Final Submission
Table of Corrections

Examining the Development of Topic Specific Pedagogical Content Knowledge in Stoichiometry in Pre-service Teachers

Issue(s) raised	How is it/are they addressed	Page number
Order of the preliminary pages does not conform to the conventional format of Research Reports	The following order of preliminary pages is used I. declaration II. Abstract III. Dedication IV. Acknowledgements V. Contents VI. List of Figures VII. List of Tables VIII. List of Appendices IX. List of Acronyms and Abbreviations	Page i – xi
Substitute the “alleged” with the word “reported”	Over the past three years, National Senior Certificate diagnostic reports reported that learner performance in key chemistry topics remains an aspect for concern.	Page iii

Line 9 in the abstract change to read "…pedagogically transform"	"TSPCK is renowned for enabling teachers to pedagogically transform difficult content of specific science topics into forms best understandable by learners"	Page iii
Give details about the nature of the degree for which the pre-service teachers were studying	"The participants were 10 pre-service teachers who were in their final year of Bachelor study in education (B. Ed). They were bound by the requirements of the course and their common choice of physical science as their major subject"	Page iii
Something must be said about the nature of the intervention	"These pre-service teachers were exposed to a TSPCK based intervention that explicitly targeted the development of TSPCK component interaction. More evidence of component interactions was comprehended as developing quality of TSPCK."	Page iii
In what ways did the pre-service teachers improved the quality of their TSPCK as a result of the intervention?	"Pre-service teachers showed more evidence of component interactions post the intervention. The results further indicated that pre-service teachers experienced the components of TSPCK to have different levels of difficulty when using them to transform the content in stoichiometry during planning"	Page iii
Recommendations should be included in the abstract	Recommendations about the implementation of TSPCK in core topics in ITE are made. Firstly, for initial teacher education, it is recommended that courses such as methodology for teaching chemistry be structured as TSPCK based intervention. Secondly, more work need to be done in the examination of retention span of TSPCK. Thus,	Page iv

	similar studies must be conducted in an effort to increase empirical evidence about the extent at which TSPCK is retained by beginning teachers.	
In chapter 1 preamble… line 4 a semicolon of colon is required	*Two research questions have been formulated to steer this study and are indicated in this chapter; additionally, an account of the researcher's positionality is outlined.*	Page 1
Table 1.1 should only refer to topics with stoichiometry	Row 2 and 6 are removed in Table 1.1	Page 3
Page 5 paragraph 2 must be rewritten…	Few empirical studies on TSPCK with pre-service teachers have been reported such as Aydin et al. (2015), however, none have been done with the topic of stoichiometry, particularly in a planning.	Page 5
There is no justification of the data analysis method	The following paragraph was inserted in Chapter 3 The rationale behind the choice of this approach to analysis is grounded on the basis that PCK is tacit (Rollnick, 2008) and so is TSPCK. This tacit nature of TSPCK requires that multiple views should be used to analyse data in order to enhance the value of the claim generated in the study. In addition, as I have indicated above a researcher, I have aligned myself with pragmatic worldview, thus a pluralistic approach to data analysis is required to unfold an in-depth understanding of the development of TSPCK. Lastly, this study has	Page 32-33

	elements of longitudinal program of inquiry, thus Cresswell (2013) argues for the need of mixed method analysis in such studies to enhance the quality of the findings.	
How was qualitative data analysed to answer the research questions	The following extract was inserted in Chapter 3 The data for examining the retention of quality of TSPCK was analysed through in-depth qualitative methods. In this case I analysed the responses in the TSPCK tool using the TSPCK rubric and show how the responses reflected TSPCK episodes	Page 34
A clear distinction between valid and reliability is required and how were they established in the study.	The paragraphs were inserted in Chapter 3 Furthermore Kane (2012) adds that all validity is construct validity. He aligns himself with Newton's notion that takes validity to be a property of proposed interpretations and uses of test scores. Conversely, this study adopts the same notion of validity, i.e. the test measures exactly what it supposed to measure, in this case, the quality of TSPCK. Thus, in this study, the validity data interpreted was established using the fit statistics calculated by this Rasch statistical model. According to Boone & Rogan (2005), a construct is valid if all the items or components that make up that theory (construct) fall within the conventional statistical range of -2:2. Thus for this examination, the Rasch fit statistics were used to determine the construct validity, these were calculated for both the pre and post test scores. On the other hand reliability refers to dependability, consistency and replicability of results, over time, over researchers and over groups of respondents (Cohen, Manion, & Morrison,	Page 35

	2011). In this study a TSPCK rubric was employed to mark qualitative responses from the TSPCK tool. Prior the marking process, three responses were selected and marked independently by raters in order to improve reliability through precision and accuracy.	