RECOMMENDATIONS TO IMPROVE THE COLLECTION AND USE OF PERKINS NONTRADITIONAL PARTICIPATION AND COMPLETION DATA IN IDAHO

Submitted by:

MPR Associates, Inc.
2150 Shattuck Avenue, Suite 800
Berkeley, California 94704

Revised
May 1, 2006

Contact:
Steven Klein (sklein@mprinc.com)
503-675-6619

BACKGROUND

To support states in improving the quality of their Perkins accountability data, in September 2005 the Office of Vocational and Adult Education (OVAE), US Department of Education, invited State Directors of Vocational Education to submit requests for individualized technical assistance. In response, the Idaho Division of Professional Technical Education (IDPTE) submitted an application seeking support in analyzing and interpreting its existing state Perkins data. During follow-up discussions, state administrators requested assistance assessing the quality of state data on nontraditional participation and completion, and in identifying strategies for using state data to promote opportunities in nontraditional careers.

Specific questions raised by administrators include:

- ✓ Does existing data provide an accurate assessment of school and institutional performance?
- ✓ How are Idaho school districts performing on the nontraditional measures?
- ✓ How can student data be used to promote nontraditional career opportunities in underperforming districts?

This report summarizes MPR researchers' review of state data and provides recommendations to assist the IDPTE in improving the accuracy and use of secondary and postsecondary professional technical education (PTE) data.

Reporting Nontraditional Participation and Completion in Idaho

To track enrollment and completion rates of students participating in coursework associated with nontraditional occupations, in 1999 the IDPTE identified a set of occupations that were out of gender balance, based on an analysis of 1990 U.S. Census data. These occupations were cross-walked into secondary and postsecondary PTE programs at the six-digit CIP code level. Over time, the state periodically added or deleted programs contained in these lists to account for new occupations or to remove those no longer considered nontraditional. Although changes have been modest over time, the postsecondary list of programs underwent significant change in FY05 to align with 2003 Census data. As of 2005, Idaho was reporting on 29 secondary and 59 postsecondary occupations, encompassing 21 female-underrepresented occupations at the secondary and 42 female-underrepresented occupations at the postsecondary levels.

The IDPTE has adopted indicators of nontraditional PTE programs that quantify the relative proportion of underrepresented students participating in and completing program coursework. Specifically,

Nontraditional Participation

Measure: Number of PTE program students (females plus males) who entered programs that are nontraditional for their gender in the reporting year.

Denominator: Number of PTE program students who entered programs that are identified as nontraditional for either gender in the reporting year.

Nontraditional Completion

Measure: Number of PTE program students (females plus males) who completed programs that are nontraditional for their gender in the reporting year.

Denominator: Number of PTE program students who completed programs that are identified as nontraditional for either gender in the reporting year.

Recommendation: Revise program reporting using updated nontraditional occupational lists

Discussions at the recent OVAE-sponsored Data Quality Initiative suggest that, with reauthorization, the federal government may endorse a list of nontraditional occupations that states will either adopt or adapt to structure reporting. Although OVAE has yet to issue regulations for constructing nontraditional measures, under the previous legislation states were advised that nontraditional PTE programs should be identified based on the composition of the workforce, and not on program enrollments.

While the current Act does not distinguish between the quality of employment opportunities—both high paying and low paying careers are covered—the Senate version of the 2006 legislation includes language that restricts reporting to employment or self-employment in "high skill, high wage, high demand occupations or professions." If adopted, or if OVAE opts to give states this flexibility in identifying

occupations, Idaho may be able to further focus its reporting on a subset of career pathways within existing PTE programs. It is anticipated that OVAE will provide additional direction at the upcoming regional conferences, to be held in Phoenix and Atlanta in June 2006.

Recommendation: Consider holding nontraditional occupational lists constant over the lifetime of the Act

During measure development for the 1998 Act, OVAE recommended that states identify secondary and postsecondary PTE programs and/or courses associated with nontraditional occupations at the outset of the new legislation. Once identified, states were to report on selected programs and/or coursework over the lifetime of the Act, irrespective of whether gender balances equalized over time. Holding the base of programs constant over time was intended to ensure that states could monitor trends to assess state progress in closing enrollment gaps.

