Populations Coordinator. This individual is responsible for ensuring access and success of special population students in CTE on their campus. Additional professional development was conducted with this group at each of their semi-annual meetings. Additionally, Institutional Effectiveness staff met semi-annually and received professional development on strategies for improving performance on the non-traditional core indicator.

Result: Postsecondary data transparency. One of the more significant outcomes of the TA Academy was action at the postsecondary level to make core indicator performance data available for every college, disaggregated by program and by gender, race, and each of the special population groups. These data have been available since January 2010. Each year, Institutional Effectiveness staff and Special Populations Coordinators receive training on how to read, interpret, and use the data for program improvement efforts. The availability of these data has allowed the technical colleges to conduct fairly sophisticated performance gap analysis

between student groups at the campus and at the program level as well as campus and program benchmarking statewide.

Secondary follow-up. At the secondary level, the Georgia Department of Education requested LEAs that participated in the TA Academy utilize what they learned to develop strategies for improving the non-traditional core indicator in their FY10 five-year Perkins IV and one-year funding applications. This application included a section for data and activities associated with each of the core indicators. The Career Development Coordinator at the Georgia Department of Education, who was a member of the team which attended the TA Academy, developed a worksheet to help LEAs connect the training to the completion of their Perkins application. Department staff continue to monitor activities across the state and encourage LEAs to utilize the resources made available through the training. Additional professional development on increasing students' access to and success in non-traditional careers has been conducted at statewide workshops and at the Georgia Association for Career Technical Education annual career and technical educators' conference.

Participation in NAPE's STEM Equity Pipeline. In Fall 2010, Georgia became a participating state in NAPE's STEM Equity Pipeline. Led by the TCSG, four postsecondary pilot sites were selected to participate in the project. Each site formed a leadership team of administrators, teachers, and counselors from the college and, in some cases, their secondary partners. The teams participated in the Program Improvement Process for Equity in STEM training from NAPE, conducted a performance gap analysis using their Perkins data, and identified root causes and developed an action plan for implementing strategies to increase the participation and completion of women in STEM-related programs of study. The four participating sites are (a) Atlanta Technical College's aviation maintenance technology and avionics; (b) Augusta Technical College's A.R. Johnson Health Science and Engineering Magnet High School, nuclear engineering technology, mechanical engineering technology, and electronic and computer engineering; (c) Middle Georgia Technical College's aviation maintenance technology and aircraft structural technology; and (d) Oconee Fall Line Technical College's East Laurens High School and electronics technology.

Research-based strategies are being implemented in each site, and outcome data are not yet available.

Minnesota

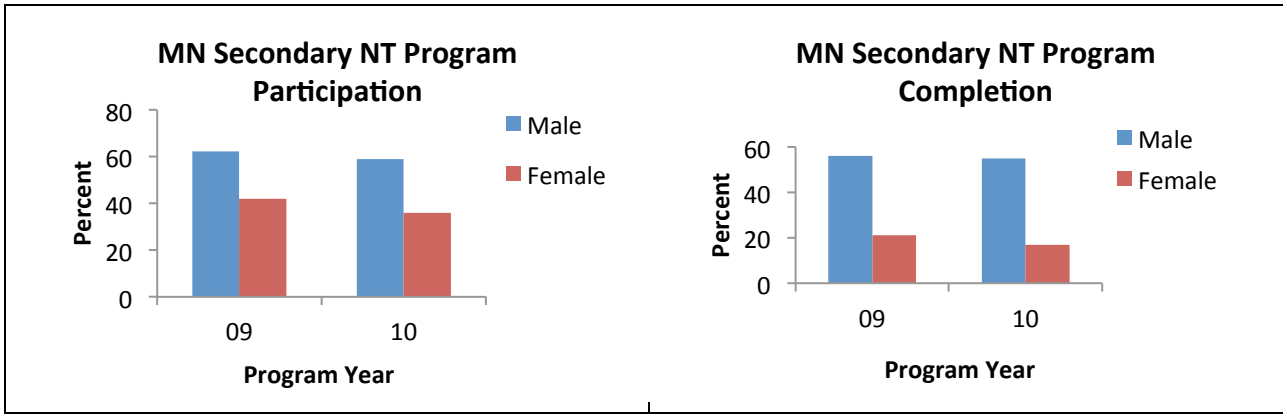
Background Information

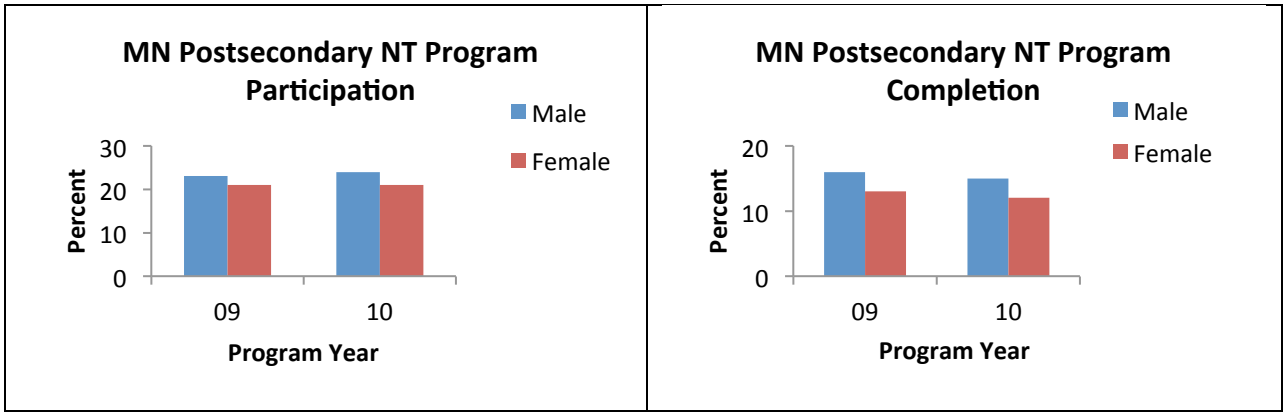
Identified barriers. As described in its application, Minnesota's first barrier is that non-traditional training and employment are not systematically viewed as part of a larger context that addresses student achievement in CTE. The challenge of coordinating non-traditional participation and completion, including sharing data, between secondary and postsecondary education has implications for facilitating college transitions, developing programs of study, and addressing industry demands. The second barrier is the "gender issue" is not perceived as a "current problem" and is often overlooked in existing programs and services, which tend to be traditional and fragmented.

Steps taken to assist LEAs in non-traditional participation and completion. In its application, Minnesota said it will continue to collaborate with appropriate collegiate offices to infuse non-traditional and gender issues into ongoing training, planning, and creation of resources for college counselors and affirmative action and diversity officers. The state engaged experts from across the nation to provide training for Perkins coordinators and others to improve strategies in non-traditional participation and completion. Through competitive grants, the state provided opportunities for high schools and colleges to collaborate on addressing challenges in non-traditional performance, notably in biosciences, and encouraged efforts to improve non-traditional participation of and completion by persons with disabilities and in corrections programs.

Baseline performance data. Using CAR data for PYs 2009 and 2010, NAPE analyzed Minnesota's core indicators, disaggregated by gender and grand total, and enrollment (CTE concentrators), disaggregated by gender and cluster.

Core indicators (gender). As illustrated in the figures below, for males in programs non-traditional for their gender at the secondary level, the participation rate decreased, and the completion rate decreased slightly. However, the rates are quite high in the 50% and 60% ranges. The secondary participation and completion rates for females decreased.





At the postsecondary level, the participation rate for males in programs non-traditional for their

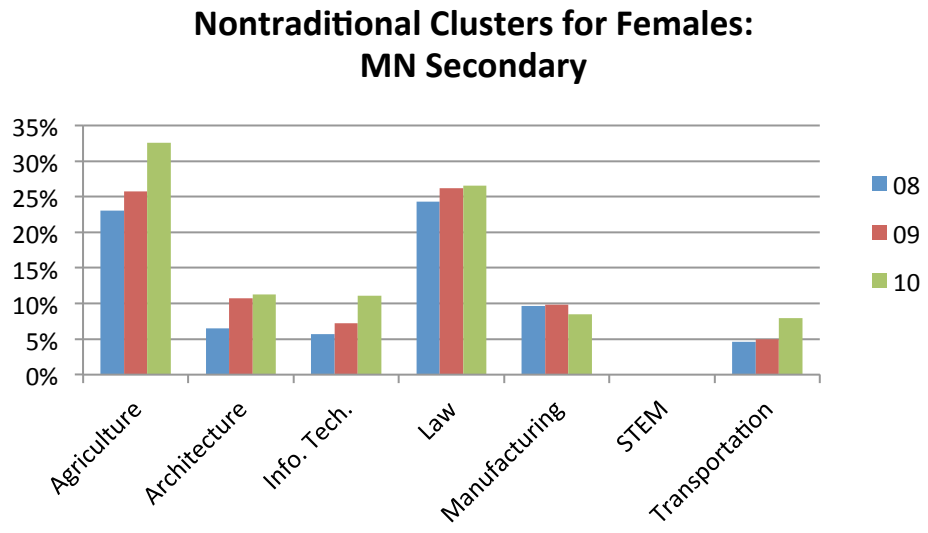
gender increased slightly, while the completion rate decreased slightly. For females, the participation rate increased and completion rate decreased, but slightly. For the years studied, the rates for males exceeded the rates for females.

