APS Interest Group on **Psychology Education**

Resource Material Submission – Summary Only

Title of Material	**Interactive computer-based simulations for enhancing the teaching and assessment of psychological research and statistics**
Author(s)	**David Neumann**
Description/Aim	**APAC guidelines state that a core graduate attribute is knowledge of Research Methods in Psychology. Psychology programs thus have courses in research and statistics. However, social science students have negative attitudes and low motivation towards statistics and this predicts poor achievement. To address such problems, the following interactive computer-based simulations have been developed. The simulations let students see concepts "in action" and give them hands-on experience in manipulating data and seeing its effects in real time.**
Benefits of Resource	The exercises are interactive, require students to combine their declarative knowledge of statistics with their experiences in working with the simulations, and allow students to assess their understanding while also obtaining feedback
Issues for Consideration	The interactives are on-line and web-based. This requires Internet access and compatibility between the user software (web browser) and the programming codes used in the interactives (Java and/or Flash)
Approximate Duration	20 minutes per interactive exercise
Primary Content/ Process Topic	Research Methods and Statistics
Other Categories	Graphing qualitative and quantitative data; scatterplots and correlation; sampling bias; sampling distribution of the mean; confidence intervals; hypothesis testing.
Intended student level	Undergraduate – Introductory
Type of Material	Simulated learning environment
Format of Material	HTML file and source code
Further Information Contact *(email only)*	D.Neumann@griffith.edu.au
Review Requested *(Nb: A 'Yes' response to this category indicates that you would like feedback/comments on the materials via email.)*	Yes

Evaluative Data Included *(E.g. Student evaluation, comments etc.)*	Evaluations have been conducted and reported in the following articles: Neumann, D. L. (2010). The use of computer-based interactive simulations in the assessment of statistical concepts. The International Journal for Technology in Mathematics Education, 17, 43-51. Neumann, D. L., Hood, M., & Neumann, M. M. (in press). An evaluation of computer-based interactive simulations in the assessment of statistical concepts. International Journal for Technology in Mathematics Education. Accepted: 27/10/2010. Neumann, D. L., Neumann, M. M. & Hood, M. (2011). Evaluating computer-based simulations, multimedia and animations that help integrate blended learning with lectures in first year statistics. Australasian Journal of Educational Technology, 27, 274-289.