

Accreditation Annual Report Data Management

Background

The Professional Services Division (PSD) of the Commission on Teacher Credentialing (CTC) is responsible for accrediting Educator Preparation Programs (EPP). Accreditation ensures that organizations administering EPPs (Program Sponsors) are doing so in accordance with established educational standards and practices. The accreditation process comprises a seven-year cycle of activities during which Program Sponsors submit annual reports of their programs' status and development activities, PSD staff review and evaluate those reports, site visits are conducted by PSD, and accreditation recommendations are rendered.

The reporting and review portions of the accreditation cycle consider such things as the EPP's description, the organizational structure of the Program Sponsor; qualifications of faculty and staff; details of program course work, fieldwork, and clinical practice. Much of the information that was collected during the reporting phases of the cycle was in the form of qualitative narrative. That is, relatively lengthy descriptions of how a program is structured and implemented. These descriptions were reviewed by subject matter experts who are qualified volunteer peer reviewers.

Recently, CTC has undertaken to "Streamline and Strengthen the Accreditation Process". This effort is referred to as the "SSAP Project." SSAP signals a shift of focus for the accreditation process from simply ensuring compliance with established standards to evaluating the effectiveness of those standards by measuring program outcomes. SSAP seeks to expand the collection and analysis of program-related information by standardizing the reporting requirements and leveraging data storage and retrieval technologies and system automation where possible.

CTC's vision for the project includes a restricted public facing user interface through which Program Sponsors may submit data annually, deliver their annual reports and retrieve reports and summaries of their programs' features and accreditation status. The restricted public facing interface may also be used as a means of communicating with sponsor stakeholders over the course of the accreditation cycle. Access to a given Program Sponsor's detailed data and reporting portal will be restricted to authorized staff of the Program Sponsor, and will be controlled by secure authentication. A separate portal accessible to the general public would present aggregated statistics and general information derived from the results of the accreditation process, though not necessarily from data related to work in progress.

In addition to the public facing user interfaces, a separate internal user interface would allow PSD accreditation staff and authorized volunteer reviewers to retrieve and review the reports submitted by Program Sponsors and enter the results of their reviews of the submitted documentation. PSD staff would have full access to all information submitted, and volunteer staff would have access only to the information submitted by the Program Sponsors whose reports they are reviewing.

Project Scope

This phase of the project involves the creation of a system for managing data related to the annual reports required of program sponsors. In addition to those features specific to the annual reporting process, the initial phase will also encompass the creation and configuration of the foundational infrastructure needed to support the comprehensive data management system. This includes core

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components of the underlying database, user authentication, and the basic internal and external presentation layers.

Database

The SSAP project will use Microsoft SQL Server as its underlying database technology. SQL Server is a standard technology at CTC, and is used to house its data warehouse, which is a repository of data derived from numerous disparate sources and structured to facilitate reporting and dashboard presentations. The SSAP system data will be subject to integration within the data warehouse, as well.

User Authentication

User authentication will need to accommodate three types of users: internal CTC users, external program reviewers, and external program sponsor users. Internal users will have access to data from program sponsors according to their roles and responsibilities. For example, some internal users may have access to all data for all program sponsors, while others may have access to all data for some program sponsors, and others may have access to some data for all program sponsors. External reviewers will have access to data related to those program sponsors whom they are evaluating. External program sponsor users will have access only to the details regarding their own organizations. In all cases there may be additional controls on those areas available for reading and writing to the database. We have more than 250 external program sponsors, and we anticipate multiple users from each sponsor.

CTC will manage the creation and maintenance of user data, and the authentication system will provide a self-service means for resetting passwords.

User Interface Design

The technology to be used for developing the user interfaces has not been selected. CTC seeks the advice of the contractors bidding on this phase of the project in selecting the best fitting technology for the user interfaces.

Internal User Interface

The internal user interface may be web or desktop based. Internal CTC users will be able to read the data submitted by program sponsors, but may not edit it. They will also be able to create records related to their evaluations of the sponsors' submissions. The internal user interface must also allow for the configuration of the system and maintenance of data related to users and other administrative functions.

External User Interface

The external user interface will be web-based, and must accommodate the following user scenarios:

Program Sponsors

The user interface for Program Sponsors will allow users to create and update records related to their submissions. In addition to directly entered responses to reporting prompts, the user interface must provide a means for uploading and cataloging prepared document files as components of the reports. For the initial phase of the project, submissions will be related only to annual reporting. Prior to final submission, the data for a given annual report will be accessible for additions and edits, but once submitted, data may not be changed without authorization from CTC. Appropriate safeguards against

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premature submission may be incorporated, such as requiring a management level user to perform the final submission. External program sponsor users may see and manipulate only that data related to their organizations.

