ConstructMap Calibration Exercise

In this exercise you will practice importing project data, calibrating the instrument from that data, and producing IRT and traditional psychometric reports. We will use sample data included with ConstructMap for this purpose. Once you practice using the sample data, you should try the same steps with your project data.

IMPORT THE PROJECT

If you already have your own data saved in ConstructMap, export it first:

1. Select **File → Save Project As...**.

2. Open the `ConstructMap46 beta/projects` folder.

3. Type the name of your project in the "Folder name" field (PCs) or "file" field (Macs).

4. Click the Save Project button to save your data
You will be able to import your project data after the exercise is completed by following steps 5 - 10 with your data.

After exporting your project, or if you do not have a project created yet:

5. Decide which demonstration project most closely parallels the instrument for your project:

    a. **Ex 1 – Dichotomous** is a unidimensional dichotomous instrument.
    b. **Ex 2 – Partial Credit** is a unidimensional partial credit instrument (items have different maximum scores).
    c. **Ex 3 – Rating Scale** is a unidimensional rating scale instrument (items have the same maximum scores).
    d. **Ex 4 – Dichotomous MD** is a two-dimensional dichotomous instrument. Use this example if you have any kind of multidimensional instrument. (You may want to try two demonstration projects to both see how multidimensional data is reported and to see how your item type is reported if it is not dichotomous).

6. Select **File → New Project**. This will clear the data for your previous project from the screen display.

7. Select **File → Open → Standard (2 Files).**

8. Browse to the appropriate folder within ConstructMap's projects folder. Click on the `items.txt` file and then click the Open button.

9. You will then be asked to select the student data. Click on the `students.txt` file and then click the Open button.

10. Select **File → Save** to make the currently displayed project available the next time you start ConstructMap.

CALIBRATE THE INSTRUMENT

This is a two-step process: First, you will set the calibration options, and then you will calibrate the instrument.

1. Select **Estimation Tasks → Calibration Options**. A dialog window will be displayed. Enter values appropriate for your instrument and click on the OK button to continue.

   See the *ConstructMap Lite v4.2 Users Guide* pages 55 to 57 for a complete description of the options. The *Users Guide* can be downloaded from http://bearcenter.berkeley.edu/GradeMap/docs/UserGuideLite_v4_2.pdf

2. Select Estimation Tasks – Compute Item Parameters. A dialog window will be displayed asking if you want to reset the item parameters. Select Yes to ensure that any preliminary values are cleared, then click on the OK button to continue.

   An "EM Update" window will be displayed showing progress of the estimation procedure. See the *ConstructMap Lite v4.2 Users Guide* pages 57 to 59 for a complete description of the how ConstructMap reports progress on the estimation.

   When estimation is complete, a dialog window will be displayed asking if you would like to accept the parameters. Click Yes for ConstructMap to store the values for further processing.

3. Select **File → Save** to store the calibrated parameters as part of the current project.

PRODUCE REPORTS

A variety of psychometric reports can be generated by ConstructMap. Try each report to ensure that you understand what is being reported and how that information can be used to validate the quality of your instrument. See the *ConstructMap Lite v4.2 Users Guide* pages 22 to 28 and 62 to 83 for complete descriptions of the psychometric reports generated by ConstructMap and for descriptions of the report options you may define.

The following are the most important reports:

1. Select **Reports →Item Reports – Wright Map**.
2. Select **Reports → Item Reports – Graphical Wright Map**.
3. Select **Reports → Item Reports – Item Estimates & Fit Graph**.

4. Select **Reports** → **Item Reports – Classical Item Statistics**.
5. Select **Reports** → **Item Reports – Test Information Curve**.
6. Select **Reports** → **Group Reports – Ability Estimates**.

TEST YOUR INSTRUMENT

You should be ready now to test your instrument with the data you have gathered.

1. If you have not already done so, create a single text file for the simple import, or create two text files for the standard import. Store the file(s) in a project folder you created within ConstructMap's projects folder.
2. Import your data following steps 5 – 10 on pages 1-2 of this exercise.
3. Calibrate your instrument.
4. Analyze your instrument using the reports described above.