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| Parts | Suggestions | Actions Taken |
| Title page | Explore the feasibility, novelty and dissertation-worthiness of this revised title: Effects of Flexible Learning with R and RStudio on Pre-Service Teachers’ Coding, Data Management and Instructional Materials Design | I have considered the suggested title. |
| List of acronyms | Include list of acronyms. |  |
| Rationale  a.  i.  ii.  iii.  b. | Include discussions using the funnelling approach on the following:  Course Outcomes and Course Learning Outcomes of Mathematics in the Modern World (MMW), with special emphasis on coding education and data management  Flexible learning delivery concept of CHED (refer to CMO).  Other open source data analysis software (e.g. PSPP) with a few general descriptions. Greater details to be moved to Related Literature.  Use third person throughout the manuscript. The personal historical details may be moved to the discussion on the choice of the intervention in the (Quasi-)Experimental Design or an Appendix. |  |
| Statement of the Problem/Purpose | Include research question or objective or sub-item on Decision-Making and Metacognition. |  |
| Conceptual/theoretical framework  a.  b.  c.  d.  e. | Separate discussion of theoretical framework.  The concepts here are the theoretical bases, not identified as a result of the intervention. These theoretical bases (which may be multi-disciplinary like in math learning, IT, teacher education, communications, design, etc.) should contribute to the understanding and clarification of your research problem.  Highlight on Mathematics Education rather than on Statistics Education since MMW is under the New General Education.  More highlight on a theoretical basis for coding education, probably on design thinking theory.   * 1. 21C competencies or Technology literacy |  |
| Analytical Framework | Embed the counterbalanced design in the analytical framework. The IPO model may not be the most appropriate since an experimental design is adopted. |  |
| Definition | Define R as a language. Define Rstudio as a software. |  |
| Review of Literature and Studies  a.  b.  c.  d.  i.  ii.  iii.  e.  f.  g. | Include sources on the claim that prominent Philippine universities (e.g. UP) use/prescribe R in instruction.  Provide details with sources on the comparative costs of different data analysis software.  Less on Statistics Education. More on coding and data management in Mathematics Education.   * 1. Include the following local studies:   Lany Dullas’ dissertation, esp. on the data analysis part.  Maureen Collado’s thesis on Levels of Significance.  Other more recent local (incl. SMU) studies on data management or coding, if any.  Delete the literature review in the matrix of studies (Table 1) unless meta-analysis is the method used.  Include at least 50 references.  Include at least 25 related studies from refereed and reputable journals. Exclude citations from obviously and potentially predatory journals. |  |
| Experimental Research Design  a.  b.  c. | If counterbalanced design, one cycle is not enough. At least three cycles (i.e. ABABAB) are required to break any possible tie if only two cycles, i.e. ABAB (What if 1st cycle has significant difference and 2nd cycle has no significant difference? a tie? Inconclusive?).  How will you ensure that when the students do not use R/RStudio, they do not actually use R/RStudio outside of observed class time.  How will truly flexible modality be ensured? Discuss mechanisms that will ensure that student with low to no connectivity and with low to no gadget are accommodated. |  |
| Instruments  a.  b.  i.  ii.  iii.  iv. | Include item to probe students’ exposure to coding, software use, etc.   * 1. Present Rubrics or tools and their validation for the following:   Rating sheet for Quality (incl. elegance) of “Programs” or Lines of Codes.  Data Management Knowledge  Decision-Making and Metacognition  IM design |  |
| Data Gathering Procedure | More detailed descriptions. |  |
| Treatment of Data  a.  b.  c. | Explore an appropriate multivariate method of analysis/modelling, in addition to the test of significance of the effects.  Discuss the steps of Thematic Analysis of the qualitative data, including those on metacognition and challenges.  Content analysis may be needed to study/analyze the students’ output. |  |
| References  a.  b.  c. | Are the Springer articles cited from print or digital sources?  At least 50 distinct references. (The international handbook on research in statistics education should be counted as one even if at least three articles have already been cited from it).   * 1. Include references for theoretical bases. |  |
| Appendices  a.  b.  c. | Include the following:  MMW official CHED syllabus  Draft communications   * 1. Draft questionnaire, rubrics, tests |  |
| Curriculum vitae | Include one-page curriculum vitae |  |