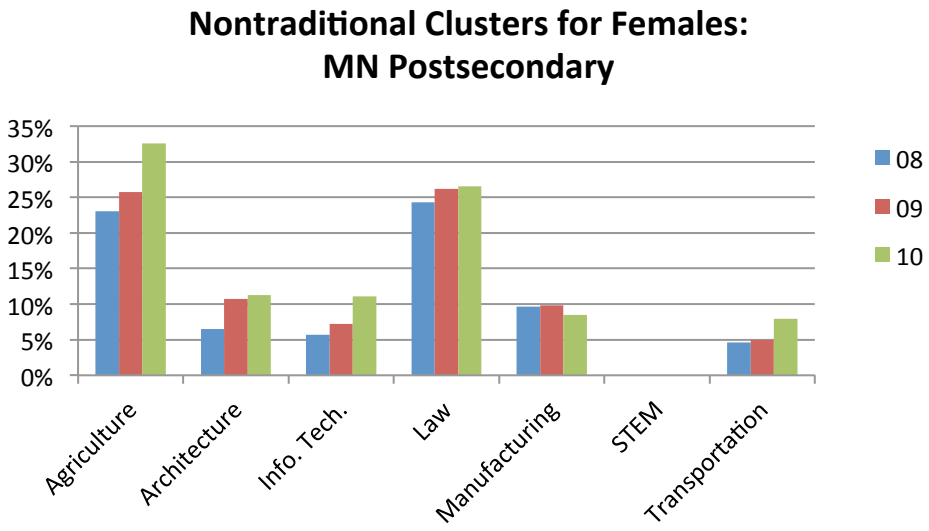
Core indicators (grand total). As indicated in the table below, the state exceeded its grand total targets for all indicators except secondary completion.

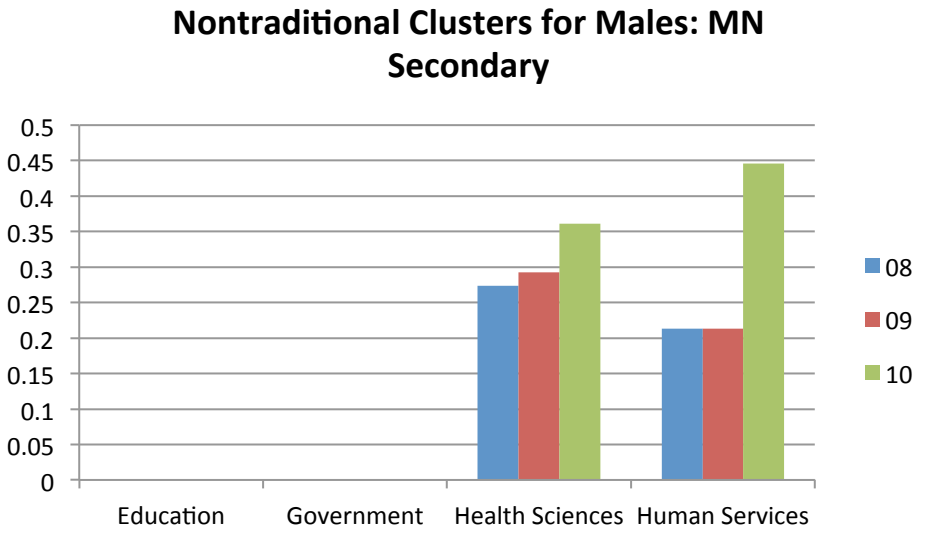
Table 11
Minnesota Grand Total Performance (from CAR)

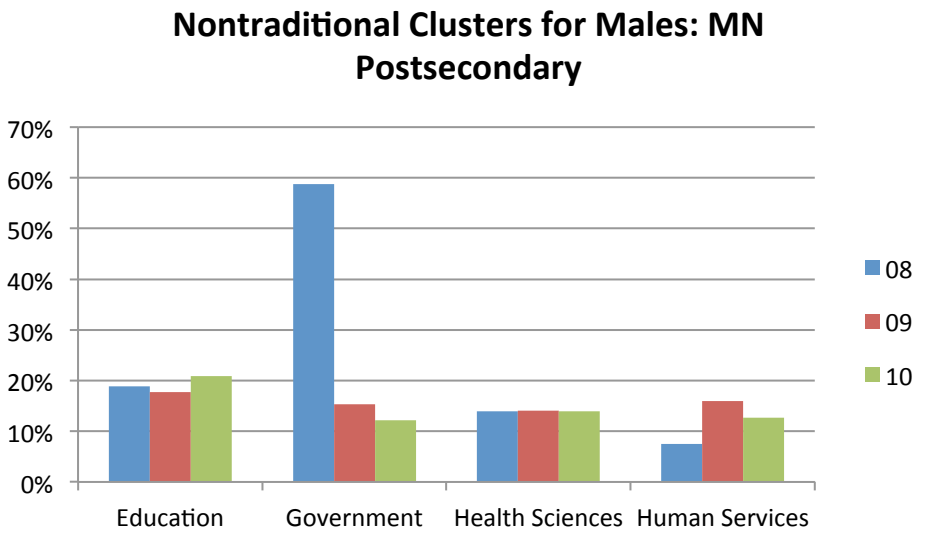
Secondary	08-09		09-10	
	Target	*Actual*	*Target*	*Actual*
Participation	38.50%	54.04%	39.00%	49.50%
Completion	35.50%	34.14%	36.00%	32.50%
Postsecondary				
	Target	*Actual*	*Target*	*Actual*
Participation	17.00%	22.41%	17.20%	22.50%
Completion	11.00%	14.66%	12.00%	13.93%

Enrollment (gender and cluster). Based on the CAR data, for at least one of the past three program years at either the secondary or postsecondary level, Minnesota reported the Agriculture, Architecture, Information Technology, Law, Manufacturing, STEM, and Transportation Clusters as being having less than 25% female enrollment and the Education, Government, Health Sciences, and Human Services Clusters as having less than 25% male enrollment (see charts below).




Nontraditional Clusters for Females: MN Postsecondary
35%
30%
25%
20%
15%
10%
5%
0%
Agriculture
Architecture
Info. Tech.
Law
Manufacturing
STEM
Transportation
08
09
10


Nontraditional Clusters for Males: MN Secondary
0.5
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
Education
Government
Health Sciences
Human Services
08
09
10


Nontraditional Clusters for Males: MN Postsecondary
70%
60%
50%
40%
30%
20%
10%
0%
Education
Government
Health Sciences
Human Services
08
09
10

Survey and interview responses. According to information from the NRCCTE, six individuals attended the TA Academy. One individual has since retired. Four (one secondary, two postsecondary, and one B&I) responded to the survey. A postsecondary representative and the B&I representative were interviewed.

Table 12
Team Composition

It has been important to achieving the work plan objectives that the following individuals remained on the team after the TA Academy:					
	Strongly Disagree	Disagree	Agree	Strongly Agree	Number of Responses
Secondary State Director		33%	33%	33%	3
Postsecondary State Director			**67%**	33%	3
Perkins Data Analyst			**100%**		3
Gender Equity Coordinator			**67%**	33%	3
Workforce Development Coordinator		50%	50%		2
Local Agency Representative		50%	50%		2
Business & Industry Representative	25%	**50%**	25%		4

Table 13
Reflections on the TA Academy

Please indicate if you agree or disagree with the following statements:					
	Strongly Disagree	Disagree	Agree	Strongly Agree	Number of Responses
1.5 days was an adequate length of time for the TA Academy.		25%	**75%**		4
It was sufficient to hold the TA Academy just once.	25%	**50%**	25%		4
What I learned would have been reinforced if there had been follow-up.		25%	25%	**50%**	4
The application process prepared my team for the TA Academy.		33%	33%	33%	3
It was effective to include a B&I rep.		**50%**	25%	25%	4
The TA Academy achieved its goal to raise the awareness of barriers and obstacles to student participation in, and completion of, non-traditional programs.		25%	**50%**	25%	4
The TA Academy achieved its goal to offer strategies to streamline the collection of accurate local program data.		**67%**		33%	3
The TA Academy achieved its goal to provide analytic tools to identify under- and out-performing providers.		**67%**	33%		3
The TA Academy achieved its goal to describe research-based approaches for		33%	**67%**		3

improving statewide performance on the measures.					