One drawback with holding program lists constant is that it can limit states' ability to report on new nontraditional curricular initiatives, such as those aimed at recruiting females into advanced technology and pre-engineering courses. This can mean that states will not receive credit for increasing female participation in traditionally male-dominate, high wage, high skill careers. Conversely, making annual changes to occupational lists, as Idaho has done, can undermine trend analysis because the base of programs included in the measure is constantly shifting over time.

To standardize reporting of reauthorized measures, OVAE has sponsored a statewide *Data Quality Initiative* to examine issues relating to nontraditional measures. Preliminary discussion suggests that states favor holding lists of out-of-gender balance occupations fixed over the life of the Act to establish reliable trend data. It is likely that a final decision will be reached by OVAE and states following the June 2006 regional conference meetings; as such, IDPTE administrators should continue to participate in DQI discussions to ensure state measurement concerns are addressed.

Recommendation: Conduct annual data quality reviews of nontraditional data

Analysis of 2004-05 secondary Perkins data suggests that not all district administrators are achieving similar outcomes on nontraditional measures. This may indicate that there is a data quality issue that is undermining reported data, or simply that certain agencies are achieving results substantially above or below statewide averages. To assess data quality and identify promising practices, it is recommended that state administrators review data identified in the following measurement areas.

(1) Nontraditional Program Offerings

As illustrated in Table 1, 64 of the 163 secondary schools reporting Perkins data in the 2004-05 school year indicated that there they had no applicable nontraditional programs offered on-site. While this result may accurately reflect the content of district offerings, state administrators may wish to confirm that no

state-identified nontraditional programs are offered within these schools, particular in those sites in which a substantial proportion of enrolled students were identified as PTE concentrators.

(2) Nontraditional Enrollments

Assuming that nontraditional enrollment rates reflected the workforce composition, the proportion of underrepresented students in nontraditional programs would not be expected to exceed the 25 percent threshold used to identify out-of-gender balance occupations. Analysis of enrollment data suggests, however, that roughly 36 percent of Idaho schools (35 of 96) are enrolling substantially more underrepresented students in nontraditional programs than might be expected (see Table 2).

While relatively high nontraditional enrollment rates might be expected for small schools or those offering a limited number of nontraditional programs, a number of high schools with large nontraditional populations, including *Mountain View, Sugar-Salem, Shelley*, and *Preston*, appear to be succeeding in enrolling students above the 25 percent threshold. This may be because these schools operate programs that are geared toward enrolling underrepresented students, because educators on-site have pioneered promising strategies for enrolling underrepresented students, because the economic, commercial, or cultural climate supports nontraditional student enrollment, or because data quality issues are confounding reporting.

Conversely, a number of schools appear to have difficulty attracting underrepresented students to participate in PTE programs nontraditional for their gender. As with over performing schools, a number of factors, including program recruiting and data quality may account for observed performances. IDPTE administrators may wish to follow-up with identified schools to assess whether enrollment outcomes are a function of program inputs or data collection strategies.

(3) Nontraditional Completion (Measure 4P2)

Educators often encounter significant social and cultural obstacles to enrolling and retaining underrepresented students; consequently, it might be predicted that few schools would average at or above an underrepresented student completion rate of 25 percent in nontraditional PTE programs. Unexpectedly, a review of state data indicates that one-third of Idaho secondary schools (32 of 96) exceeded the 25 percent completion threshold, with 10 schools achieving a 100 percent completion rate and an additional 6 schools reporting rates of 50 percent or greater (see Table 3).

