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| **Reviewer Comment** | **Proposed Revision** |
| ***Align research questions, methodology, and findings.***   * Reviewer 1: “the primary issue faced is the alignment of the research questions and the interview protocol used to collect data”   + “the research question, refers to knowledge acquisition of statistical computing skills”   + “the questions in the interview protocol seem more focused on troubleshooting issues when questions arise” * Reviewer * Associate Editor: “authors present no evidence that the participants have actually ‘acquired’ skills” | Omitting the previous interview protocol and instead describing the first stage of the interview where students worked through problems and responded to questions about where they had learned that computing concept.   * Should I include the protocol of questions I asked as they reasoned through problems? It really is just three questions. * I’m thinking I could put them verbatim in the data collection section and provide an example of a follow-up question that I asked in addition to the protocol questions. * Will the reviewers want to see the problems that the participants reasoned through, to get an idea of what computational tasks they were asked? |
| * Reviewer 1: “Figure 1 could be removed as it does not appear to add much to the Discussion section” | * MA: The figure makes your findings seem very small. * The comments from Reviewer 2, suggesting that everyone acquires knowledge in this way makes me agree with MA. I could reframe this as part of my coding methodology, as this was the final stage of coding – organizing the themes in a sequential order for the participants. |
| ***Qualitative Methodology***   * Associate Editor: “purpose for framing the study as having a ‘pragmatic phenomenological approach’ is not clear” | * Add in a detailed description of what the phenomena (experience) is that I am capturing. * Include a justification as to why a phenomenology is more appropriate than a case study. |
| ***Qualitative Analysis***   * Associate Editor: “describe the methodology more clearly”   + “make more explicit connections between the data and the results”   + “results from qualitative studies must have validity and reliability”   + “readers much be convinced that other researchers looking at the same or similar data and employing the same or similar methodologies would reach similar conclusions” | * Add in detailed description of different stages of data analysis – like MA’s section in SERJ paper with Jenny Green. * Categories to codes to themes * Cite Huberman and Saldana – Chapter 4 * State that Stacey “checked” my themes? * Send themes to participants for post-hoc “member checking”? |
| * Associate Editor & Reviewers: concern about framing the generalizability of findings * Reviewer 2: information limited to this particular institution or if it has broader implications * Associate Editor: “in framing a qualitative study, it is essential to maintain a middle ground between not overstating or understating the generalizability of the findings” | * Tie findings back to the situation of statistics in environmental science research and the widespread use of R in these fields. * Reemphasize the participants backgrounds and how these factors may influence their experiences acquiring computational knowledge. * Emphasize that there necessarily are differences in computational requirements across fields when implementing statistics, with some students experiencing a more substantial knowledge burden than others. * Tie back to the situation of computing in statistics, where even those with “minimal” computational requirements still require some amount of computational knowledge to implement statistics. |
| ***Content backgrounds of participants***   * Associate Editor: “surprised” by the lack of analysis of relationship of undergraduate education on computing skills | * Providing additional backgrounds on the participants could be done (I still have their email addresses). * It is possible that knowing these students’ undergraduate experiences will help reinforce that they are not coming in with these skills (e.g. experiences with R). * I thought that the |
| * Associate Editor: “more description of the participants’ content backgrounds is needed” * Reviewer 1: “a brief description of each of the four courses would provide the readers with more background on what topic areas were covered by the students” * Reviewer 2: “I imagine that this level of computer literacy would be rare amongst students” | * Description of the “typical” layout of the other two courses for a stat certificate (Sampling, Experimental). * Outline range of other courses taken for stat certificate (e.g. Time Series, Mixed Models). * Description of Environmental Science course these students took that introduced them to SQL * Revise table to state that these students are “familiar” or have seen SQL, so that it does not give the impression they are fluent in SQL (as most did not use it in their research). * *MA & MW: Too much description of the participants background leads the reader to consider this to be a case study, which is not your intention.* |
| * Reviewer 2: “how is environmental science any different from any other non-computer science student needing to obtain these skills?”   + “Why have you chosen this particular area to consider?” | * Include literature on lack of computational preparation of environmental science graduate students. * More clearly situation the historical use of statistics in environmental science fields and how the implementation of statistics has changed. |
| ***Improving the Definitions of Terms***   * Associate Editor: “At present, there are few examples in the manuscript that bring out the statistical aspects of the participants’ work.”   + “The authors need to look for opportunities in the introduction and in the results section to bring such examples to the forfront, since SERJ is a statistics education research journal…” | Adding a section to the literature review that covers:   * Statistics Education research on computing in the Statistics classroom * Environmental science research on graduate student computing preparation and expectations (to implement statistics)   Tying this literature review section to the discussion by:   * emphasizing that research in environmental science necessarily includes statistics * current curriculum (at this institution) inadequately prepares students with the computing skills they require to implement statistics in their research |
| * Reviewer 1: “Weintrop reference to computational thinking that is not addressed again in the manuscript” | Delete computational thinking? The topic of the paper is directed towards knowledge acquisition behavior rather than problem solving. |
| * Reviewer 2: “It would be useful to see a description of what you mean by statistical computing.” * “I thought that it referred to the coding required in statistical packages, but I see that you describe a course at Harvard which used MATLAB, which is not a statistical package.” | Statistical computing is defined, but the definition could be moved earlier.   * Definition of term could explicitly state that it is more than the implementation of a statistical package.   Computing required for the entire data analysis process: data collection, data manipulation, data visualization, data analysis, and conclusions. |
| * Reviewer 2: “I think the article would benefit from a better description of what constitutes an ‘environmental science’ student.   + “In this case you say that it refers to a large assortment of fields serviced by the graduate level applied statistics course sequence. I cannot see any information telling me what these fields are” | Environmental science is defined and there is only one sentence between where it is defined and the sentence the reviewers is referring to.   * I do not believe that we need to change anything. |