# 10 steps to entering, reversing and analysing AEQ data
SPSS version 19

1. This guide explains how to enter, reverse score and analyse AEQ data. Once you have mastered that you may want to enter audit and AEQ data together. The website contains both an AEQ template and an Audit & AEQ template combined, which you can download from www.testa.ac.uk>resources>researchtoolkit

2. Variable view tab (bottom left) shows you the data set up; data view tab (bottom left) is where you input the data. You can adjust and change categories through the variable view tab by clicking on the tabs.

3. Make sure to number your hard copy AEQs so that you can retrace and check your steps if you make a mistake. Synchronise row numbers on data view with hard copy numbers. Sounds obvious - but we learnt the hard way!

4. To input nominal data: university, course type, level and course, click onto variable view, read along from column 1, and the relevant row across to the column called Values. Left click on the relevant cell which will show a little blue box. Left click on the blue box and you'll get a menu which allows you to add a numeric value to denote the university, course etc or to amend as necessary. Once you have established the numeric values for the first four rows, make a note of these for the next phase of inputting.

5. Go to data view tab. Number your first AEQ 1, and then input number data across Row 1 using your notes to help to number the first four cells, and then input from the data sheet where 1= strongly disagree; 2 = disagree; 3= neutral; 4= agree; 5 = strongly agree. Input all data row by row, continuing through all the AEQ sheets. The headings in the top row of data view help you to check which question on the AEQ you are referring to.

6. Reversing scores: Questions 3, 5, 10, 11, 12, 14, 15, 16, 18 are all negative statements which need to be reversed. To reverse scores go to top navigation bar and click on TRANSFORM> RECODE INTO SAME VARIABLES> This window will appear:
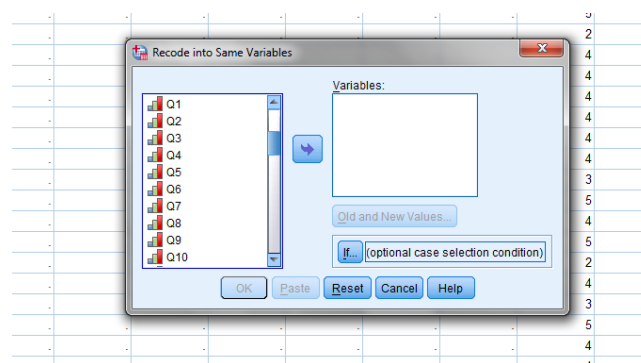
On the left hand side you will see the question numbers> control click on 3, 5, 10, 11, 12, 14, 15, 16, 18 and then press the ARROW between the two windows. These questions will all

move across into the right hand box. Double check that you have moved the correct questions across. Then click on OLD AND NEW VARIABLES. A new window will appear:
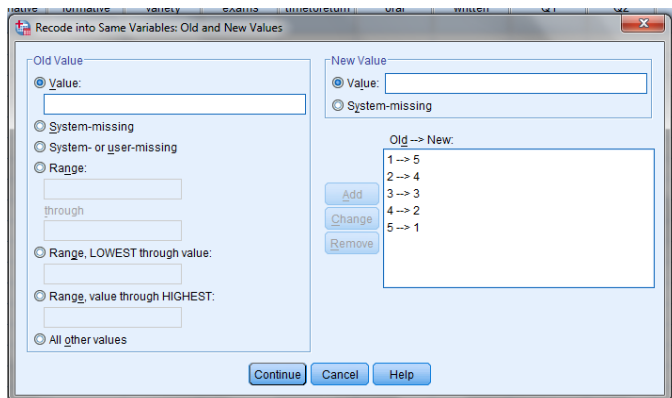

In OLD VALUE input Value 1, NEW VALUE, Value 5 and then ADD. Reverse scores so that you have 1 – 5; 2 – 4; 3 – 3; 4 - 2; 5 – 1 in the ADD box. PRESS CONTINUE and OK an output sheet will appear and the data in the columns for the negative scores will be reversed. VOILA. You can check before and after to see that it has happened.

