
3A

Information/Action

Educator Preparation Committee

Accreditation: Update on the Development of a Data Warehouse and Data Dashboards for the Commission

Executive Summary: This agenda item provides an update on the work to develop a data warehouse and data dashboards for purposes of providing transparency, accountability, and indicators of program quality to the Commission, candidates, programs, stakeholders, and the public. Sample dashboards will be demonstrated for initial review to demonstrate the potential of the planned data dashboards. In addition, the item presents information regarding the selection of data elements relating to educator preparation program quality dashboards and requests Commission input.

Policy Questions: Do the sample and the planned additional data dashboards meet Commission expectations for access and transparency within the accreditation process? What data elements are appropriate to collect and display as indicators of program quality on the program quality data dashboards?

Recommended Action: That the Commission discuss what data elements would be appropriate to collect and display as indicators of program quality and provide direction to staff.

Presenters: Roxann Purdue, Consultant, and Teri Clark, Director, Professional Services Division

Strategic Plan Goal:

I. Educator Quality

- b) Develop, maintain, and promote high quality authentic, consistent educator assessments and examinations that support development and certification of educators who have demonstrated the capacity to be effective practitioners.

Accreditation: Update on the Development of a Data Warehouse and Data Dashboards for the Commission

Introduction

This agenda item provides (a) information on work to date to develop a data warehouse and data dashboards, including a demonstration of an initial set of dashboards focusing on a segment of the workforce demographics, and (b) a discussion of data elements for the program quality dashboards, including a set of policy questions for the Commission's discussion and potential direction to staff. The development of a data warehouse and data dashboards for the Commission is one part of the many-faceted project to strengthen and streamline the Commission's accreditation system. The data warehouse currently under construction will serve as a single repository of all Commission data. The primary purposes of developing data dashboards are to increase public access to information about educator preparation, assignment and supply; candidate and program outcomes; and to provide a variety of both input and outcomes data for use within the accreditation system. Therefore, several different types of data dashboards are being developed to meet a variety of information needs.

Background

A contactor has been working with staff to develop a "data warehouse" that will collect, store, and maintain the full range of Commission data in a single repository and provide the means to interconnect the data so that it can be used to develop and update data dashboards over time. A description of this work to date is provided below. A depiction of the concept of the Commission's data warehouse and dashboards is provided in Appendix A with a graphic of data dashboards currently developed or under development provided in Appendix B.

Development of the first data dashboard prototypes kept the following purposes and data needs in mind:

- **Workforce Demographics:** The purpose of this set of dashboards is to provide information about how many certificated staff are employed in the county, district, and schools; how many individuals are teaching on less than full credentials; and how many misassignments, if any, there are in the county, district, and schools.
- **Preparation Program Features:** The purpose of this set of data is to provide information about each institution accredited by the Commission to offer educator preparation, including what programs the institution offers and other contextual data such as how many candidates enroll in and complete each program.
- **Preparation Program Quality:** The purpose of this set of data is to provide indicators of the quality of the preparation received by candidates, including summaries of survey data from program completers, employers, and master teachers as well as aggregated performance assessment data from the types of credential preparation programs within which candidates

must take a performance assessment. The second part of this agenda item addresses the topic of the data elements for the program quality dashboards in greater depth.

The educator preparation dashboards will provide both micro (institution and program level data) and macro (statewide summary data) depictions. For example, there will be a dashboard that identifies the number of institutions accredited by the Commission, the number and types of programs operating statewide, as well as program specific dashboards that focus on specific programs at specific institutions such as the Multiple Subject preparation program at the institution.

Discussion of the Initial Set of Data Dashboards under Development

During 2015-16, a contractor is working with Commission staff to develop data dashboards that provide visualizations of Commission data as well as the ability to drill down to more detailed data. These first sets of dashboards primarily rely on data that the Commission has collected for many years, such as:

- Assignment Monitoring Data and Teacher Vacancies
- Quick Facts: Aggregated State Data
- Educator Supply and Demand
- Educator preparation program features, including Title II data
- Information specific to institutions approved to offer educator preparation

Initial Dashboard A: Assignment Monitoring and Teacher Vacancies

This first set of dashboards was developed in December 2015, reviewed by staff and stakeholders, and published on the Commission's website early in 2016. These dashboards provide a visual display of both assignment monitoring and teacher vacancy data that previously were only available in Commission agenda items with hundreds of pages of detailed data tables attached in appendices. The goal of the data dashboards is to provide graphic visualizations of aggregate data to ensure accessibility and transparency and enable any user to filter, customize, drill down, export, and share the data in detail. Staff will provide a brief demonstration of these first data dashboards during the February 2016 Commission Meeting.