Program Reviewers

Program reviewers are external users who participate in the evaluation of submitted reports. Though they may not be involved in the evaluation of the annual reports, the system must be designed to accommodate their eventual inclusion in the user pool. Program reviewers will be granted access to view the details of the program sponsors whose submissions they have been assigned to review. In addition, reviewers need to be able to create records of their responses to sponsor submissions.

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Annual Reporting Data Elements

The following summary of the Annual Reporting data requirements was submitted by PSD:

| What? | Level | Type of Field and Options to Provide | | Comments | |
|---|---|--------------------------------------|--|-------------------------------------|--------------------------------|
| Program Context—Data is submitted initially and reviewed for accuracy each year | | | | | |
| Complete these questions for each pathway & location | 1. Identify all pathways through which the Commission-approved program is offered | P | Check box with 25 word text description | student teaching, intern, residency | |
| | 2. When the program takes place | P | check box | undergraduate, graduate, both | |
| | 3. Identify how the program is delivered | P | Check box | face-to-face, online, hybrid | |
| | 4. Identify the locations or satellites where the program is offered | P | text box | | |
| | 5. Required minimum GPA for admission, if specified | P | number or NA | GPA, NA | |
| | 6. Expected length of program | P | number | months | |
| | 7. How many units required for completion of the program? | P | number | semester or quarter units, also NA | |
| | 8. Does the program require demonstration of Basic Skills for admission? | P | check box | Yes, No | |
| | 9. Does the program require demonstration of subject matter for admission? | P | check box | Yes, No | |
| | 10. Total hours of clinical practice required | P | number | | all programs |
| | 11. Number of fieldwork hours required for interns | P | number | | Intern programs only |
| | 12. Number of independent student teaching hours | P | number | | Student teaching programs only |
| Annual Data Submitted for each Program—would like to look at by pathway (intern, student teaching...) and by location (satellite) submitted after the <i>still to be determined census day</i> | | | | | |
| 13. Total Enrollment in Program, by pathway, by location | P | number | | | |
| 14. Gender, by pathway, by location | P | percentage | female, male, decline to state | | |
| 15. Ethnicity, by pathway, by location | P | percentage | American Indian/Alaska Native; Asian; Black/African American; Native Hawaiian or other Pacific Islander, | | |

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| What? | Level | Type of Field and Options to Provide | | Comments |
|---|-------|--------------------------------------|--|--|
| | | | White; two or more; decline to state | |
| 16. Percentage of full time students, by pathway, by location | P | percentage | | |
| 17. Percentage of part time students, by pathway, by location | P | percentage | | |
| 18. Mean GPA of enrolled applicants, by pathway, by location | P | percentage | | |
| 19. Percentage of candidates who have satisfied basic skills at admission by pathway, by location | P | percentage | | |
| 20. Percentage of candidates who have satisfied subject matter at admission by pathway, by location | P | percentage | | |
| 21. Percentage of applicants admitted by pathway, by location | P | percentage | | |
| 22. Average ratio of program supervisors to candidates by pathway, by location | P | number | | preliminary programs only |
| 23. Average ratio of mentors/coaches to candidates by pathway, by location | P | number | | second tier programs only |
| 24. Percentage of candidates who are in first year of teaching/leading | P | percentage | | second tier programs only |
| 25. % of candidates who completed program on time by pathway, by location | P | percentage | | |
| 26. % of candidates who completed program within one year of expected length of time by pathway, by location | P | percentage | | |
| 27. % of candidates who completed program more than one year beyond expected length of time by pathway, by location | P | percentage | | |
| 28. Percent of candidates who leave the program-voluntarily or counseled out, by pathway, by location | P | percentage | separate entry for voluntary and counseled out | |
| 29. Percentage of first time pass rate for RICA by pathway, by location | C | number | | Preliminary MS and Ed Specialists |
| 30. First time pass rates for any other required standardized test required of credential by pathway, by location | C | number | | e.g. Praxis for SLPs. <i>challenge here is that CTC does not get this info</i> |
| 31. Completer Survey | CTC | | mean | statewide and program comparison (mean and std. dev) across the 6 CSTP/CPSEL |
| 32. Master Teacher Survey | CTC | | | |
| 33. Employer Survey | CTC | | | |

Still Working on Authority to do This Work

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| What? | Level | Type of Field and Options to Provide | | Comments |
|--|-------|--------------------------------------|--|--|
| 34. Percentage of graduates who are employed as educators? by pathway, by location | CTC | number | | calculated by using CASE and PAIF data |
| 35. In what context graduates are teaching (i.e. urban, rural, high needs schools) by pathway, by location | CTC | number | | calculated by using CASE and PAIF data |
| 36. Retention rates in the profession by pathway, by location | CTC | number | | calculated by using CASE and PAIF data |
| 37. Identify the top districts that hire completers from the program by pathway, by location | CTC | list of districts | | calculated by using CASE and PAIF data |