Interview Comment*:* It took a lot of people to complete the application in a short amount of time.

Table 14
Academy Elements

Would you keep, change, or remove the following elements of the TA Academy?				
	Keep	Change	Remove	Number of Responses
Application	**75%**	25%		4
Data submission	**100%**			4
Stipend	**75%**		25%	4
Access to experts at Academy	**100%**			4
Facilitated breakout sessions for teams to develop work plans	**100%**			4
Concurrent session on strategies for improving student practices	**75%**	25%		4
Length of one-and-a-half days	**75%**	25%		4
Data shells	**67%**		33%	3
Required development of work plans	**75%**	25%		4

Survey Comments*:*

- I am not a fan of stipends. If an activity warrants participation, then it is the activity and not the stipend that will drive participation.
- The TA Academy should follow up with more frequency after the work plans with more technical assistance. Follow-up after three years is not beneficial, particularly in recalling usefulness of the TA Academy. Add effective evaluation, assessment, and sustainability.
- I felt pressed for time; the TA Academy should have been for two days.

Interview Comments*:* One participant stated it was unreasonable to require the states to develop a work plan during the TA Academy, because there was not enough time to reflect on the information learned from the presentations. The process felt rushed, which hindered the state team's ability to develop a comprehensive and realistic plan. However, the team appreciated the assistance of a neutral facilitator during the process.

Table 15
Usefulness of Sessions and Materials

Please rate the usefulness of the following sessions and the materials provided:						
	Not useful	Somewhat useful	Very useful	Didn't attend	Don't Remember	Number of Responses
Strategies for Improving Student Entry into NTOs			**75%**		25%	4
The Equity Pipeline			25%		**75%**	4
Recruiting and Retaining NT		25%	**50%**	25%		4

Learners						
Career Clusters and Programs of Study		**75%**			25%	4
Interpreting and Using State Perkins Data			50%	50%		4
Generating Expectations for Student Achievement (GESA)		25%	**50%**	25%		4
Finding Common Ground		**75%**			25%	4
Table shells		25%	25%		**50%**	4
Non-traditional Crosswalk		25%	**50%**		25%	4

Upon reflection, what recommendations do you have for strategies to improve the TA Academy and the technical assistance received from the NRCCTE and/or the U.S. Department of Education, Office of Vocational and Adult Education on increasing participation in and completion of under-represented gender students in non-traditional CTE programs?

***Survey Comments**:*

- Clarify the intent of the non-traditional accountability indicators.
- I can't recall at this time because this survey comes so late after the training. Continuous follow-up (at some degree) is critical to ensure that the sessions and materials are helpful. Sessions were very helpful overall. Addressing diverse populations should be integrated into this technical assistance, and partnering with those who can provide expertise is essential.
- Work with employer partners to help get the word to students.

***Interview Comments**:* The Equity and Collaboration Specialist wanted to see more discussion, training, and technical assistance about how to address non-traditional from a more general equity perspective and a student success perspective. In addition, the Specialist wondered how a state can gather and coordinate its disparate and fragmented resources to address the challenges in a consistent and cohesive manner.

***Summary observations of the TA Academy's structure and** effectiveness.* Half of the respondents indicated it was not important to achieving the work plan objectives to have the Workforce Development Coordinator and a Local Agency Representative on the team. However, it appears as though no one with those responsibilities attended the TA Academy. The majority indicated it was not important to have a B&I Representative on the team.

The majority of respondents agreed the length of time was adequate, it was not sufficient to hold the TA Academy just once, what was learned would have been reinforced through follow-up, and the application process was helpful.

In addition, the majority of respondents believed the TA Academy achieved its goals of (1) raising awareness and obstacles to student participation and completion of non-traditional programs and (2) describing research-based approaches for improving statewide performance on measures, but not (3) offering strategies to streamline the collection of accurate local program data and (4) providing analytic tools to identify under- and out-performing providers.

There were numerous "Don't Remember" or "Didn't Attend" responses to the question about the specific sessions. Those who attended or remembered rated "Strategies for Improving Student Entry into NTOs" and "Interpreting and Using State Perkins Data" as "very useful" and "Recruiting and Retaining NT Learners," "Career Clusters," "GESA," "Table Shells," and "NT Crosswalks" as "somewhat or very useful." The majority of respondents did not remember "The Equity Pipeline" session.

The B&I Representative assigned negative ratings to the TA Academy's structure and effectiveness. Furthermore, he indicated that he received no communications from the "school people" after the TA Academy and therefore was not involved in implementing any of the work plan activities.

Post-TA Academy activities. Because he was not involved after the TA Academy, the B&I Representative selected "I don't know" from the list of predetermined Post-TA Academy activities. Of the remaining three participants, two (and not always the same two) agreed the state conducted professional development with administrators and teachers, that the state has made significant progress in implementing its work plan, and that the team has been sidetracked by other responsibilities.

- We conducted a presentation to other staff about what occurred at the TA Academy. – 25%
- We created a broad team of individuals (agency staff and others) to further develop the work plan. – 0%
- We created a state advisory group on non-traditional career preparation. – 0%
- We conducted professional development with administrators on effective practices of recruiting and retaining under-represented gender students in non-traditional CTE programs. – 50%
- We conducted professional development with teachers on effective practices of recruiting and retaining under-represented gender students in non-traditional CTE programs. – 50%
- We conducted professional development with administrators on strategies to collect accurate local program data. – 25%
- We improved data collection for the non-traditional measures – 25%
- We used the national non-traditional crosswalk to identify non-traditional programs in the state for data collection at the local level. – 25%
- We used the table shells provided at the TA Academy to analyze local educational agency performance on the non-traditional measures. – 25%
- We aligned the use of Perkins state leadership non-traditional set-aside with the TA Academy work plan. – 25%
- We have made significant progress in implementing our work plan. – 50%
- No one was interested in hearing about the TA Academy or continuing development of the work plan. – 0%
- Non-traditional courses of study or occupations are not important or are not priority areas in my state. – 0%
- The team was sidetracked by other responsibilities or competing interests. – 50%
- The team lost momentum or enthusiasm. – 25%

- My job responsibilities do not support continuing work on the plan. – 0%
- I don't know. – 25% (This response is from the B&I Representative.)

Progress on Work Plans

Pre-TA Academy work plan. In its application, Minnesota stated it would follow up on the TA Academy training by developing a comprehensive plan to align system and local initiatives related to non-traditional participation and completion, establishing an entry-cohort model to enable linking of postsecondary non-traditional participation and completion with other accountability measures, involving all key internal and external partners which play a role in successful participation of and completion by students in non-traditional programs, and exploring adoption of successful models from other states.

Academy work plan. The respondents were asked to indicate the state's progress in completing each activity in the work plan developed during the TA Academy. The results are discussed below.

Table 16
State Activities

Your state indicated that it would raise awareness of the importance of impact and integration of NTOs by pursuing the following activities.						
	Didn't attempt	Attempted, but failed	In progress	Completed	I don't know*	Number of Responses
Collaborate with other states to create marketing document that incorporates states' data	**50%**			25%	25%	4
Target attention to NTOs in design and implementation of programs of study			**50%**	25%	25%	4
Provide technical assistance			**50%**	25%	25%	4
Incorporate business representatives as speakers at state and local meetings	**75%**		25%			4
Create state-level taskforce including business, secondary, and postsecondary	**50%**	25%			25%	4
Tie to webpage			25%	25%	**50%**	4

* The B&I representative selected "I don't know" for almost all items.

Survey Comments:

- Staffing changes and competing demands impacted the state's plans.
- The school people did not communicate with me after the TA Academy.

Interview Comments:

- The Equity and Collaboration Specialist explained that, in Minnesota's experience, the creation of marketing documents is best left to the LEAs. Although the state has always provided technical assistance, the TA Academy helped the state to identify specific technical assistance that would be worth devoting more resources to. The TA Academy spurred additional conversations about how the state might better integrate efforts to raise the importance on non-traditional in CTE. Rather than forming a new taskforce, the state decided to use its pre-existing accountability workgroup to drive an increased emphasis on non-traditional.

Table 17
State Analysis Activities

Your state indicated that it would analyze the problem from a state and local perspective by pursuing the following activities.						
	Didn't attempt	Attempted, but failed	In progress	Completed	I don't know*	Number of Responses
Conduct state-level data analysis to disaggregate by a number of elements			25%	**50%**	25%	4
Provide specific training on self-assessment/data analysis to local entities			**50%**	25%	25%	4
Have individual consortia conduct self-assessment/data analysis			33%	33%	33%	3
Provide technical assistance			**50%**	25%	25%	4

* The B&I Representative selected "I don't know" for all items.