In most instances, these inflated school rates are due to a small number of students completing nontraditional programs in a given year. For example, only one underrepresented student enrolled in a nontraditional PTE program in both *Hansen* and *Soda Springs,* and this individual also completed, accounting for these schools 100 percent completion rate. There are, however, a number of schools in which program size cannot account for observed outcomes. In particular, IDPTE administrators may wish to review data reported by three high schools—*Reg II PT Academy, Jerome*, and *Madison*—to determine how the number of nontraditional program completers reported in Measure 4P2 can exceed the number of

program enrollees reported in Measure 4P1. Administrators may also wish to review data for 9 smaller schools—including *Praire, American Falls, Weiser, Orofinno, Priest River, Parma, Timberline,* and *Riverbend Professional Technical* that reported numbers of program completers equal to, or nearly equal to the number of program enterers.

It appears that an equal number of schools are encountering difficulty in helping underrepresented students to achieve completion status. For example, 36 of 96 schools achieved a completion rate of less than 10 percent, meaning that less than 1 of every 10 students completing a nontraditional program was a member of an underrepresented gender. IDPTE administrators may also wish to follow-up with administrators in these low-performing schools to determine whether the completion rates observed are a result of program operation or the manner in which data are collected.

Perhaps the most ideal measure for assessing school success would be to identify a cohort of underrepresented students who enroll in and subsequently complete a nontraditional program. Although Idaho does not currently have the capacity to collect this type of longitudinal data, it is possible to proxy this measure by expressing the number of underrepresented program completers in the 2004-05 school year as a percentage of underrepresented program enrollees in 2002-03. While there are some obvious problems with this approach, on average, schools that succeed in retaining underrepresented students might be expected to produce underrepresented completion rates approaching 100 percent.[1]

The application of this proxy measure is detailed in Table 4. Statewide, it appears that on average, roughly one of every four underrepresented students enrolled in nontraditional coursework in 2002-03 went on to complete their program (27 percent). Although IDPTE administrators may wish to assess data quality for schools with completion rates exceeding 100 percent or approaching 0 percent, it is likely that these sites either added or deleted programs over the 3-year period. State administrators may also wish to follow-up with schools with relatively high rates of student completion relative to prior years enrollment, to assess whether these schools have pioneered strategies for retaining underrepresented students who initially choose to participate in nontraditional programs. Conversely, schools with relatively low completion rates—such as *Flier High School* which enrolled 29 nontraditional students in 2002-03 but had 0 completers in 2004-05—may be succeeding at enrolling underrepresented students into nontraditional programs, but lack the necessary program supports to retain students over the course of the program.

[1] Since students typically begin PTE program concentration in the 9th or 10th grade, use of FY03 data can provide a rough estimate of the number of students who persevered in nontraditional coursework following initial program enrollment. Unfortunately, a number of factors undermine the use of this proxy, including student mobility, the addition or removal of PTE programs, and the fact that many students may be explorers who have no intention of completing a program. For these and other reasons, care must be taken in extrapolating from these findings.

Recommendation: Review postsecondary data to ensure administrators understand reporting requirements

Postsecondary enrollment and completion data for the nontraditional measures do not exhibit any obvious discrepancies (see Tables 5 and 6). On average, participation and completion rates are well within the 25 percent threshold level established by Congress to define out-of-gender balance occupations, perhaps signaling that postsecondary program participation rates mirror those observed in the workplace. The range of institutional performances is also small, with only one institution—*ISU*—exhibiting substantially lower performance rates across the two measures. This may indicate that *ISU* educators are having difficulty recruiting and retaining underrepresented students to participate in nontraditional programs, that the program mix at *ISU* differs from that offered at other postsecondary campuses, or that institutional administrators are using differing data collection procedures to report information.

If states statistics are accurate, than IDPTE administrators may wish to work with administrators at all institutions to increase statewide enrollment and completion rates. Administrators may also wish to assess whether there are any promising practices that are being employed at *CSI* or *LCSC*, which have relatively higher enrollment and completion rates than other institutions.