Here is a youtube clip to show how to do it, although I personally would ignore the renaming into a different variable unless you are intending to add data at a later stage. I click on CONTINUE and OK rather than PASTE.
https://www.youtube.com/watch?v=lrI_2N3LlQM

7. Once you have a full data sheet and you have reversed the scores, you are ready to calculate MEANS and STANDARD DEVIATIONS. Here is how to do that:

Go to TRANSFORM>COMPUTE VARIABLE: This window will appear.
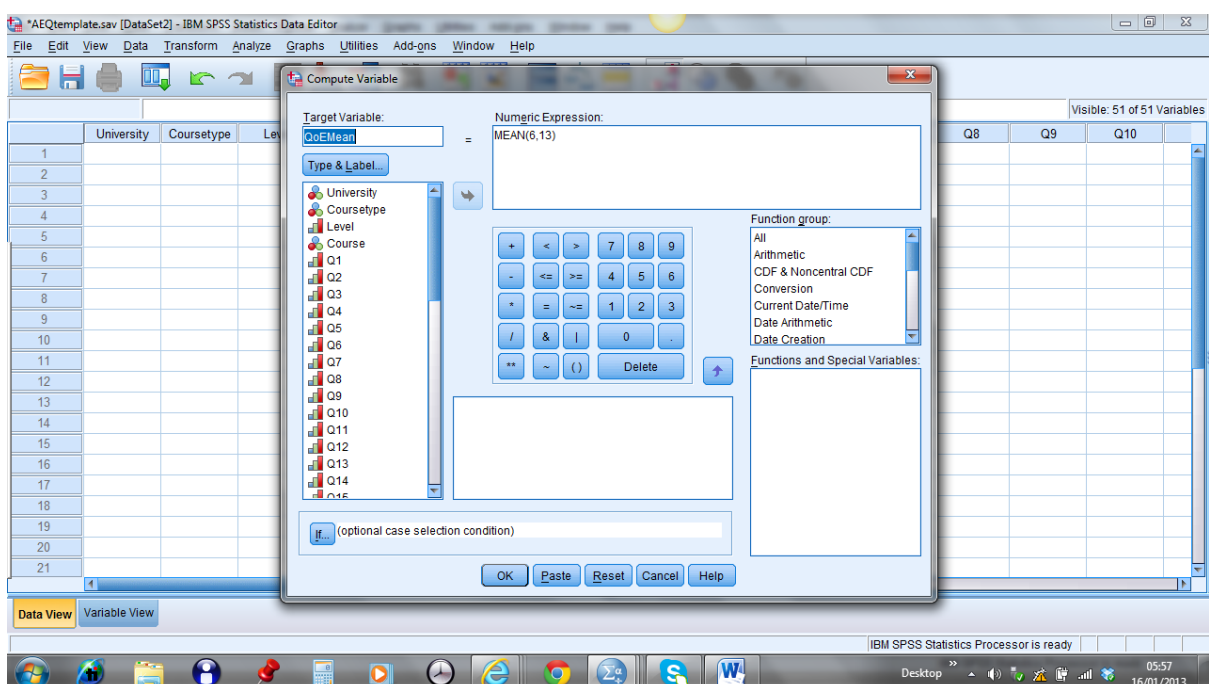
Enter the exact word and case of the label of the TARGET VARIABLE – you can check by scrolling down the box type and label, or by looking across the top navigation bar on data view – no spaces in any of the labels which have a pattern eg. QOEmean; QOEsd; COSmean; COSsd etc. Once you have put in one target variable, in this case QOEmean, move across to the Numeric Expression box. You now need to refer to the scales on the back page of the AEQ to find out which items refer to each scale (but here's my crib sheet):

QOE = 6, 13; COS = 4, 5, 11, 17; QQF = 3, 15, 16; UOF = 1, 2, 8; AA = 10, 14, 18; CGS = 7, 9, 12; SA = 19, 23, 24; DA = 20, 21, 22; EX = 25, 26, 27; OS = 28

In the Numeric Expression window, type the word MEAN, open bracket and click on Q6 and Q13 and arrow into the bracket, close bracket. Click OK, and a new window will ask 'Change Existing Variable? Click OK. Then an output sheet updates and you can check your QOEmean now has numbers in it! Carry on by alternating QOEsd in the target window, and SD(Q6,Q13) in the Numeric Expression window, and so on through each scale. When you have completed computing all the means and standard deviations, you now have the means for each scale by row – in other words you have a student by student picture. The next step is to get the whole group's mean…

