Author’s response to reviews

Title: Gender plays no role in student ability to perform on computer-based examinations

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Dear Sir or Madam:

I wish to submit the revised attached paper for publication with BioMed Central.

The revisions suggested by the reviewers and my responses are as follows: Major Compulsory Revisions:

1. First, the authors have been unable to apply the best analysis, because Excel doesn't have the facilities. There are three factors of interest here which may affect performance as represented by score. The first is year group, the second is gender and the third is type of test (paper or online). The analysis should take these into account simultaneously, as simply looking at one factor at a time may mask effects. The authors should take statistical advice on multi-factor ANOVA.

Response: The data have been analyzed employing the multi-factor ANOVA from SPSS 14. All studies conducted in Excel Tool pack were confirmed through SPSS 14. Further, the authors utilized SPSS 14 and the multi-factor ANOVA for analysis throughout the studies’ data sets and found that there is no difference in performance (score) as influenced by year group, gender, nor exam type.

2. Second, the statistical functions in Excel are not of the best and it gets some things wrong. The deficiencies are well known in the statistical community. Any analysis worthy of publication should be based on reputable statistical software (and appropriate statistical analysis as above).

Response: The data have been analyzed using the SPSS 14 software. The findings from the analysis using the Excel Tool Pac software were confirmed. The tables were changed to show the SPSS 14 output.

3. Tables 1 and 2 are unnecessary and are largely explained in the text.

Response: The authors feel that Tables 1 and 2 are necessary so readers unfamiliar with the curriculum at the University of Illinois at Urbana-Champaign may have a clear understanding of the program and the issues related to this study. Since several different classes were used, and analysis performed utilizing entire classes, and then certain disciplines within the curriculum, it was felt that the tables aided the reader and helped keep them from being confused. However, in deference to the reviewer, the authors did collapse the information into one Table with appropriate changes to reported metrics.

4. The statistical presentation is largely uninformative as it is based upon copying and pasting the output of Excels analysis. Tables of means are usually more informative than the values of test statistics. All tables should be reviewed so that useful information is included. P-values may be better quoted in the text.

Response: The Tables have been updated with output information from SPSS 14 which are more informative and are clearly marked.

5. The authors need to be clear about why they have chosen to use one-tailed or two-tailed tests.

Response: This is now clearly discussed in the paper.

6. A large section of the Discussion (the page before the conclusions) is not really discussion but largely repeats the findings from Results.
Response: The discussion of the performance of students, within each discipline is discussed, with the improved metrics included. Additional information regarding gender performance was added.

7. The References should be checked for completeness and abbreviations.
Response: These have been updated.

Thank you for the opportunity to update this work.

Very truly yours,

Susan M. Kies, Ed.D.
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