Table 18
State Strategies/Tools

Your state indicated that it would identify strategies or tools to address the issues identified in the analysis/self-study by pursuing the following activities:						
	Didn't attempt	Attempted, but failed	In progress	Completed	I don't know*	Number of Responses
Develop and disseminate toolbox	25%			25%	**50%**	4
Provide technical assistance			33%	33%	33%	3

* The B&I Representative selected "I don't know" for all items.

***Survey Comments**:* The toolkit idea appeared ineffective. We need to re-examine and combine with professional development planning.

Table 19
State Strategy/Tool Implementation

In its work plan, your state indicated that it would implement selected strategies/tools that increase integration of equal access and opportunity into all conversations by pursuing the following activities:						
	Didn't attempt	Attempted, but failed	In progress	Completed	I don't know*	Number of Responses
Support creation of pilots through mini-grants			25%	**50%**	25%	4
Target attention to NTOs in design and implementation from programs of study			**50%**	25%	25%	4
Identify appropriate local strategies from toolbox	25%			25%	**50%**	4
Provide technical assistance			**50%**	25%	25%	4

* The B&I Representative selected "I don't know" for all items.

***Interview Comment**:* An important outcome has been enhanced dialogue and cooperation with the system Office of Diversity and Multiculturalism, which serves overlapping populations.

Table 20
State Intervention Plan Evaluation

Your state indicated that it would evaluate impact of intervention plan and feedback to next cycle of improvement strategies by pursuing the following activities:						
	Didn't attempt	Attempted, but failed	In progress	Completed	I don't know*	Number of Responses
Incorporate evaluation process into mini-grant			25%	25%	**50%**	4
Establish benchmarks for good assessment strategies					**100%**	4
Analyze evaluation results			25%	25%	**50%**	4

* The B&I Representative selected "I don't know" for all items.

***Interview Comment**:* The Equity and Collaboration Specialist stated achieving this objective has been challenging for several reasons and suggested assessment and evaluation would be a good topic for additional technical assistance.

Summary observations on the work plan outcomes. There was little agreement about the status of the activities' completion. For example, two respondents indicated an activity had not been implemented while another indicated it had been completed. Curiously, the responses did not align according to postsecondary and secondary. The only majority vote was for "I don't know." This suggests a fragmentation of effort or a lack of communication.

However, of the 19 work plan activities, the group agreed 13 are either in progress or have been completed, and three were not attempted.

Representatives from Minnesota were asked during the interview process if the state has been able to complete other action items not included in the state plan. It was reported the Minnesota State Colleges and Universities (MNSCU) system has collaborated and shared resources with the Office of Diversity and Multiculturalism; organized a showcase that featured joint presentations between STEM EP pilot teams and campus faculty; and organized a diversity drive for MNSCU faculty and staff which involved breakout sessions focusing on institutional, student success, and K-12 perspectives.

Pennsylvania

Background Information

Identified barriers. In its application, Pennsylvania explained there is resistance from all stakeholders to consider preparation for non-traditional occupations. In making policy, leaders juggle high-priority occupations, non-traditional careers, and careers paying family-sustaining wages versus popular or trendy programs. To provide students and parents with information to make well-informed career decisions, LEA policy makers and state policy makers must make consumer protection decisions. Programs not considered high-priority are not approved for state reimbursement.

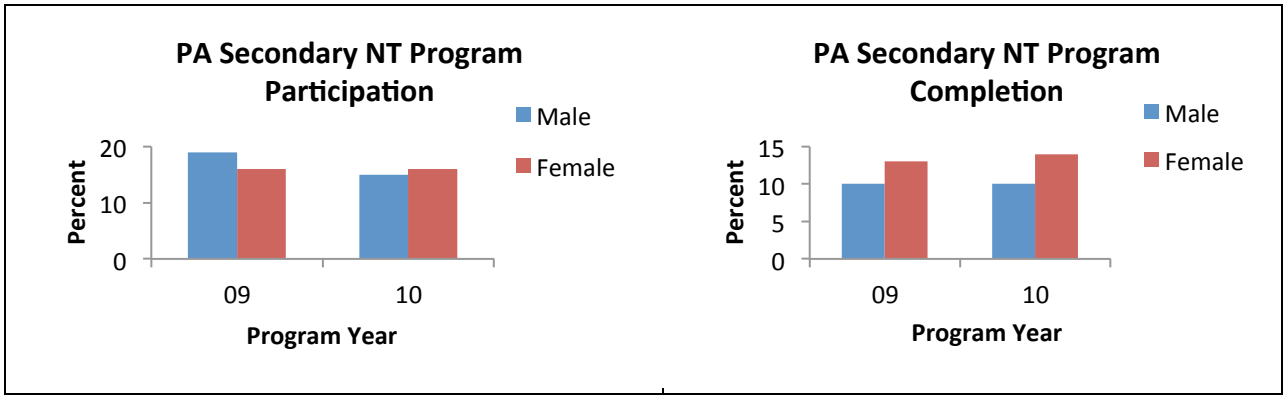
Furthermore, Pennsylvania stated in its application there is a disconnect between secondary programs and postsecondary institutions and jobs. Participation in apprenticeships has waned. Although LEAs were to identify a program of study offering a dual enrollment opportunity prior to 2007-08 Perkins Local Plan approval, there was no requirement the selected program be related to high-priority occupations.

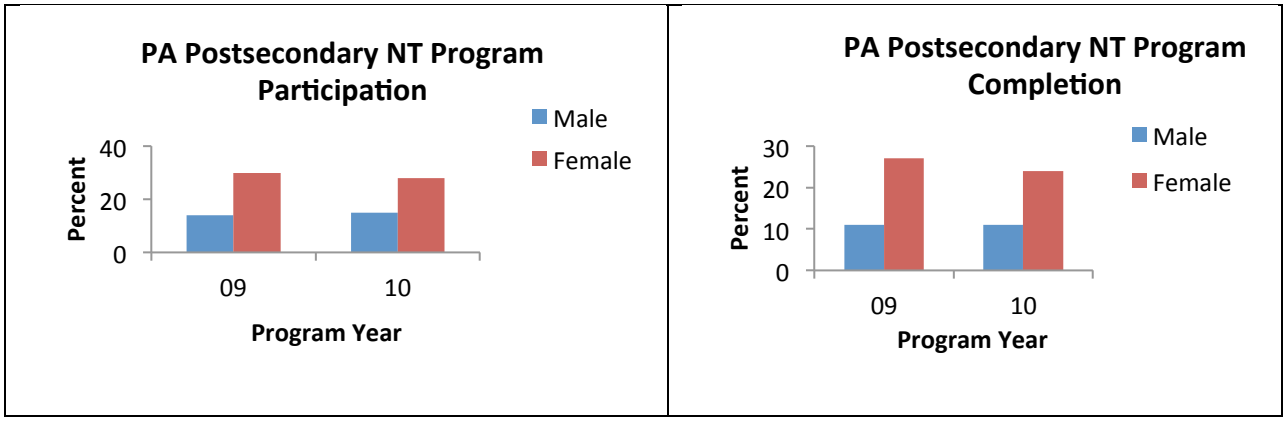
Steps taken to assist LEAs in non-traditional participation and completion. Pennsylvania has required LEAs to address performance below state baselines as measured by two Perkins secondary and two Perkins postsecondary performance standards. Staff members regularly have participated in regional and statewide CTE-related conferences to provide recruitment and retention strategies. The state has developed promotional brochures for general distribution, and a template is available for LEAs to tailor to their needs. The state has continued to support a single parent or displaced homemaker project, the curriculum of which requires the inclusion of non-traditional occupation exploration at both the secondary and postsecondary levels. The state's website has had a link to non-traditional best practices. Both the Perkins and Civil Rights Review forms have inquired about non-traditional enrollment numbers and percentages. The state has presented a non-traditional career exploration activity as part of Take Your Child to

Work Day.

Baseline performance data. Using CAR data for PYs 2009 and 2010, NAPE analyzed Pennsylvania's core indicators, disaggregated by gender and grand total, and enrollment (CTE concentrators), disaggregated by gender and cluster.

Core indicators (gender). As illustrated by the charts below, at the secondary level, the participation rate for males in programs non-traditional for their gender decreased overall, while the completion rate increased slightly. For females, participation and completion rates increased slightly. At the postsecondary level, the participation rate for males increased slightly, while the completion rate remained almost unchanged. For females, the participation and completion rates decreased slightly. At the secondary level, the participation and completion rates for females exceeded the rates for males except for PY 2009 participation. At the postsecondary level, the participation and completion rates for females exceeded the rates for males.