8. To get the group MEAN and SD, go to ANALYZE on the top navigation bar, and choose DESCRIPTIVE STATISTICS>DECRIPTIVES from the drop down menus. Then arrow across all the mean labels by scrolling down the left box. It should look like this:
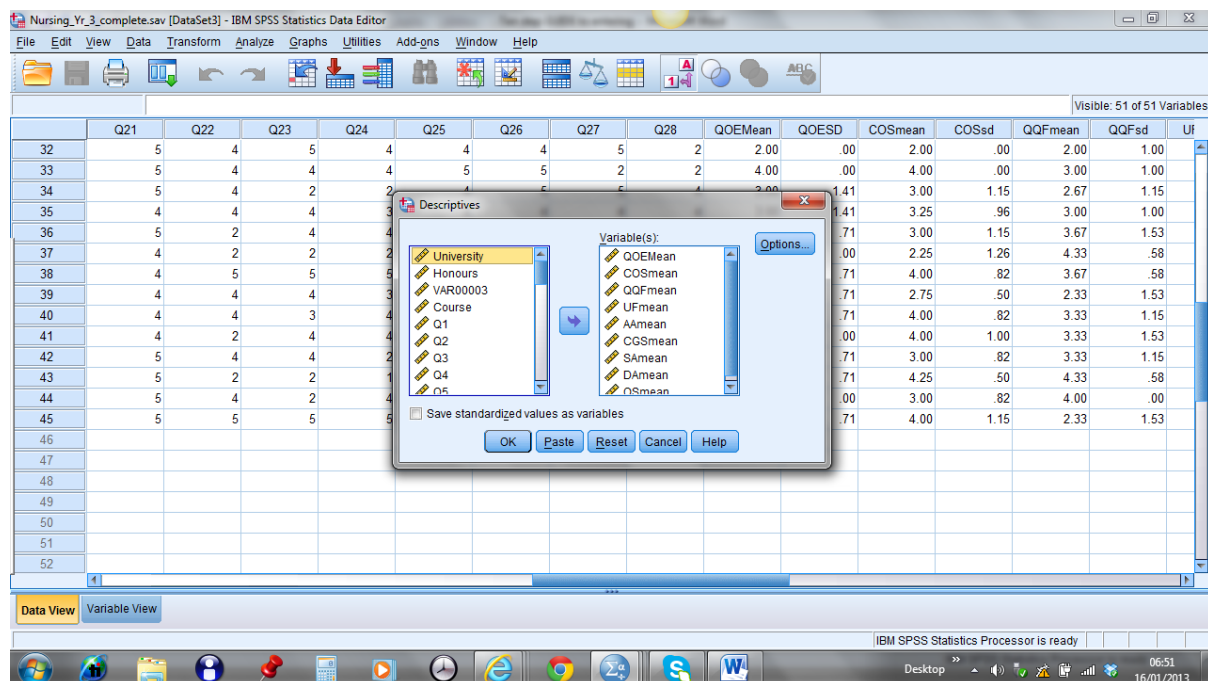

Press OK and this box will be processed in your output box (scroll down to find it). It shows the N=number of returns; the minimum and maximum scores (the range); and the mean and standard deviation:

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
QOEMean	45	2.00	5.00	3.9111	.77817
COSmean	45	1.75	5.00	3.3407	.76867
QQFmean	45	2.00	5.00	3.3852	.87316
UFmean	45	1.67	5.00	3.6815	.76196
AAmean	45	1.67	4.67	3.3815	.77575
CGSmean	45	1.00	4.67	3.1333	1.00101
SAmean	45	1.67	5.00	3.7185	.61116
DAmean	45	2.67	4.67	3.9630	.49860
OSmean	45	2.00	5.00	3.6444	.90843
Valid N (listwise)	45				

