Description of Use of Technology to Support the Assessment System

The College of Education serves as the nexus of the Education Unit, and therefore the COE is charged with ensuring the technology is available to support the assessment system design. The design of the system is comprehensive and distributed, in that data sets are collected centrally by the unit, within departmental and program faculty contexts, and outside the unit as well. It is the responsibility of the unit, once a data set has been identified as important to be gathered, to see to the storage and management of that set. As such, the College of Education Master Database System contains a wide range of data and information items used for candidate, program and unit assessment.

The college was fortunate to have a database system already in use at the time the assessment system was designed. The assessment system design rests on the premise that data maintained centrally by the unit will have multiple uses, depending on the reasons for which they are being inspected, reviewed, and analyzed. The current database system fits the needs of the assessment system as it provides access to multiple users, and has the capability to run relational queries and reports from multiple data sets. The functionality of the database is supported by the college Informational Technology Department staff and managed by the college Data Analyst.

A detailed description of the design, structure, capability, and how the database is used to support assessment was provided by the COE Data Analyst and is presented in the following section.

College of Education Master Database System

System Design

The CSUF College of Education Master Database is a relational database management system which stores faculty, staff, candidate and course information in linked data tables. These tables are housed in a SQL 2000 server which is accessed through Microsoft ACCESS software.

Relational Database

Each table contains records which are the horizontal rows in the table. Each record contains data fields which are the vertical columns of the table. Running a query against the database creates a “view” which is a virtual table made up of a subset of the actual data tables.

Referential integrity of the data is enforced by a combination of primary and foreign keys and insures consistency between joined tables. A record in one table cannot be deleted if that record is tied to another table.

The information system is a client-server network which allows multiple users to simultaneously access the system. Client-server architecture allows sophisticated features such as recovery, backup, access control and also reduces the risk of data file corruption since only the server manipulates the database directly. The data in the system is backed up every 4 hours and the entire database (tables, queries, forms and reports) is backed up weekly.

System Structure
The Master Database contains over 400 megabytes of information with credential records dating back to 1973. The data tables capture information on both credential and masters candidates and contain attributes such as:

- Candidate application, prerequisite information and test scores
- Candidate course enrollment and correspondence
- Candidate contact data and demographics
- Candidate fieldwork (student teaching/internships)
- Candidate credential information
- Faculty contact information and demographics
- Faculty semester course and unit loads
- Miscellaneous data tables:
  - School districts/schools
  - Credential objective codes
  - Certificate of Clearance
  - Courses by term

The main table relationships and linkages are shown on the following page.

**Database Log On**

Access to the Master Database is set by the Database Administrator through a user id/password logon combination. Access level is determined by the user’s business needs. A user who has the highest access level will see this screen upon log on:
A user with a lower access level will only see his/her department screens.

Data Input

Data is input to the system by the College of Education faculty and staff. Each department enters candidate data via its own department screens. Pull-down windows for some data fields provide input standardization and input masks and data validation checks are in place for other data fields to insure data accuracy. Required fields for new candidate input includes campus wide id number (CWID) and social security number. For security reasons, the social security numbers are encrypted and stored in a hidden portion of the server. The CWID serves as the primary key in many data tables. The application/enrollment screen in the Multiple Subject credential area is displayed below:
Candidate data is retrieved by entering the proper Campus Wide ID (CWID) or by searching for the candidate by name. Screen forms are displayed as tabs and include:

- Application data
- Personal and contact information
- Prerequisites satisfied and entrance exam results
- Correspondence in chronological order
- Candidate history
- Credential information – application and recommendation

Following is a typical correspondence tab displaying candidate documentation and file movement. The database system automatically time and date stamps each entry which provides a useful chronology of information and actions.
The candidate history tab from the Special Education credential program component is shown here:
New input and updates to existing data are processed in real-time so the information is available dynamically for queries and reports.

**Graduate Program**

The Graduate Program component of the database contains information on candidates enrolled in a master’s program. The data fields are similar to those in the credential portion of the database but also include data fields that are specific to master’s candidates such as:

- Degree objective
- Study plan
- GRE exam scores
- Graduate committee chair and members
- Human subject review and approval
- Project/thesis information

An example study plan tab is shown here:
Data Output

Data is retrieved from the system via queries and reports. Nearly 100 reports are currently available for users to run. Many reports assist with the tracking of candidates through the curriculum and their student teaching. Here is a screen showing some of the reports that are available to run in the multiple subject credential program:
Reports can be printed or downloaded to EXCEL spreadsheets for further analysis. Here is a sample page from a credentials report:
Ad hoc query privileges are granted to some college members to create and run specialized queries and reports that meet the operational and research needs of the faculty and staff. These are accomplished by building ACCESS queries in a copy of the Master Database so that performance in the production version is not impacted for other users:

Ad hoc queries are often run, downloaded to an EXCEL spreadsheet and then emailed to the faculty or staff member who requested the data.

Other data output include mailing labels, various letters to candidates and agencies and faculty door cards with office hours posted.

Data Evaluation

The College of Education Master Database is the key repository for data regarding teacher credential candidates at Cal State University, Fullerton. The information in the Master Database is continually growing and being refined. Database information is utilized for statistical purposes in research papers and grant writing and to validate the data in the campus SIS+ Student Information System. The teacher credential candidate information in the SIS+ system is the official university data reported to the CSU Chancellor’s Office.

Information from the Master Database is periodically provided to the campus departments such as the Center for Careers in Teaching, University Advancement and Extended Education. Data from the system is also used to compile reports required by California Commission on Teacher Credentialing, the National Council for Accreditation of Teacher Education (NCATE) and the American Association of Colleges for Teacher Education (AACTE).