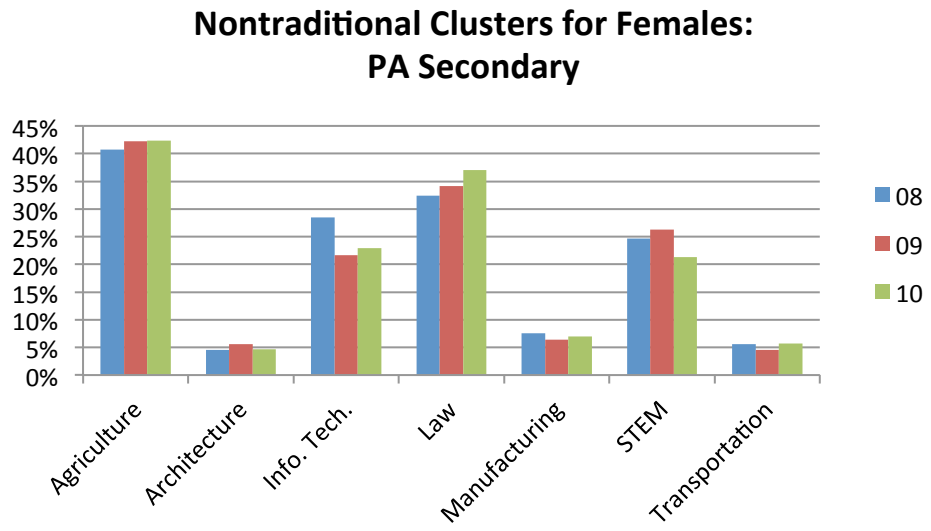


Core indicators (grand total). As indicated in the table below, Pennsylvania did not meet its grand total secondary targets in PY09 and PY10. The postsecondary completion rate in PY10 was slightly below the target.

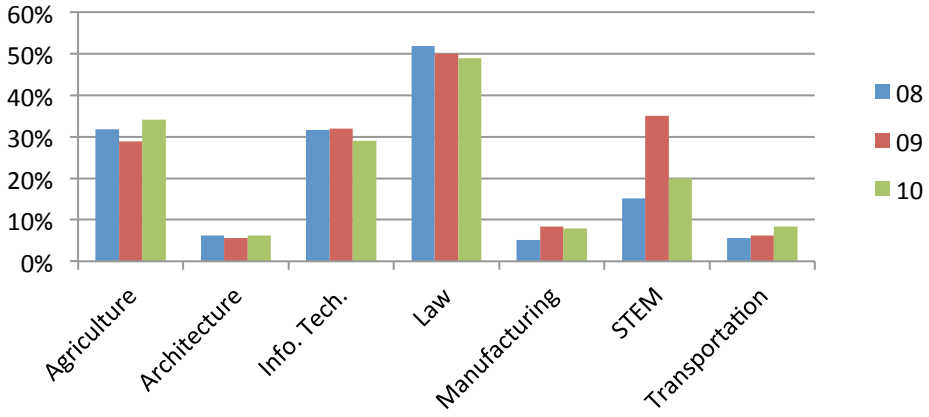
Table 21
Pennsylvania Grand Total Performance

Secondary	08-09		09-10	
	Target	*Actual*	*Target*	*Actual*
Participation	17.91%	17.29%	18.25%	16.14%
Completion	12.27%	11.78%	13.00%	12.86%
Postsecondary	08-09		09-10	
	Target	*Actual*	*Target*	*Actual*
Participation	19.31%	22.30%	20.00%	21.54%
Completion	17.21%	18.49%	18.00%	17.37%

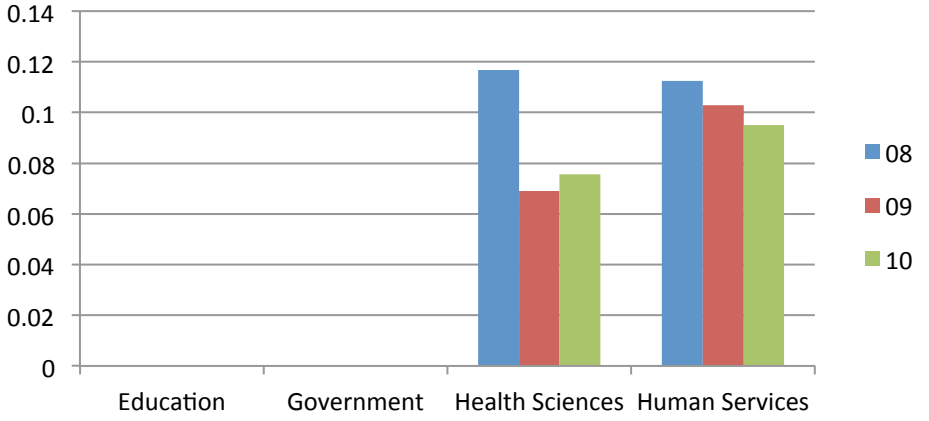
Enrollment (gender and cluster). Based on the CAR data, for at least one of the past three program years at either the secondary or postsecondary level, Pennsylvania reported the Architecture, Information Technology, Manufacturing, STEM, and Transportation Clusters as being non-traditional for females and the Education, Health Sciences, and Human Services Clusters as being non-traditional for males. The charts below also display Agriculture and Law for females, because they were reported as non-traditional for those genders by at least one other state under study. Data for the Government Cluster were not reported for males.



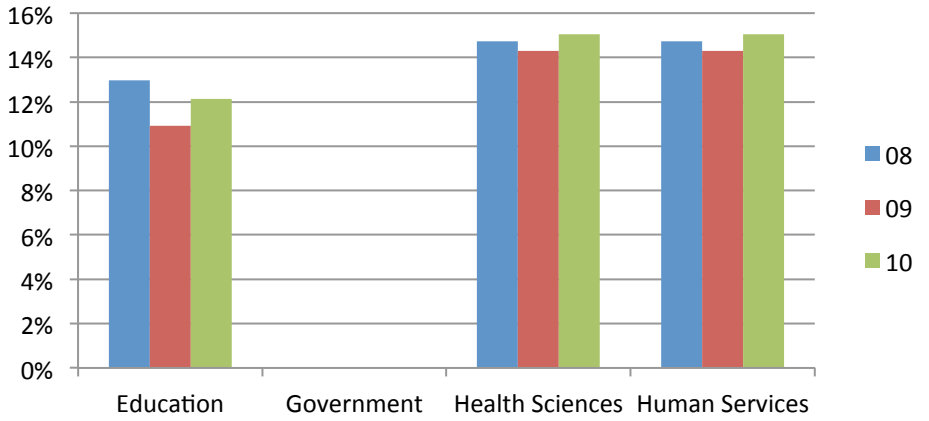
Nontraditional Clusters for Females: PA Postsecondary



Nontraditional Clusters for Males: PA Secondary



Nontraditional Clusters for Males: PA Postsecondary



Survey and interview responses. According to the first report, five individuals from Pennsylvania attended the TA Academy. One individual has since retired. Three responded to survey, and one of the responses was for two people. The author conducted an interview with the state's Gender Equity Consultant and an on-site visit with individuals who did and did not attend the TA Academy as part of a case study.

Table 22
Team Composition

It has been important to achieving the work plan objectives that the following individuals remained on the team after the TA Academy:					
	Strongly Disagree	Disagree	Agree	Strongly Agree	Number of Responses
Secondary State Director				**100%**	2
Post-Secondary State Directory				**100%**	2
Perkins Data Analyst				**100%**	3
Gender Equity Coordinator				**100%**	3
Workforce Development Coordinator				**100%**	1
Local Agency Representative				**100%**	3
B&I Representative				**100%**	2

Table 23
Reflections on the TA Academy

Please indicate if you agree or disagree with the following statements:					
	Strongly Disagree	Disagree	Agree	Strongly Agree	Number of Responses
1.5 days was an adequate length of time for the TA Academy.		**67%**	33%		3
It was sufficient to hold the TA Academy just once.	33%	33%	33%		3
What I learned would have been reinforced if there had been follow-up.			33%	**67%**	3
The application process prepared my team for the TA Academy.			**100%**		3
It was effective to include a B&I Rep.			**100%**		3
The TA Academy achieved its goal to raise the awareness of barriers and obstacles to student participation in, and completion of, non-traditional programs.			**100%**		3
The TA Academy achieved its goal to offer strategies to streamline the collection of accurate local program data.			**67%**	33%	3
The TA Academy achieved its goal to provide analytic tools to identify under-			**100%**		3

and out-performing providers.					
The TA Academy achieved its goal to describe research-based approaches for improving statewide performance on the measures.			**100%**		3

Table 24
Elements of the TA Academy

Would you keep, change, or remove the following elements of the TA Academy?				
	Keep	Change	Remove	Number of Responses
Application	**67%**	33%		3
Data submission	**100%**			3
Stipend	**67%**		33%	3
Access to experts at Academy	**100%**			3
Facilitated breakout sessions for teams to develop work plans	**100%**			3
Concurrent session on strategies for improving student practices	**100%**			3
Length of one-and-a-half days		**100%**		3
Data shells	**100%**			3
Required development of work plans	**100%**			3

***Comments**:*

- Although it assisted in team building, the application process was onerous. In addition, more states might have applied if more time to complete the application was provided.
- A good venue for follow-up would have been the NAPE PDI.
- The length of time should be extended—at least 2 full days to increase opportunities to listen to experts and collaborate with others.