Finally, Table 7 arrays the relationship between enrollment and completion rates using the proxy measure described earlier. On average, when underrepresented completers in 2004-05 are expressed as a percentage of underrepresented enrollees in 2002-03, the statewide postsecondary completion rate is roughly 27 percent. Although institutional performances vary around this observed rate, completion rates at *NIC* are substantially higher than at other institutions. This difference may be due to a number of different factors, including programmatic differences in PTE offerings and demographic variation in students. Higher completion rates may also reflect greater institutional success in retaining students, in part because *NIC* enrolls a relatively smaller student population, presumably in a limited number of nontraditional program areas.

Recommendation: Analyze state data to identify effective programs and those in need of improvement

Ultimately, IDPTE staff should take responsibility for reviewing the status of nontraditional program services within the state and take steps to improve local performance. To gain perspective on district operations, IDPTE staff may wish to conduct a detailed analysis of statewide PTE data to identify local agencies that appear to be making substantial progress in improving student participation and completion in programs nontraditional for their gender, as well as local agencies that warrant additional support.

As a starting point, MPR recommends that IDPTE staff review the report *Nontraditional by Gender—Career and Technical Education Program Study* developed by MPR researchers for the Massachusetts Department of Education (See Appendix A). This summary report was used by Massachusetts career technical administrators to identify programs that appear to be effective in encouraging student participation and completion of nontraditional programs, controlling for geographic and economic factors that can affect students' enrollment

and persistence. IDPTE administrators may use this report to gain an understanding of issues underlying the analysis of state Perkins data, as well as to identify strategies for analyzing their existing state data.[2]

Beyond conducting routine analysis of Perkins performance data, IDPTE administrators may wish to disaggregate state data to provide a better understanding of district performance. Some suggested approaches drawn from the Massachusetts report include:

- Table 13: Percentage of PTE students participating in and completing PTE nontraditional programs

  School district participation (4S1) and completion (4S2) rates are sorted based on nontraditional participation rates in the baseline year. This table permits state administrators to (1) quickly identify districts that appear to have high overall success in improving nontraditional student access to PTE programs (2) assess whether performance levels fluctuate over time, which may indicate that results are not being consistently reported, and (3) track trends over time to determine whether districts are making progress in improving student access to programs.

- Table 14: Nontraditional program enrollment rates versus labor market nontraditional composition

  Nontraditional occupational enrollments in selected program areas are contrasted with state labor market employment statistics to determine whether PTE programs are enrolling nontraditional students at rates comparable to or above the state employment average. This information can be used to identify PTE program areas that appear to be (1) exceeding statewide labor market participation rates, suggesting that schools are making progress toward changing the composition of the workforce, and (2) lagging statewide labor market participation rates, suggesting that attention may need to be focused on these instructional areas if labor market compositions are to shift. (Note: Constructing this table will require that IDPTE administrators coordinate with representatives of the Idaho Commerce and Labor [http://lmi.idaho.gov/] or other state agencies to identify employment statistics for nontraditional occupations.)

- Table 15: Nontraditional program enrollment rates versus labor market nontraditional composition

  School district nontraditional enrollment rates—aggregated across all nontraditional programs offered in the district—are compared to statewide nontraditional enrollment rates, weighted based on the mix of nontraditional programs in the school. This information can be used to assess the whether school districts are succeeding in attracting underrepresented students to participate in programs nontraditional for their gender at a rate that meets or exceeds the statewide average employment rate for associated occupations. This statistic can provide useful information that trend or performance data alone might not supply; for example, a district with an above average enrollment rate might be expected to contribute to reducing societal inequity even if district performance rates fall below the state performance target.

- Table 16 & 17: Nontraditional program enrollment rates controlling for nontraditional program, by district

  These tables control for nontraditional program areas for males and females, listing for each program area the school district enrollment rates compared to statewide and labor market average. Using this information, it is possible to quickly assess (1) the number of school districts offering access to nontraditional programs; (2) the number of underrepresented students enrolling in nontraditional programs; (3) the relative performance of school districts for specific program areas; (4) the performance of individual districts relative to the statewide nontraditional program average, and (5) the performance of individual districts relative to the statewide labor market employment rate.