Initial Dashboard B: Quick Facts: Overview of State Aggregate Data

This dashboard will provide a visual depiction of statewide data presented in the current annual [Quick Facts](#) document. This dashboard is expected to be posted on the Commission's website in March 2016.

Initial Dashboard C: Educator Supply and Demand

This set of dashboards will provide visualizations of the statewide data presented in the Teacher Supply Report as well as other data sources that inform teacher supply and demand data. Dashboards will include an Educator Supply and Demand Landing Page with trend data, Initial Teacher Credential Issuance Data by Segment and Type, a Teaching Credential Detail Data Search Page, Intern/Permits/Waivers Data (not fully prepared teachers), Other Credentials (non-teaching), and Teacher Demand Data by County and Subject informed by California Department

of Education's Projected Teacher Hire Data. This set of dashboards is expected to be posted on the Commission's website by the end of March 2016.

Initial Dashboards D and E: Educator Preparation Programs and Institutional Profiles

This set of dashboards will provide information on the institutions accredited by the Commission to prepare educators and on the educator preparation programs offered by each institution. Some of the information provided in these dashboards will be extracted from the Title II data and will be contextual in nature (e.g., enrollment, admission requirements, mean GPA of admitted candidates).

A challenge with using the Title II data is that institutions are only required by the federal government to submit data for teacher candidates who are earning a preliminary multiple subject, single subject or education specialist teaching credential. Individuals earning a different type of credential, such as a pupil personnel services or administrative services credential, as well as individuals preparing to earn a second tier (Clear) credential, are not included in the Title II data. In addition, Title II data is aggregated at the institution level—there is no distinct data for multiple subject, single subject or education specialist programs.

In addition, performance assessment data for credential areas that require performance assessments and surveys of program completers, employers and master teachers will be summarized and included in program and institutional profiles. At this point in the development process, existing data sources are being used to populate the initial dashboards. Other program quality data elements identified by the Commission for inclusion in the warehouse and available for use on the Educator Preparation Program dashboards will also be incorporated, to the extent feasible.

It is expected that this set of dashboards will be posted on the Commission's website by the end of May 2016. This set of dashboards will be shaped by Commission direction regarding the type and range of program quality data that should be included in the data warehouse.

Initial Dashboard F: Institution-Specific Data Access (for Commission-approved institutions only)

This last set of initial dashboards will allow each individual institution to access its own data as well as to submit required data to the Commission. This set of dashboards is intended to serve as a functional space for Commission-approved institutions and the programs offered by the institutions to access data and documents available as a result of this project, and will be only available to each institution through individual log-in. In this manner, the institution will have data available to inform program improvement and the Commission may communicate and work with institutions on their accreditation data and documents. This set of dashboards is expected to be ready for use by the end of June 2016.

Overview of Other States' Efforts to Develop Program Dashboards

It is instructive to informing the Commission's efforts to look at what other states are doing in the area of data transparency. A number of states have begun to develop teacher preparation

program performance measures or indicators (see Appendix C for links to other state dashboards). Some of the other states' dashboards focus on program quality while other states provide contextual and production data. Some states use Value Added Methodologies (VAM) to evaluate educator preparation programs based on K-12 student performance and publish findings on their dashboards (Tennessee and North Carolina). Other states are using a point system where the data are used to develop a rating system for the institutions which provides a score or ranking (Delaware and Georgia). Some states have a text-heavy reporting system that includes both narrative and data (Ohio).

Unlike some states, the Commission's approach to evaluating and publishing data regarding preparation program quality has not included VAM strategies or ranking systems; as a state, California has not embraced these approaches. The Commission's emerging policy relies on other kinds of outcome measures to determine program quality, including performance assessment data and data from an array of surveys from candidates, mentor/master teachers, supervisors, employers, and other stakeholders within the educator preparation system. The revised Common Standards (December 2015) include a new standard that requires institutions to focus on program impact. As institutions move forward to implement this standard, staff expects to work with the preparation community along with the Commission to identify and refine additional indicators of program quality that can be added to dashboards in the future.

