

CETL-MSOR Conference 2015

Iain Weir, Rhys Gwynllyw and Karen Henderson: A suite of statistics e-Assessments with supporting materials.

We report on a resource created for the statstutor site. It comprises a suite of five statistics e-Assessment modules that relate to the statistical activities involved in choosing and carrying out an appropriate one sample test for location (mean or median) on a randomly generated data set. The modules may be accessed independently or can be taken sequentially which will mimic the flow of a full statistical analysis where the appropriate location test for a particular data set needs to be identified.

The e-Assessments are run using the DEWIS platform which in turn uses embedded R code in order to create random data sets with desired statistical properties and to generate results. Students are able to download a unique statistical data set when they log on to each test or can access a data set that they have previously used. They are required to download this data, run it on the SPSS statistical package, get output and answer a few questions demonstrating understanding of the results. By using a unique customer reference number, students are able to return to their particular data set at a later time.

This resource will benefit students from a wide range of disciplines who need to master a methodical and defensible approach to carrying in depth and appropriate statistical analysis; a variety of application contexts are offered. Data is generated that varies in sample size, normality and in the degree of skewness. Rule of thumb guidelines are given that allow students to choose the appropriate location test based upon sample size, normality test results and skewness values. Repeated use of the e-Assessments will thus allow students to learn how to identify and employ the correct test on a variety of data sets. Feedback is given for inappropriate test choices as well as other incorrect analysis. Videos and instruction pamphlets are accessible as links from the e-Assessment, which give clear instructions as to how to carry out the analyses and interpret results using SPSS.