Entering Data into ConstructMap

by Sevan Tutunciyan and Richard Vorp
Updated 10/26/12

This exercise walks you through a number of ConstructMap data management features. By the end of the exercise, you will be ready to import your own response data into ConstructMap.

BEFORE YOU START

- Have an Excel or plain text file available that contains your student response data (any format is fine for now).

- If you do not have your own data yet, use the sample demo file (`responses.txt`). You can unzip the `mydata.zip` file to access the `responses.txt` file.

   > For demonstration purposes, the sample data in `responses.txt` only contains two items named i1 and i2, which will be associated with one construct named v1.

- Copy the file into a folder for later use.

   > We suggest that you create a folder named `mydata` under the ConstructMap46 beta/projects folder (which is in `C:\Program Files` on Windows machines and in the `Applications` folder on Macintosh machines).
   >
   > Copy your response data file or the `responses.txt` sample file to this new folder.
   >
   > Enter a Construct/Variable

- Go to **System → Add Variable**.

- Enter a short name and change the max score to one less than the number of levels your construct has. For the example dataset, you can leave the max score at 1.

- Press enter or OK.

ENTER ONE OR MORE ITEM SETS (E.G. ALTERNATE FORMS, TEST-RETEST, SPLIT HALVES)

This step is not necessary if you model has a single instrument.

- Go to **System → Add Item Set**.

- Set the Parent to "base" (use the Browse button if necessary).

- Enter the Name of the Item Set (e.g. Form A, Test, Half 1).

- Leave the Target Logit text field blank.

- Press Enter or OK.

ENTER ITEMS ONE AT A TIME

- Go to **System → Add Item**.

- Select the variable that this item belongs to.

- Enter a brief item name in the short name field (e.g. i1 or i2).

- Change the max score to one less than the number of levels (score categories) this item has. For the example dataset `responses.txt`, set the i1 max score to 2 and leave the i2 max score at 1.

- Press enter or OK.

- Repeat those steps for every item you want to enter into ConstructMap (for sample demo, do it twice, for i1 and i2).

DEFINING DEMOGRAPHICS (OPTIONAL)

- If you want to be able to analyze certain groups of your respondent population, then you'll need to define demographic fields.

> For example, to analyze only female students, you need a demographic field for gender.

- Select **System → Add Demographic**.

- Enter the name of the demographic field (i.e., gender) into the name field.

- Select discrete or continuous for the demographic type.

> Discrete is for categorical demographics such as gender, class, etc.
>
> Continuous is for numerical demographics such as height, math ability, SAT score, etc.

- For discrete demographics:

> You can choose to add predefined categories (such as male, female) or leave it empty so that you can enter anything you want in the spreadsheet view.
>
> If you entered predefined categories, you can check the box "New Categories may be added later" so a user can specify additional categories at random.

- Adding a category:

> Type the name of a category for this field into Category field, and then click the Add Category button.

- Specifying a default value:

> The default value specifies the initial value given to all cases. For example, if you enter male, all students that you create will have a gender of male. You can modify these values as needed later.

ENTERING A SAMPLE STUDENT

- Select **Edit → Add Student**.

- Enter "1" as the number of students.

- Fill in the name cell with the student name.

- Fill in scores for ALL the items under each item column.

- Hit "Return" or "Enter" to exit edit mode.

WHY ENTER ONE SAMPLE STUDENT?

- Shows you how to enter one student at a time.

- Enables you to export your student data as a template/sample which you can populate using Excel and your mass quantity of student/response data.

EXPORTING YOUR MODEL SPECIFICATION AND STUDENT RESPONSE DATA

- Good for saving your data "permanently."

- Also good for creating a "template" for your response data file.

- Select **File → Save Project As…**

- Choose the location (`ConstructMap46 beta/projects/mydata/`) to which the `items.txt` file will be saved.

- Click Save Project.

OPENING THE STUDENTS.TXT FILE WITH EXCEL

In the steps that follow you will modify the exported students.txt file to contain your response data.

- Open Excel.

- Select **File → Open** then choose/locate the `students.txt` file and click Open. If you cannot see the file, make sure "All Files" is selected as the file type.

- The text Import Wizard will appear.

> Ensure that **delimited** radio button is checked.

- Click Finish.

MODIFY THE RECODING SECTION IN STUDENTS.TXT (AS NEEDED)

- Important ConstructMap fact:

> All scores/categories need to be between 0 and the maximum score for an item.

- Recoding entries are located in the rows between <ANSWERKEY> and </ANSWERKEY>

▪ First column

> Represents student responses (i.e., A+, 3, Good, 10 etc)

▪ Subsequent non-empty columns

> How the response from the first column should be scored for the item specified in the header rows in this column.

▪ How to add a new response recoding entry:

> Add another row in between <ANSWERKEY> and </ANSWERKEY>
>
> Fill in the response for which you want to create recoding (i.e., A+) in the first column
>
> Fill in the score this response should be translated to for each item in which the response occurs. In other words, you are describing what this response means for all the items (i.e., A+ could be the max score for each item).

▪ How to modify an existing response recoding entry:

> Why would you modify 0,1,2,3,…?
>
> Because your data has scores 1, 2, 3, 4, OR
>
> Because your data has no 3s OR
>
> Because you consider 0 as NO RESPONSE
>
> To modify, edit the cell values for each respective item to what each response should be translated to (i.e., translate 4 to 3, if you don't have any 3s and you want to collapse the two levels into one).

▪ How to represent missing data:

> You can recode a response as missing (no score) by translating it to "." (No quotes).

▪ Another important ConstructMap Recoding Fact:

> Any responses not specified in between <ANSWERKEY> and </ANSWERKEY> is considered as missing data.

HOW TO MOVE YOUR STUDENT RESPONSE DATA FROM THE SPREADSHEET APPLICATION TO CONSTRUCTMAP

In this step you will merge your data with the exported `students.txt` file.

- Organize your student response data into the following pattern:

  > One student per row.
  >
  > Place student demographics in the first columns (i.e., all fields except the response data), in the same order as they appear in the `students.txt` file. (Examine the header in the students.txt file to determine the proper order.)
  >
  > Place item responses in the subsequent columns, in the same order as they appear in the `students.txt` file.
  >
  > Save your modified file under a new name (e.g., `my_new_responses.txt`).

- Remove the sample student from `students.txt`:

  > Right click on the sample student row header, and then left click on Delete.

- Paste your student response data into the `students.txt` file:

  > Verify that your data corresponds to correct columns specified by header row.
  >
  > Copy the cells from your response data (i.e., `my_new_responses.txt`).
  >
  > Paste into the rows beneath the </ANSWERKEY> row.

- Save students.txt

  > **Select File → Save As**
  >
  > Ensure the save type is Text (tab delimited) (*.txt)
  >
  > Click Save

IMPORT YOUR DATA INTO CONSTRUCTMAP

- Select **File → New Project**, say yes to the pop-up window.

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

- Choose the `items.txt` file that you saved earlier.

- After this executes successfully, choose the students.txt file that you saved above.

VIEW ALL DEMOGRAPHIC FIELDS

- Select **View → Select Demographic Columns to Display**.

- Check the demographics you wish to display.

YOUR DATA IS READY FOR CALIBRATION

- Note: This sample data set that we entered into ConstructMap is for the demonstration of data entry. For analysis purposes, we recommend one of the demos that come with ConstructMap software, such as Ex1, Ex2, Ex3 or Ex4.