Table 25
Usefulness of Sessions and Materials

Please rate the usefulness of the following sessions and the materials provided:						
	Not useful	Somewhat useful	Very useful	Didn't attend	Don't Remember	Number of Responses
Strategies for Improving Student Entry into NTOs		33%	**67%**			3
The Equity Pipeline		33%	**67%**			3
Recruiting and Retaining NT Learners		33%	**67%**			3
Career Clusters and Programs of Study		33%	**67%**			3
Interpreting and Using State Perkins Data		33%	33%		33%	3
Generating Expectations for		33%		33%	33%	3

Student Achievement (GESA)						
Finding Common Ground		**67%**	33%			3
Table shells		33%	33%		33%	3
Non-traditional Crosswalk		**67%**	33%			3

Upon reflection, what recommendations do you have for strategies to improve the TA Academy and the technical assistance received from the NRCCTE and/or the U.S. Department of Education, Office of Vocational and Adult Education on increasing the participation and completion on under-represented gender students in non-traditional CTE programs?

***Comments**:*

- "The TA Academy was held too long ago to answer this question. This was the first time most had heard of the Five-Step Improvement Process. Pennsylvania's focus has changed to secondary males, so we are pursuing partnering with the Hospital Association."
- "It is difficult to fully recall the events of the project at this point in time. That being said, I appreciated the collaborative elements, the opportunity to interact with experts, and the opportunity to serve. I find that hearing/discussing differing or new perspectives, strategies, and ideas strengthens the opportunity to expand thought and therefore improve programming options. I believe that the state teams attending the TA Academy should create a plan to broadly communicate the knowledge/information gained to all publics including state and local entities. I suggest planning an Academy at the state level as a follow-up. If knowledge is held by a few, the impact is lost."
- "Please provide more examples of nationally recognized programs (like Lynn Reha's) that are available for other states to implement. [The author] spent time with our state team focusing on data and offered several key suggestions related to what data were being collected and how they were being analyzed."

Summary observations of the TA Academy's structure and effectiveness. All respondents strongly agreed it was important that all seven representatives be on the team. Some respondents suggested that more time be provided to complete the application. All respondents agreed that one-and-a-half days were not long enough, a one-shot deal was not effective, and there should have been follow-up (for example, at the NAPE PDI or at the state level).

The PDE rated the "Non-Traditional Crosswalk" session as "somewhat useful" even though the Department used the crosswalk to identify non-traditional programs. In addition, "Finding Common Ground" was the only other session that at least two participants rated as less than "very useful." It was suggested that more examples of nationally recognized programs be provided.

During an on-site visit during the summer of 2011, the Pennsylvania team was asked once again to complete the *Preparing Under-Represented Students for Success in Non-Traditional Occupations* questionnaire. The answers were compiled and compared against the team's Pre-TA Academy answers to determine whether the participants' perceptions about obstacles to student participation in and completion of CTE programs non-traditional for their gender changed as a result of the TA Academy (See Appendix B for the comparison).

Post-TA Academy activities. The majority of respondents agreed that, after the TA Academy, the state formed an advisory group on non-traditional career preparation, conducted professional development with administrators and teachers on effective practices of recruiting and retaining under-represented gender students in non-traditional CTE programs, improved data collection for the non-traditional measures, and used the national non-traditional crosswalk to identify non-traditional programs in the state for data collection at the local level. The majority also indicated the team lost momentum and enthusiasm.

- We conducted a presentation to other staff about what occurred at the TA Academy—33%
- We created a broad team of individuals (agency staff and others) to further develop the work plan—33%
- We created a state advisory group on non-traditional career preparation—67%
- We conducted professional development with administrators on effective practices of recruiting and retaining under-represented gender student in non-traditional CTE programs—67%
- We conducted professional development with teachers on effective practices of recruiting and retaining under-represented gender student in non-traditional CTE programs—67%
- We conducted professional development with administrators on strategies to collect accurate local program data—33%
- We improved data collection for the non-traditional measures—67%
- We used the national non-traditional crosswalk to identify non-traditional programs in the state for data collection at the local level—67%
- We used the table shells provided at the TA Academy to analyze local educational agency performance on the non-traditional measures—33%
- We aligned the use of Perkins state leadership non-traditional set-aside with the TA Academy work plan—0%
- We have made significant progress in implementing our work plan—33%
- No one was interested in hearing about the TA Academy or continuing development of the work plan—0%
- Non-traditional courses of study/occupations are not important or are not priority areas in my state—0%
- The team was sidetracked by other responsibilities/competing interests—33%
- The team lost momentum/enthusiasm—67%
- My job responsibilities do not support continuing work on the plan—0%
- I don't know—33%

Progress on Work Plans

Pre-TA Academy work plan. In its application, Pennsylvania stated it would target one county (possibly Chester County), which has all the elements for success and model other programs on the best practices that surface. Although this activity may have been implemented, it was not incorporated in the work plan developed during the TA Academy.

TA Academy work plan. The respondents were asked to indicate the state's progress in completing each activity in the work plan developed during the TA Academy. The results are discussed below.

Table 26
State Data

Your state indicated that it would assure that data are accessible, usable, and accurate by pursuing the following activities.						
	Didn't attempt	Attempted, but failed	In progress	Completed	I don't know	Number of Responses
Rerun 2007 non-traditional data.				**67%**	33%	3
Establish listing of non-traditional CIP codes.				**67%**	33%	3
Disseminate data to US Doe and LEAs and renegotiate.				33%	**67%**	3
Write a formula to extract data analysis system for non-traditional statistics related to participation and completion.				33%	**67%**	3

Table 27
State Collaboration with Partners

Your state indicated that it would collaborate with partners to promote NTOs and increase the number of students in NT programs by pursuing the following activity.						
	Didn't attempt	Attempted, but failed	In progress	Completed	I don't know	Number of Responses
Collaborate with PA STEM initiative, PA industry partnerships, and PAWW to share resources and increase the number of students in non-traditional programs.			33%		**67%**	3

Comments*:* We no longer have the Governor's Association STEM Initiative. One STEM in the northwest PA is still active and has an annual meeting. The Gender Equity Coordinator will attend. We are establishing an industry partnership with the Hospital Association and informal partnerships with the Contractor's Association and the Travel/Tourism Association. The partnership with PA Women Work depends on the budget. Funding is now processed by the Bureau of Labor and Industry.

Table 28
State Adherence to Requirements

Your state indicated that it would adhere to federal and state requirements related to promoting NTOs and increase the number of students in non-traditional programs by pursuing the following activities:						
	Didn't attempt	Attempted, but failed	In progress	Completed	I don't know	Number of Responses
Require non-traditional participation in local PPC communities.			33%		**67%**	3
Require local PPC committees to discuss Perkins non-traditional performance indicators for inclusion in local plans.				33%	**67%**	3
Reinstitute and require all BCTE initiatives and funded programs to include an non-traditional focus.	33%				**67%**	3
Include TA on NTOs in BCTE's TA project.	33%				**67%**	3
Determine secondary and postsecondary schools that provide TA to other LEAs.	33%				**67%**	3

***Comments**:* Perhaps we should revisit this objective. Because the PPCs had to address performance, non-traditional representation was suggested rather than made mandatory. Guidelines for state equipment and curriculum funds were approved, including an equity section.

Table 29
State Workforce and Economic Development System

Your state indicated that it would collaborate on Pennsylvania's workforce and economic development system and state associations by pursuing the following activities:						
	Didn't attempt	Attempted, but failed	In progress	Completed	I don't know	Number of Responses
Identify workforce partners and develop statewide committee.			**67%**	33%		3
Meet with workforce partners to increase awareness of the importance of supporting students and	33%		33%		33%	3

adults in NTO.						

Table 30
TA Academy Consultants and State Planning

Your state indicated that it would utilize TA Academy consultants to develop a state plan focused on NTOs by pursuing the following activities:						
	Didn't attempt	Attempted, but failed	In progress	Completed	I don't know*	Number of Responses
Develop implementation plan that includes goals and activities related to increasing partners' knowledge of NTOs.			33%		**67%**	3
Develop a marketing plan to influence school climate and reflect the positive benefits of non-traditional training and employment.			33%		**67%**	3

* The only participant who could answer this question was the Gender Equity Coordinator.

Summary observations on the work plan outcome. One participant appeared to be knowledgeable enough to answer the work plan implementation questions, with others responding "I don't know" to almost all items. These same individuals indicated they felt the team lost momentum after the TA Academy. This implies activities after the TA Academy were primarily conducted by participants from within the Pennsylvania Department of Education, as it appears that the majority of the work plan activities (10 of 14) have been completed or are in progress.

