

What Instructional Skills and Strategies Do Competent Mathematics Teachers Use in Teaching Statistics in School Mathematics during PCK Development

S.B. Ijeh¹ and G.O.M. Onwu²

*¹Department of Mathematics Education, University of South Africa, Muckleneuk Campus,
AJH Van Der Walt Building, Room 6-37, South Africa*

Telephone: 012 429 6627, Fax: 0865993184, E-mail: ijehsb@unisa.ac.za

²University of Pretoria, Greonkloof Campus

E-mail: gilbert.onwun@yahoo.com

KEYWORDS Pedagogical Content Knowledge (PCK). Statistics. Instructional Skills and Strategies. Competent Mathematics Teachers and Teaching

ABSTRACT Pedagogical content knowledge (PCK) comprises subject matter, content knowledge, instructional skills and strategies, conceptions in statistics teaching, and learners' learning difficulties. This study focuses on the instructional skills and strategies used for teaching statistics during PCK development. Research findings show that these skills and strategies are not always apparent. A clear understanding of these skills and strategies, however, would be useful for mathematics teacher education programmes. Of the six mathematics teachers initially chosen because of their school's performance over two years in the senior certificate examination in mathematics, four were selected from the results of a conceptual knowledge exercise (CKE) in statistics for this study, which adopted a qualitative research method. The data on teachers' pedagogical knowledge were collected through a teacher CKE, concept mapping, lesson observation, questionnaire, video recording, teachers' written reports and document analysis. The results indicate that competent mathematics teachers used topic-specific instructional skills and strategies (PCK) in statistics teaching. The implications for mathematics teacher education programmes are also discussed.