9. The final thing you will want to do is to see if there are any significant correlations between scores. To do this, click ANALYSE>CORRELATE>BI-VARIATE, and a window will appear which gives you the opportunity to move MEANS across – tick Spearman because the data better fits a Spearman's test, two-tailed and flag significant correlations - see this screen grab:
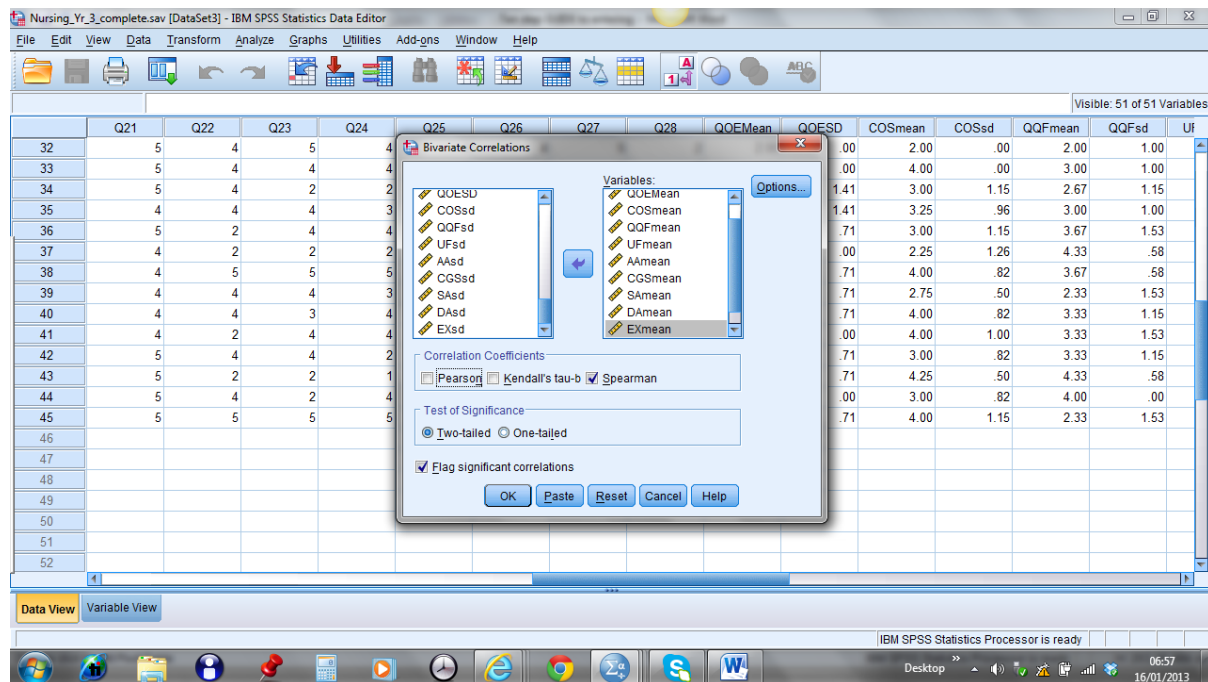
Then press OK for the programme to bring up a correlation matrix.

10. This is what a correlation matrix looks like. I have shaded in yellow the double asterisk correlations, and the single asterisk ones in green. In general I only look at the yellow ones because they are moderate to strong correlations. So in this case you have a few:

The more students feel the programme covers the syllabus, the less likely they are to take a deep approach (-.418)

The more highly students rate the quantity and quality of feedback, the more the programme is likely to be encouraging students to engage in meaningful tasks (appropriate assessment (.518)

The clearer students are about goals and standards, the less they take a surface approach (-.489)

			QOEMean	COSmean	QQFmean	UFmean	AAmean	CGSmean	SAmean	DAmean	EXmean	OSmean
Spearman's rho	QOEMean	Correlation Coefficient	1.000	.203	.166	.331	.014	.238	.162	.191	.174	.255
		Sig. (2-tailed)	.	.182	.275	.026	.926	.115	.288	.209	.259	.091
		N	45	45	45	45	45	45	45	45	44	45
	COSmean	Correlation Coefficient	.203	1.000	.162	-.285	.070	-.132	.162	-.418	.017	-.070
		Sig. (2-tailed)	.182	.	.288	.058	.650	.386	.288	.004	.915	.647
		N	45	45	45	45	45	45	45	45	44	45
	QQFmean	Correlation Coefficient	.166	.162	1.000	-.322	.518	.197	-.369	-.042	-.010	.177
		Sig. (2-tailed)	.275	.288	.	.031	.000	.194	.013	.782	.949	.244
		N	45	45	45	45	45	45	45	45	44	45
	UFmean	Correlation Coefficient	.331	-.285	-.322	1.000	.024	.140	.044	.328	.316	.192
		Sig. (2-tailed)	.026	.058	.031	.	.877	.359	.772	.028	.037	.207
		N	45	45	45	45	45	45	45	45	44	45
	AAmean	Correlation Coefficient	.014	.070	.518	.024	1.000	.325	-.374	-.095	-.033	.131
		Sig. (2-tailed)	.926	.650	.000	.877	.	.029	.011	.536	.830	.393
		N	45	45	45	45	45	45	45	45	44	45
	CGSmean	Correlation Coefficient	.238	-.132	.197	.140	.325	1.000	-.489	.033	-.002	.388
		Sig. (2-tailed)	.115	.386	.194	.359	.029	.	.001	.827	.990	.008
		N	45	45	45	45	45	45	45	45	44	45
	SAmean	Correlation Coefficient	.162	.162	-.369	.044	-.374	-.489	1.000	.112	-.040	-.311
		Sig. (2-tailed)	.288	.288	.013	.772	.011	.001	.	.462	.796	.038
		N	45	45	45	45	45	45	45	45	44	45

11. Enjoy playing with your data, and get in touch if you have any problems. Remember that the template is also uploaded on this site. There are loads of good youtube videos on SPSS if you get stuck. That's how I learnt how to do this, with a few nudges here and there from colleagues.

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