Pennsylvania's actions following the TA Academy. The Pennsylvania Department of Education has an individual on staff responsible for monitoring and providing technical assistance to LEAs on the non-traditional measures in the Perkins Act. Upon returning from the TA Academy, that individual assumed responsibility for monitoring work plan implementation and maintaining team communication. This strategy was effective in maintaining some momentum around work plan implementation, but it also relieved the other team members of responsibility. Most of the other team members returned to PDE and became distracted by other efforts, losing sight of this work. Pennsylvania has a CTE system that includes programs located at comprehensive high schools as well as career technical centers (CTCs), where multiple high schools send students to participate in CTE programs. High schools pay the CTC "tuition" for every student who attends the center, creating an interesting dynamic during these times of fiscal strain.

Data transparency. One of Pennsylvania's work plan objectives was to assure data are accessible, usable, and accurate. The Pennsylvania Department of Education has a student-level data system that allows for the ability to manage data collection and reporting internally, which improves data quality. The state provides data collection training and technical assistance to

ensure data entry is accurate and reliable. The state reports its data have become more reliable over time. Data is currently reported back to LEAs disaggregated by school and by program (six-digit CIP code) for each of the core indicators. Special population data are reported at the school level only. Local plan applications include a table pre-populated by the state for each LEA with the state's performance measure negotiated with OVAE and the local expected performance measure for each of the core indicators. Local expected measures of performance are calculated based on a formula depending on whether the local performance is above or below the state's performance. LEAs are held accountable for improving performance by one to two percent annually. The team indicated girls enrolled in agriculture programs across the state are maintaining their non-traditional performance at more than 40% of students.

Technical assistance and professional development. It appears that the Pennsylvania Department of Education has not implemented a statewide strategic initiative to increase performance on the non-traditional measure but has been doing a little bit in a lot of places. The Pennsylvania Department of Education recently implemented a Technical Assistance Program (TAP) through which participating CTCs work to raise student performance on the Pennsylvania System of School Assessment (PSSA) and occupational end-of-program assessments. Each participating CTC agrees to develop an improvement plan for increasing student achievement, to work closely with a designated improvement coach (Career and Technical Distinguished School Leader, or CTDSL), and to participate in all professional development activities. Although the TAP appears to be focused on academic and technical skill attainment, when CTDSLs work with a school which is not meeting its performance measure for non-traditional participation or completion, technical assistance is also provided to assist the school in including strategies in their improvement plan to meet this deficiency.

The Pennsylvania Department of Education has also sponsored and encouraged professional development presentations at the annual Integrated Learning Conference and at the Pennsylvania Career and Technical Education conference. Two of the TA Academy facilitators presented at the Spring 2009 Special Populations Conference.

Pennsylvania has developed Career, Education and Work Standards,[3] which are part of the State Board of Education's regulations of required education for all students in Pennsylvania. The Career Education and Work Standards address four areas of knowledge: (1) Career Awareness and Preparation, (2) Career Acquisition (Getting a Job), (3) Career Retention and Advancement, and (4) Entrepreneurship. Imbedded in these standards are references to non-traditional career exploration and resources promoting students' access and success in non-traditional career preparation programs.

PDE staff members have also received professional development internally on the needs of students pursuing non-traditional careers and the role CTE state staff can play in helping LEAs design programs that increase their access and success. This has resulted in increased awareness and capacity of all CTE staff to provide assistance to LEAs.

3 Pennsylvania Career Education and Work Standards are available at http://www.pacareerstandards.com/.

Overall Conclusions and Recommendations

Overall Conclusions about the TA Academy Structure

The participants were split as to the importance of including a B&I representative on the team. NAPE reached the conclusion from the survey responses and interviews that the B&I representatives were not involved post-TA Academy.

Most participants agreed one-and-a-half days was adequate time but the TA Academy should have been held more than once and there should have been follow-up. These comments align with the recommendation that technical assistance be sequenced to continue improvement efforts and deliver reinforcement on a consistent schedule.

Most participants agreed the TA Academy achieved its goals to raise the awareness of barriers and obstacles to student participation in, and completion of, non-traditional programs, offer strategies to streamline the collection of accurate local program data, provide analytic tools to identify under- and out-performing providers, and describe research-based approaches for improving statewide performance on the measures.

Most participants would not change the major elements of the TA Academy: the application, data submission, stipend, access to experts, facilitated breakout sessions, concurrent sessions, length, data shells, and required development of work plans. However, some commented that 30 days was not sufficient time to respond to the Request for Proposals.

Although some of the participants could not remember all of the concurrent sessions, none rated any of the sessions and their associated materials as "not useful." Those participants interviewed affirmed the importance of having a neutral facilitator for the breakout sessions.

Summary Observations about Post-TA Academy Work

As a result of the TA Academy, three states at the very least conducted professional development with teachers and administrators on effective practices of recruiting and retaining under-represented gender students in non-traditional CTE programs.

Although some participants admitted the team became sidetracked by other responsibilities or lost momentum and enthusiasm, none reported that no one was interested in hearing about the TA Academy or continuing development of the work plan or that non-traditional courses of study or occupations are not important or priority areas in the state.

Three states reported they have made significant progress in completing their work plan activities. Georgia completed 12, did not attempt three, and is unsure about one of its 16 activities. Minnesota completed or is in the progress of completing 13, did not attempt three, and cannot agree on the remaining three of its 19 activities. Pennsylvania completed or is in the progress of completing 10 and cannot agree on the remaining four of its 14 activities. This progress is commendable considering the constrained resources that all states are facing. However, for Minnesota and Pennsylvania at least, the survey responses and interview comments

convey the message that work on the activities was not a team effort and that communication among team members was lacking or fragmented. This raises concerns because the literature on technical assistance and professional development states efforts to initiate systemic and continuous change must be team-based and collaborative.

Recommendations

The TA Academy successfully completed the first five of Mattson and McDonald's (2005) TA tasks: investigate and identify priority TA needs: identify TA purposes, measurable goals and objectives, and outcomes: identify TA services and agree on amount and duration: develop a TA plan: and implement the TA plan. However, the process breaks down at the final two tasks: establish mutual accountability for TA and outcomes and develop an evaluation plan of the TA plan and services. The majority of participants expressed the need for continued TA support and follow-up via conference calls, webinars, or other forms of support. To assist the TA Academy in improving its delivery of technical assistance, the authors recommend 13 courses of action.

First, the TA Academy should investigate why the B&I representatives were not involved after the TA Academy and devise strategies for ensuring their continued involvement. One suggestion is to invite a representative to make a presentation during the TA Academy about how B&I can assist with recruiting and retaining non-traditional students. Another suggestion is to formalize the B&I representative's ongoing role in the state work plans. Next, it was suggested the TA Academy planners should recognize not all participants will be at the same point on the learning curve. In the future, organizing cohort sessions at the TA Academy that address the needs of everyone from beginners to experts may create a common base of knowledge from which to build the teams' work plans. Then, during the TA Academy and post-Academy events (e.g., conference calls, webinars, networking sessions, etc.), presenters and facilitators should note common or ongoing themes and issues and share them with a central person who may use this information to identify topics for future technical assistance. As another follow-up activity, the facilitators should evaluate the work plans to determine whether they address the state-specific barriers, apply lessons learned, are realistic and sustainable given resource constraints, and will, in fact, improve performance in the long run.

Next, as a follow-up activity, the facilitators should compare the work plans the states described in their applications to the work plans developed during the TA Academy to determine if they indicate a better understanding of how to tackle the problems. Then, to ensure mutual accountability, the TA Academy should request periodic reports (perhaps quarterly) from the state teams about their progress in completing their work plan activities. In turn, the TA Academy should provide a regular cycle of follow-up technical assistance for at least one year. Next, as a means to deliver reinforcement on a consistent schedule, the TA Academy should develop a mechanism to enable ongoing peer networking. Then, to maintain consistency, each facilitator should remain accessible to his or her specific team for a time period after the TA Academy to answer questions or to provide additional guidance. Also, the TA Academy should devise strategies to ensure ongoing work at the state level remains team-based and collaborative and regularly scheduled technical assistance be provided to help keep teams on track. Next, the TA Academy should strive for reassurance from the State Directors that the team members will be held accountable within the state for working toward work plan completion. Then, the TA

Academy should monitor the states' performance indicators for improvement. Also, an evaluation of the TA Academy's design must be undertaken immediately following the TA Academy. Finally, across the board, the states expressed concerns about data quality, usability, and accessibility and evaluation of impacts, which are logical topics for follow-up or more detailed technical assistance.

Lessons Learned

In summary, some key lessons have been learned as a result of conducting this follow-up study. These lessons are drawn from the author's observations as a facilitator in the implementation of the TA Academy, data collected from the interviews, and observations and engagement with each of the participating states since the completion of the TA Academy. These observations consider the critical differences between state actions and outcomes as a result of their participation in the TA Academy.

