dEams

Better education through better data...

EXAMINATION PROCESSING

Set up & Configuration → Registration → Data Collection & Processing → Promotion/ Matriculation → Data Aggregation & Analysis → Reporting & Modeling
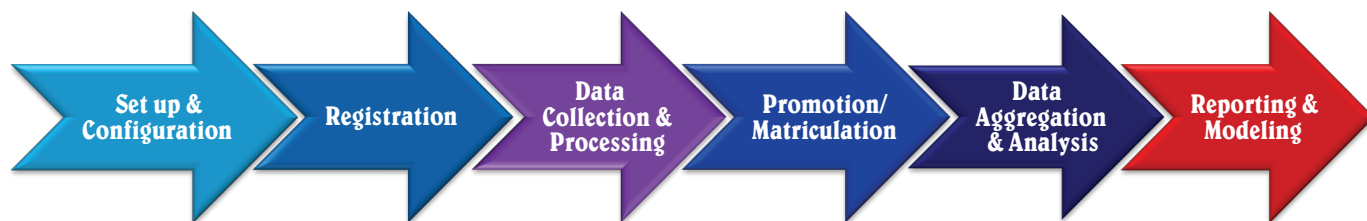
The education management system allows for the definition of a sitting in terms of various parameters and options which the user defines. These parameters and options establish the structure and rule framework within which processing will take place. Processing is divided broadly into six phases:

- Set up and Configuration
- Registration
- Data Collection & Processing
- Promotion/ Matriculation
- Data Aggregation & Analysis
- Reporting and Modeling using DPIS

SET UP AND CONFIGURATION

This module defines the structure and rules for all examinations and sittings to be processed using the system. The system is informed of options the user requires for the processing phases.

REGISTRATION

The Registration module provides the facilities to build a validated candidate list that includes candidate demographic data as well as subject registration and promotion data, if applicable.

Provision is made for data capture through either direct entry by keyboard using a local application, via the Internet, importation of an electronic data file, capture from a machine-readable form or capture from a human-readable form via bulk data entry. Machine-readable registration cards may be used utilising Optical Mark Recognition (OMR) or Intelligent Character Recognition (ICR) technology.

In addition to standard informational listings, a variety of exception reports are provided to assist in validating the data using defined rules.

Summary of Features:

- Universal or Periodic Registration
- Choices of data capture methods (any combination)
  Handwritten card (free-form), human-readable
  Handwritten card (formatted), machine-readable
  Direct entry via PC application or Internet
- Client defined data validation checks
- Variety of reports and statistics
- Testing materials
  Invigilator's Control List
  Timetable
  Objective Answer Sheets
  Subjective Answer Booklets or Score Sheets
  Candidate Labels
  User defined interest groups to categorize candidates

DATA COLLECTION & PROCESSING

The Data Collection and Processing module provides for the entry or importation of item dictionaries, the entry or importation of response data, the validation of the response data, validation of results, exportation of result data and the production of various information and exception reports.

Results are validated using various methods including correlation of scores. The capability to export response data also allows for analysis of item performance and independent statistical verification, if required.

The system is capable of producing count of correct responses, raw, percent and standard scores as well as percentiles and stanines. In addition up to five sub-scores can be recorded allowing the assessment of mastery of specific curriculum or instructional objectives. This broad structure facilitates the use of norm-based or criterion-based testing, or both, as required.

This module also facilitates generating scores based on regression analysis. This is applicable in cases in which it is statistically proper to have a score generated to allow candidates to be realistically ranked. Candidates can be ranked based on any of these scores across the entire population, or within user-selected interest groups (for example regions or parish).

Summary of Features:
- Client defined subjects to a maximum of fifty per sitting
- Any number and combination of objective, subjective and SBA components
- Client specified grade scheme
- Client specified weighting of each question, paper and subject
- Computes and collates overall, subject and sub-scores (cognitive, content, intersects)
- Data available as a file in a choice of data forms

PROMOTION/ MATRICULATION
Promotion of candidates can be effected automatically by candidate preference, performance, geographically with or without the use of Geographic Information System (GIS) or any combination of these. If necessary, promotion can also be effected manually by qualified personnel.

Various informational and exception reports are produced before and after the promotion process. It is possible to carry out geographic analysis for planning and other purposes utilising the advantages of a GIS system. Capacity and facility planning particularly lend themselves to this technology.

Promotion results can be delivered to schools and candidates via paper reports, the internet and/or by telephone using an Interactive Voice Response (IVR) system.

Summary of Features:
- Client defined promotion groups
- Choice of promotion methods (singly or in combination)
    - Candidate Preference
    - Performance
    - Client defined interest groups
    - Geographic with or without GIS
- Variety of reports and statistics

DATA AGGREGATION & ANALYSIS
DEAMS allows a great deal of flexibility in the production of statistics and the analysis of data. The system produces basic descriptive statistics:
- Means
- Minimum
- Maximum
- Variance

These are available in standard reports and are produced for all primary system objects:
- Sitting
- Institution
- Subject
- Interest Group

Statistics needs beyond the scope of these may be produced by any statistical application which the user chooses. Data exported by DEAMS may be used by any popular package such as SPSS, Stat Graph or S-Plus (for GIS based analysis). This allows the flexibility of ad hoc analysis as and when required. In addition to the standard reports produced, the user can produce ad hoc reports by using any popular report generator such as Crystal Reports or Optimal Report Generator.

Data Mining is the use of computer software to examine large volumes of data and is carried out using a usually large data store referred to as a data warehouse. The structure in which DEAMS data is stored lends itself to relatively effortless construction of a data warehouse. This possibility broadens the horizons of the assessors, as it is possible to creatively analyse data across the entire data store to better inform the assessment and planning processes.

Summary of Features:
- Standard descriptive statistics for client defined interest groups
- Comparison with previous year
- Performance reports (may also be client designed)
- Performance profiles (candidate as well as client defined interest groups)
- Basic charts and graphs
- Data available as files for use in other statistical packages for further research and analysis
- Provision for analysis using GIS system
- Teacher support profile reports with recommendation of remedial action for students performing below client specified threshold

REPORTING AND MODELING
The DEAMS suite includes an application, DPIS that allows schools to collate and utilise the results of their candidates in national assessment examinations. It is particularly useful for promotion examinations in which schools are receiving candidates for which they have no detailed assessment data. By placing this data in the hands of these educators they are equipped to better plan the use of their resources and identify groups of students who might have specific needs. This should, to a great degree, reduce the need for schools to spend much of the early period with new students in an in-house assessment process, so as to determine the abilities and needs of these students.

DPIS also allows for the integration of school managed and implemented assessment into the process with facilities to collect data from these sittings to be added to the pool of assessment data generated by the national assessment process.

The process empowers delivery providers of the process by supplying more detailed information to schools which will lead to a better quality of education over time.

Summary of Features:
- Variety of reports for different stakeholders
- Electronic distribution of reports using DPIS