Further Discussion of California's Data Dashboards and Related Policy Questions for the Commission's Consideration

In thinking about the potential data elements to include in the Program Quality dashboards, staff has reviewed the work of an organization known as [Teacher Preparation Analytics](#). This organization has been working with a number of states as well as national organizations to develop a list of key effectiveness indicators for educator preparation programs. As part of the ongoing work being done with the Network for Transforming Education Preparation (NTEP) in conjunction with the Council for Chief State School Officers (CCSSO), staff has had conversations both with other states developing dashboards and with Teacher Preparation Analytics. The Teacher Preparation Analytics indicators are being considered in other states as they build educator preparation program dashboards, and are provided here as an efficient means of organizing the discussion of program dashboards. Including information from Teacher Preparation Analytics, however, does not imply agreement with any of the specific indicators identified by this organization and/or used by other states.

The indicators identified by Teacher Preparation Analytics relative to program quality dashboards are organized into four categories:

- Candidate Selection Profile
- Knowledge and Skills for Teaching
- Performance as Classroom Teachers
- Contribution to State Needs

Within each category, Teacher Preparation Analytics identified 2-4 key indicators (Appendix D). This list of key indicators provides a starting point for organizing the following discussion and policy questions for the Commission's input and consideration.

Within the ***Candidate Selection Profile*** category, Teacher Preparation Analytics' indicators include academic strength, teaching promise and diversity information. These indicators focus on the candidate at the point of entry. In California, the Basic Skills Requirement and the subject matter requirement are also indicators that could be considered at the point of entry to a program. Some of this data is collected for the Title II report (enrollment, average GPA, demographics of candidates) but the data collected are only for initial teacher preparation—multiple subject, single subject and education specialist. No data is collected for other types of credential program participants in the Title II reporting process.

Staff suggests that certain contextual information, such as enrollment and number of completers, should be required to be submitted by each educator preparation program annually. Staff also suggests that other data, such as number of clinical practice hours, total units in the program, and required course title and summaries could be required to be submitted initially and subsequently updated if or when changes are made in the program design or coursework. The institutional access-only dashboards described above will allow institutions to submit data electronically to the Commission for inclusion in the data warehouse.

Policy Question Regarding Data Elements for the Candidate Selection Profile: Should candidate selection data be collected and published as part of a program dashboard? If yes, what types of data should be included?

Possible *Candidate Selection* data elements for the Commission's consideration:

- Mean GPA of applicants, mean GPA of enrollees
- Length of program—units and months to complete
- Number of applications received
- Number/percentage of individuals accepted
- Number/percentage of individuals completing the program 'on time'
- Number/percentage of those who leave the program (voluntarily and counseled out)
- % of admitted candidates who have satisfied basic skills at admission
- % of admitted candidates who have satisfied subject matter at admission
- Additional data elements?

Within the ***Knowledge and Skills for Teaching*** category, Teacher Preparation Analytics indicators include a content knowledge assessment, a pedagogical content knowledge assessment, a teaching skill assessment and program completer rating of the program. For California, a content knowledge assessment would not be a valid measure of teacher preparation program quality because teacher preparation programs do not provide the subject matter preparation and therefore the preparation programs should not be held responsible for candidate outcomes on that component. California does not require both a pedagogical content knowledge examination and a teaching skill performance assessment; instead, California combines the assessment of

both types of knowledge and skills within a single teaching performance assessment for general education candidates. The final key indicator in this category identified by Teacher Preparation Analytics is program completer surveys, a data source which California is already implementing. Performance assessment data for preliminary teaching and administrative services programs will be available once the teaching performance assessments have been redesigned to meet the revised Assessment Design standards and the administrator performance assessment for program candidates has been developed and implemented.

Policy Question Regarding Data Elements for Knowledge and Skills for Teaching: What kinds of *knowledge and skills for teaching data* should be collected and displayed as part of a Commission-developed program quality dashboard?

Possible *Knowledge and Skills for Teaching* data elements for the Commission's consideration:

- Aggregate performance assessment data for each approved program that incorporates a performance assessment
- Aggregate RICA scores for Multiple Subject and Education Specialist candidates, by program
- Aggregate survey data: completers, employers, master teachers
- Additional data elements?

Within the ***Performance as Classroom Teachers*** category, Teacher Preparation Analytics indicates that impact on K-12 student learning, demonstrated teaching skill and K-12 student perceptions are three indicators that could be used as part of program quality data dashboards. In California there are currently no statewide systems in place to collect impact on K-12 student learning, teacher evaluation information, or K-12 student survey data. These are local matters addressed by employers, and staff do not recommend that the Commission's system be adapted to include these kinds of data. Rather, staff recommends that the Commission focus on program impact, and see what kinds of quality metrics emerge as the preparation community works to implement the new Common Standards.