- Table 18: Nontraditional program enrollment rates controlling for district, by nontraditional program

[2] MPR also recommends that MDE staff contact Karen DeCoster, Educational Specialist, Massachusetts Department of Education, Career and Technical Education Unit, to obtain more detailed information on issues underlying the analysis of state data on nontraditional PTE students. Phone: 781-338-3115 or e-mail to: kdeCoster@doe.mass.edu

This table identifies the nontraditional programs offered within each school district, and program enrollment rates compared to statewide and labor market averages. Using this information, it is possible to quickly assess (1) the distribution of nontraditional programs offered within a school district; (2) the number of underrepresented students enrolling in different nontraditional programs; (3) the relative enrollment rate of different program areas; (4) the performance of individual programs relative to the statewide nontraditional program average, and (5) the performance of individual programs relative to the statewide labor market employment rate.

A review of data contained within these tables illustrates how IDPTE administrators can disaggregate state and district data to obtain a more nuanced assessment of educational performance outcomes. For example, while an aggregate district or school rate can provide information on performance across all nontraditional programs, unpacking the data at the program level can identify whether outcomes represent a district- or school-wide commitment to increasing student equity, or simply reflect results for a single, large PTE program that offsets those of other, smaller programs.

Recommendation: Evaluate the impact of cultural and socioeconomic factors on students' career choices.

As part of its *Program Quality Initiative*, OVAE sponsored a research initiative to identify root causes that affect student performance on each Perkins core indicator, along with intervention strategies that, the research suggests, are effective in changing student outcomes. This document, entitled *Research on Causes and Improvement Strategies for Perkins III Core Indicators: Example Models and Research Results* can provide a starting point for state and local administrators seeking to understand the persistence of nontraditional occupations in our society. A copy of the report can be downloaded from OVAE's accountability website [www.edcountability.net].

Improved analysis of statewide performance data can assist IDPTE administrators in identifying school districts, or programs within school districts, that appear to be having uncharacteristic success in improving student access to and/or completion of nontraditional programs. Once these successful programs are identified, state administrators should follow-up with district staff to identify the strategies or unique conditions within the community that support student success, and the feasibility of transferring these approaches to other sites.

State staff may also wish to institute new approaches to collect information on nontraditional program operations. Current data collection efforts under Perkins do not provide detailed information on instructional approaches that appear to be effective in improving program provision or the affect of external factors (e.g., cultural and socioeconomic factors) on program operations. Structured telephone interviews or mailed surveys to identified programs, for example—might yield more useful information about districts' efforts to improve enrollment in, and completion of, nontraditional PTE programs. An example of a survey used to assess the status of nontraditional programs in Massachusetts is included in Appendix A of the Massachusetts report.

Recommendation: Communicate information to assist local providers in improving program services

Local providers often do not understand how program data is used by the state to calculate their performance outcomes, or how their aggregated program performance data can be used to initiate a program improvement effort. Demystifying the reporting process can contribute to data quality by encouraging local educators to review important data fields for accuracy prior to its submission to the state. One means of improving communication is for the state to develop a guidebook detailing why data on nontraditional education are collected, factors affecting student performance, and resources to support educators in undertaking program improvement efforts. An example of this type of technical assistance guidance, developed by the Illinois Office of Educational Services, is included in Appendix B of this paper.[3]

IDPTE administrators may also wish to make available resource materials that assist district staff in using their Perkins data to institute local reforms. In particular, MPR recommends that IDPTE consider distributing the OVAE guidebook *"Improving Performance: A Five Step Process."* This guide was developed by OVAE to help secondary and postsecondary educators use their data to improve their performance on the Perkins core indicators. It describes a generic five-step process that can be applied in its existing form or modified to address state conditions. A copy of the complete publication may be downloaded from the Resource Library section of OVAE's *Peer Collaborative Resource Network* website (www.edcountability.net).

[3] The Illinois Office of Educational Services has complied a substantial library of resources on improving student access to nontraditional occupations. This information can be accessed on-line at: http://www.ioes.org/genderequity.cfm