Future Data Work

| What? | Data | Type of Field | Comments |
|---|------|--|---|
| a. Cost of program | P | number | |
| b. % students on financial aid | I | number | |
| c. Measure of indebtedness of completers | I | ??? | |
| d. When candidate enrolls in program | P | date | |
| e. Performance Assessment Data at TPE or CAPE level | C | number, at each of the 6 CSTP or the 6 CPSEL | preliminary teaching and administrative services only |
| f. Percentage of candidates who pass the performance assessment on first attempt by pathway | C | number | preliminary teaching and administrative services only |
| g. | | | |
| h. | | | |

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The guidelines regarding data types and presentation options detailed in the tables above are not necessarily how the various data points will be presented. The database structure must accommodate the required data points while adhering to principles of a sound, normalized design. The data model will be developed in conjunction with CTC business and technical staff to ensure that the design accurately reflects the nature of the entities involved.

Comments Regarding the Data Elements

The data requirements are complicated by the need to track statistics for each sponsor by “Level”, “Location”, “Delivery Model”, and “Pathway”. Level refers to undergrad vs graduate level programs. Locations are physical sites operated by the sponsor, such as satellite campuses. Delivery Model refers to the way course content is delivered; for example, online versus face to face. Pathways relate to clinical practice; for example, internship vs student teaching. A given sponsor may offer a given program using different combinations of the four variables, all of which must be reported separately. In addition, the system must accommodate the introduction of new levels, locations, delivery models, and pathways over time – ideally with the ability to maintain a history of when and how things have changed.

System Outputs

The driving force behind the standardization of reporting inputs is the desire to produce meaningful outputs. Internally, at a minimum CTC requires the ability to aggregate reported statistics by and between program sponsors, along with comparisons to statewide norms. We also require the ability to perform longitudinal analyses showing trends over time. Externally, each program sponsor should be able to view summaries of their own statistics along with comparisons to population-wide norms, including trends over time. However, for a given sponsor there should be no visibility to the individual results of any other sponsor’s report inputs.

In addition to pre-planned reporting, the system is required to provide tools allowing users to export data in a format that allows customized aggregation and analyses. The export tools available to a sponsor will limit visibility to data for the sponsor only.

Stakeholder Communication

The system will serve as a platform for communication between CTC and program sponsors. At minimum the system will provide for one-way communication of information from CTC to the program sponsors. Such communication might include updates to sponsors regarding deadlines and other scheduled events and activities, progress reminders, and warnings concerning the quality of data or variances from previous reports.

Database Design Strategy

The initial Annual Reporting phase of the SSAP project encompasses a small subset of the total functionality envisioned for the Accreditation System. Although some of the future functionality may be less than clearly articulated, the design of the database for this phase must be scalable so that additional functionality may be incorporated in later phases with minimal impact to the existing system. The following entities are central to the envisioned system:

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System Users

The roles and responsibilities of system users will be the foundation of the application user interface. In addition, contact details for those users external to CTC must be captured as described in the next section.

Accreditation Cycle Cohorts/Scheduling

Program sponsors are assigned to one of seven cohorts, with the members of a given cohort subject to the same phase of the seven-year accreditation cycle at the same time. The system will provide for the management of cohorts and the scheduling of accreditation cycle activities.

Program Sponsors

Program sponsors and their personnel form the central elements of the underlying database. Personnel will include the sponsors' authorized users and points of contact, with potentially multiple defined roles and modes of contact (phone, mail, email, etc.) for each person.

Approved Programs

All reporting by program sponsors is related to specific approved programs, and each sponsor will have one or more programs. These programs and their attributes must be represented in the database along with a means of capturing the details of changes to their composition over time. A program's collection of attributes may vary depending on the type of program.

Program Reporting

The details required for program reporting vary depending on the nature of the program. Some standards apply to all programs, while others differ according to the program. Tables for recording the report details must accommodate this variability.

Evaluative Responses

Our review of sponsor reporting will result in responses from staff and volunteer reviewers. The nature of the responses will vary according to the report item. Some responses may be in the form of quantifiable scores, while others may be lengthy narratives. The tables for recording our responses must accommodate this variability in the response data.

Contractor Skills and Experience

- Experience with Microsoft SQL Server and Visual Studio.
- Experience in data modeling and design, including the use of entity relationship diagramming tools, data normalization, and integration with other data systems.
- Experience developing and/or implementing user-level permissions within web-based and desktop UI environments.
- Experience developing a web-based application
- Experience developing and/or implementing user authentication in web-based and desktop environments.
- Experience with developing and/or implementing automated communication tools (email, text, etc.) within a custom application.