Within the ***Contribution to State Needs*** category, Teacher Preparation Analytics suggests that employment and persistence as a teacher as well as employment and persistence in high-need subjects and schools are key indicators that could be used. In California, there are currently no statewide systems that collect and analyze employment and persistence data in the schools, including in high-need subjects and schools. The California Department of Education (CDE) annually collects information about each educator employed in the public schools and the teaching assignment for those who are teachers. The Commission has data on each educator who earns a credential, but the legal authority to share these data and examine patterns of credentialing, employment, mobility, attrition and re-entry into the profession is not clear. Moreover, neither the CDE nor the Commission currently has a clear mandate or staff resources to engage in this type of data analysis and reporting.

Policy Question Regarding Data Elements for Contribution to State Needs: Should contribution to state needs data be collected and published as part of a Commission dashboard? If yes, what types of data should be included?

To move forward in this area would require further analysis of the Education Code to determine what kinds of data can be collected and by what state agency. Absent appropriate legal authority, the Commission might consider sponsoring legislation that would enable the agency to collect and report on the following kinds of data:

- The numbers of individuals initially credentialed who are currently employed in a position requiring their credential
- Where program completers are employed
- Retention of educators, including in hard to staff schools and content areas

Staff Recommendation

Staff recommends that the Commission discuss what data would be appropriate for inclusion in the Commission's program quality data dashboards, per the policy questions provided above, and provide direction to staff as appropriate.

Next Steps

Based on the Commission's direction, staff will work with the contractor to move forward the work on developing program quality data dashboards. In addition, staff will continue to work with the contractor on the multiple other dashboards as described in this agenda item.

Inputs

- CASE Data**
- Credentials
 - Degrees
 - Exams
 - Discipline

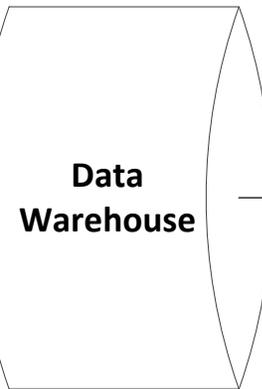
- Filemaker Databases**
- Assignment
 - Accreditation
 - Approved Program
 - Program Sponsor

- Additional Sources**
- Federal Data
 - Title II Data
 - CDE Data

- Surveys**
- Program Completer
 - Employer
 - Master Teacher

- Accreditation**
- Annual Data:
 - Demographic
 - Continuous Improvement
 - Program Review Data

ETL*



Educator Preparation

Educator Workforce

Visualizations

- Institution Profile**
- How many entities sponsor programs
 - How many of what types of new credentials are produced annually
 - Ability to select for drill down as follows:
 - **Regions**
 - **Institutions (IHEs and LEAs)**
 - **Programs**
 - **Routes (online, intern, residency, undergraduate/blended, online hybrid)**

- Accreditation Data**
(Password Protected)
- Surveys
 - Performance Assessment Data

- Reports**
- For Preparation
 - **Title II**
 - **Examinations**
 - For Workforce
 - **Teacher Supply (and Demand)**
 - **Services Credentials**
 - **Assignment Monitoring Report**
 - **Child Development Permit Report***
- *not a current report

- Workforce Data**
- Information on PIPs ,STSPs, Intern, and other Credentials issued for:
 - **Schools**
 - **School Districts**
 - **Counties**