- **Create responsibility among all staff:** Leadership from a key individual in a position of decision making power was critical to keeping the work going once the team returned from the TA Academy. Those states with a staff member responsible for working with LEAs on improving their core indicators for non-traditional career preparation or responsible for the implementation of the special populations provisions were more likely to implement their action plans and conduct additional activities than those states that did not.

- **Imbed in Perkins funding process:** Those states that imbedded the professional development and technical assistance outlined in their work plans into their LEA Perkins planning and funding processes were much more successful at sustaining their efforts. Although it is still too early to tell, preliminary outcomes point to this also being a successful strategy for seeing positive outcomes at the local level.

- **Engage everyone:** The states most successful in sustaining change were those that held regular team meetings, maintained and updated their action plans, and held each other accountable for accomplishing tasks. A high level of commitment and passion to gender equity appeared to also be a key ingredient of the most successful teams. The teams that continued the effort beyond the TA Academy were those that believed they could make a difference and felt strongly about the importance of ensuring gender equity in career and technical education.

- **Make the data available:** The availability of data disaggregated by school, program, and gender, race, and special population was a key element to action. Because the TA Academy's content was significantly focused on the improvement of data quality and its use, taking action on improving the availability of data at the local level was critical to state action after the TA Academy. Those states that took on this charge were also more likely to take on other professional development and technical assistance activities regarding non-traditional CTE program improvement.

- **Use the TA Academy as a spring board:** Those states that used the TA Academy as a

place to start their planning and then invested resources in obtaining additional technical assistance and professional development from other sources had better outcomes in completing and expanding their action plans. This action also brought resources to their state from other funding sources, which helped support their efforts started as a result of the TA Academy.

- **Drive action through accountability**. Without exception, those who participated in this follow-up study felt the core indicators measuring the participation of under-represented gender students in non-traditional CTE programs were the driving force creating the activity in their states in this area. Even those who have been involved in gender equity work for many years felt that without the accountability measures it was unlikely the amount of attention currently being paid to this issue would be sustained.

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Appendix A
Georgia Pre- and Post-TA Academy Responses to *Preparing Under-Represented Students for Success in Non-Traditional Occupations* Questionnaire

GEORGIA
(Pre-TA Academy responses are not broken out by individual response. "X" indicates majority response.

Section I: Background and Beliefs

1. Relative to other CTE issues, how pressing a need is there to increase student participation in and completion of NT CTE programs?

	Pre-TA Academy	Post-TA Academy
Critical		
Significant	**X**	**3**
Some		
No		

2. Given state resource limits and other pressing educational needs, at what grade level do you think it would be most appropriate and beneficial to initiate state efforts to improve student participation in, and completion of, of CTE programs that prepare them for employment in non-traditional occupations?

	Pre-TA Academy	Post-TA Academy
K-6		
7-8		
9-10	**X**	**2**
11-12		1
College		
No need		

Section II: Services to Support Student Participation in and Completion of CTE Programs
Evaluate the quality of services or resource provided in your state (1=poor, 5=excellent)

Professional development services to help the following groups support non-traditional students.

	1	2	3	4	5
Teachers or Coll. Instr.					
Pre			**X**		
Post			2		1

	1	2	3	4	5
Counselors or Coll. Advis.					
Pre		**X**			
Post			1	1	

School and Inst. Admin.

Pre		**X**			
Post		1	1		

Recruitment efforts to encourage students to enroll in NT programs.

Pre	**X**				
Post	**2**	1			

Support services to retain NT students once they enroll in CTE programs.

Pre	**X**				
Post	**2**			1	

Availability of non-gender biased materials

Pre		**X**			
Post		1	1		1

B&I work experience opportunities

Pre		**X**			
Post		2			

State technical support provided for NT activities

Pre			**X**		
Post				1	2

Level of state funding provided for NT activities

Pre			**X**		
Post			1	1	1

Section III. Obstacles to Student Participation in and Completion of NT Programs
(1=not a significant obstacle, 5=significant obstacle)

	1	2	3	4	5

Peer pressure to engage in traditional coursework

Pre			**X**		
Post		1	1	**1**	

School climate is not supportive of student involvement in NT programs

Pre			**X**		
Post			2	**1**	

Gender bias within curricular materials and textbooks

Pre		**X**			
Post		1	**2**		

	1	2	3	4	5

Lack of career guidance materials, counselors, and advisors

Pre		**X**			
Post		1	1	**1**	

Absence of NT role models

Pre			**X**		
Post			3		

Family and personal pressure that affect student decisions					
Pre				**X**	
Post			2	1	
Societal expectations of gender roles in the workplace					
Pre				**X**	
Post				4	
Lack of early exposure to NT career opportunities					
Pre				**X**	
Post				**2**	1
Lack of understanding on how to use data among local providers					
Pre				**X**	
Post		1	1	**1**	
Lack of quality data from LEAs					
Pre			**X**		
Post	1	**2**			
Lack of an efficient data collection system					
Pre		**X**			
Post		**2**			1
Misunderstanding on how to collect NT data from LEAs					
Pre			**X**		
Post		1	1		1

Appendix B
Pennsylvania Pre- and Post-TA Academy Responses to *Preparing Under-Represented Students for Success in Non-Traditional Occupations* Questionnaire

PENNSYLVANIA

Section I: Background and Beliefs

1. Relative to other CTE issues how pressing a need is there to increase student participation in and completion of NT CTE programs?

	Pre-TA Academy	Post-TA Academy
Critical	3	2
Significant	3	**4**
Some	1	
No		

2. Given state resource limits and other pressing educational needs, at what grade level do you think it would be most appropriate and beneficial to initiate state efforts to improve student participation in, and completion of, of CTE programs that prepare them for employment in non-traditional occupations?

	Pre-TA Academy	Post-TA Academy
K-6	1	1
7-8	**3**	**5**
9-10	2	1
11-12		
College		
No need		
One person circled all three		
One person circled 7-8 and 9-10		

Section II: Services to Support Student Participation in and Completion of CTE Programs
Evaluate the quality of services or resource provided in your state (1=poor, 5=excellent)

Professional development services to help the following groups support non-traditional students.

	1	2	3	4	5
Teachers or Coll. Instr.					
Pre	1	**4**	1		
Post	2	1	1	2	

	1	2	3	4	5
Counselors or Coll. Advis.					

Pre	1	**4**	1	
Post	1	2	2	1

School and Inst. Admin.

Pre	1	**3**	2	
Post	0	**3**	1	2

Recruitment efforts to encourage students to enroll in NT programs.

Pre	1	**3**	2	
Post	0	**4**	2	

Support services to retain NT students once they enroll in CTE programs.

Pre	1	**4**	1	
Post	0	**5**	0	1

Availability of non-gender biased materials

Pre	1	**3**	2	
Post*	0	2	1	2

*One "IDK"

B&I work experience opportunities

Pre	2	**3**	1	
Post	0	2	2	2

State technical support provided for NT activities

Pre	1	2	2	1
Post*	0	2	1	2

*One "IDK"

Level of state funding provided for NT activities

Pre	0	1	**5**	
Post*	1	2	1	1

*One "IDK"

Section III. Obstacles to Student Participation in and Completion of NT Programs
(1=not a significant obstacle, 5=significant obstacle)

	1	2	3	4	5

Peer pressure to engage in traditional coursework

Pre	0	2	0	**4**	1
Post	0	0	0	**3**	3

School climate is not supportive of student involvement in NT programs

Pre	0	1	**3**	2	1
Post	0	2	0	**4**	0

	1	2	3	4	5

Gender bias within curricular materials and textbooks

Pre	0	0	2	**4**	1
Post	0	1	**3**	2	0

Lack of career guidance materials, counselors, and advisors

Pre	0	0	1	**5**	1
Post	0	1	2	**3**	0
Absence of NT role models					
Pre	0	0	1	**4**	2
Post	0	0	1	**4**	1
Family and personal pressure that affect student decisions					
Pre	0	0	1	**4**	2
Post	0	0	0	2	**4**
Societal expectations of gender roles in the workplace					
Pre	0	0	2	2	**3**
Post	0	0	**3**	1	2
Lack of early exposure to NT career opportunities					
Pre	0	1	0	**3**	3
Post	0	1	2	**3**	
Lack of understanding on how to use data among local providers					
Pre	0	0	2	**3**	2
Post	0	1	2	**3**	0
Lack of quality data from LEAs					
Pre	1	1	1	**3**	1
Post	0	**3**	2	1	0
Lack of an efficient data collection system					
Pre	1	2	1	2	1
Post	1	**3**	1	1	0
Misunderstanding on how to collect NT data from LEAs					
Pre	1	2	1	1	2
Post	2	2	2	0	0