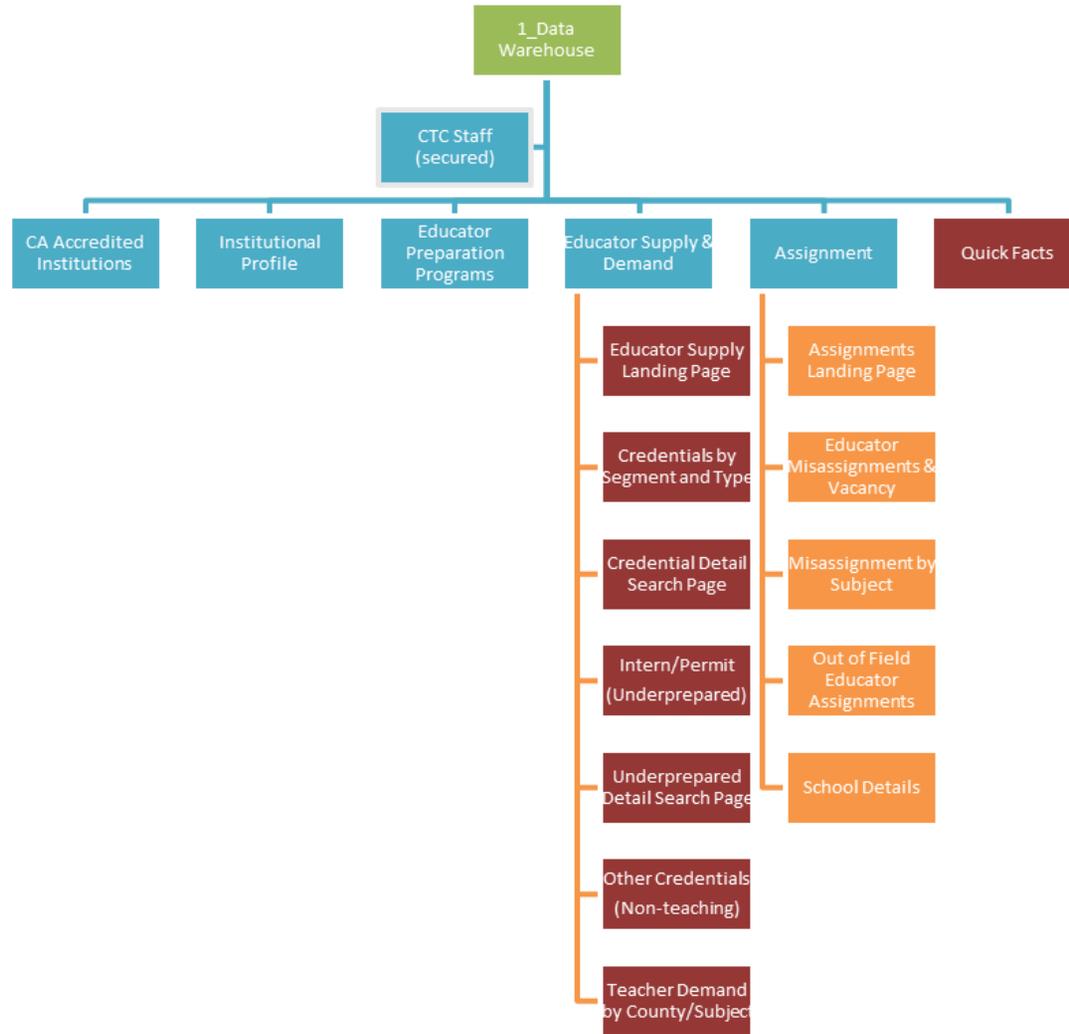
- Data Available for Analysis by External Users:**
- Program data (TBD)
 - Credential data (TBD)
 - Data addressing most frequent requests
- Export/search button on page

Possible Data Elements for Institution Profile Pages:

- **Demographic and descriptive information** (geographic region, total enrollment, gender, ethnic breakdown, number of programs, other salient descriptive info)
- **Outcomes specific to each program offered** (with “how to read this material” for context)
 - # of candidates start/finish the program
 - Time to completion (range and mean)
 - Courses required
 - Link to syllabi and other program Info
- **Number who take examinations** (CBEST, CSET, RICA)
 - Mean and range of scores by cohort
- **Performance Assessment data**
 - By cohort: Pass rates (first time, cumulative); mean scores by TPE domain
- **Key survey results**
- **Graduate employment/retention rates**
- **Link to accreditation status reports**
- **Institution Response to Data**

*ETL: Extraction, Transformation, and Loading.

Appendix B-Data Dashboards



Legend

 Primary Topics

 Developed Dashboards

 Dashboards in Development

Appendix C

Other States' Approaches to Data Dashboards

State	Link to the Dashboards
Delaware	http://www.doe.k12.de.us/domain/398
Georgia	http://www.gapsc.com/GaEducationReform/ProgramApproval_Accountability/Program_Approval.aspx Georgia's system addresses the preparation of both teachers and leaders (http://www.gapsc.com/GaEducationReform/PPEMs/PPEMs.aspx)
Kentucky	https://wd.kyepsb.net/EPsB.WebApps/Dashboard/DashbrdWeb/ Delineates between Program Demographics and Program Performance on the dashboard
Massachusetts	http://www.doe.mass.edu/edprep/toolkit/
North Carolina	http://egdashboard.northcarolina.edu/preparation/ There are additional preparation entities in North Carolina that are not in the North Carolina University System and are not included in these dashboards.
Ohio	Ohio's dashboards (https://www.ohiohighered.org/educator-accountability/2014-performance-reports#overview) provide data related to both teacher and leader program quality.
Tennessee	http://www.tn.gov/thec/article/report-card
Missouri	https://dese.mo.gov/educator-quality/educator-preparation/educator-preparation-data-resources

Appendix D

Key Effectiveness Indicators developed by Teacher Preparation Analytics

Assessment Categories	Key Indicators	Measures
I Candidate Selection Profile	Academic Strength	PRIOR ACHIEVEMENT – (1) <u>For Undergraduate Programs</u> : Non-education course GPA required for program admission. Mean and range of high school GPA percentile (or class rank) for candidates admitted as freshmen. Mean and tercile distribution of candidates’ SAT/ACT scores. GPA in major and overall required for program completion. Average percentile rank of completers’ GPA in their major at the university, by cohort. – (2) <u>For Post-Baccalaureate Programs</u> : Mean and range of candidates’ college GPA percentile and mean and tercile distribution of GRE scores TEST PERFORMANCE – <u>For All Programs</u> : Mean and tercile distribution of admitted candidate scores on rigorous national test of college sophomore-level general knowledge and reasoning skills
	Teaching Promise	ATTITUDES, VALUES, AND BEHAVIORS SCREEN – Percent of accepted program candidates whose score on a rigorous and validated “fitness for teaching” assessment demonstrates a strong promise for teaching
	Candidate/Completer Diversity	DISAGGREGATED COMPLETIONS COMPARED TO ADMISSIONS – Number & percent of completers in newest graduating cohort AND number and percent of candidates originally admitted in that same cohort: overall and by race/ethnicity, age, and gender
II Knowledge and Skills for Teaching	Content Knowledge	CONTENT KNOWLEDGE TEST – Program completer mean score, tercile distribution, and pass rate on rigorous and validated nationally normed assessment of college-level content knowledge used for initial licensure
	Pedagogical Content Knowledge	PEDAGOGICAL CONTENT KNOWLEDGE TEST – Program completer mean score, tercile distribution, and pass rate on rigorous and validated nationally normed assessment of comprehensive pedagogical content knowledge used for initial licensure
	Teaching Skill	TEACHING SKILL PERFORMANCE TEST – Program completer mean score, tercile distribution, and pass rate on rigorous and validated nationally normed assessment of demonstrated teaching skill used for initial licensure
	Completer Rating of Program	EXIT AND FIRST YEAR COMPLETER SURVEY ON PREPARATION – State- or nationally-developed program completer survey of teaching preparedness and program quality, by cohort, upon program (including alternate route) completion and at end of first year of full-time teaching
III Performance as Classroom Teachers	Impact on K-12 Student Learning	TEACHER ASSESSMENTS BASED ON STUDENT LEARNING – Assessment of program completers or alternate route candidates during their first three years of full-time teaching using valid and rigorous student-learning driven measures, including value-added and other statewide comparative evidence of K-12 student growth overall and in low-income and low-performing schools
	Demonstrated Teaching Skill	ASSESSMENTS OF TEACHING SKILL – Annual assessment based on observations of program completers’ or alternate route candidates’ first three years of full-time classroom teaching, using valid, reliable, and rigorous statewide instruments and protocols
	K-12 Student Perceptions	STUDENT SURVEYS ON TEACHING PRACTICE – K-12 student surveys about completers’ or alternate route candidates’ teaching practice during first three years of full-time teaching, using valid and reliable statewide instruments
IV Contribution to State Needs	Entry and Persistence in Teaching	TEACHING EMPLOYMENT AND PERSISTENCE – (1) Percent of completers or alternate route candidates, by cohort and gender – race-ethnicity, employed and persisting in teaching years 1-5 after program completion or initial alternate route placement, in-state and out-of-state – (2) Percent of completers attaining a second stage teaching license in states with multi-tiered licensure
	Placement/Persistence in High-Needs Subjects/Schools	HIGH-NEED EMPLOYMENT AND PERSISTENCE – Number & percent of completers or alternate route candidates, by cohort, employed and persisting in teaching in low-performing, low-income, or remote rural schools or in high need subjects years 1-5 after program completion or initial alternate route placement, in-state and out-of-state

<http://teacherpreparationanalytics.org/wp-content/uploads/2014/08/Highlights-C-P-Report-Draft-1-29.15.pdf>