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ESTIMATION OF ERRORS COMMITTED BY FURTHER MATHEMATICS STUDENTS IN LOGICAL REASONING AND REMEDIATION USING WILSON'S LEARNING CYCLE

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ABSTRACT

Errors committed by further mathematics students in logical reasoning are estimated and remediation offered, using Wilson's learning cycle. Three research questions were answered and one hypothesis was tested at 0.05 level of significance. Informal experimental design, specifically, before-and–after without control design was adopted for the study. Sixty (65) SSII students (44 males, 21 females) from four co-educational public secondary schools in Northern Education Zone of Plateau State were used for the study. Purposive sampling technique was used to select schools that met the criteria of the study. Further mathematics teachers of the schools received training from the researchers for one week, after which they taught their students. All the students completed the same unit covered within a period of five weeks. The instrument used for this study was Error Remediation Items (ERI) with rubrics as Marking Guide. The rubric was developed based on seven (7) different types of errors including symbolic, comprehension, transformation, process skill, encoding, careless and logical errors. The reliability coefficient of the instruments was 0.86, determined using Kendall's coefficient of concordance. The Error Remediation Items were administered as both pretest and posttest. Frequency count and Percentages was used to answer question 1, Wilcoxon Signed Rank Test to answer question 2 and Mann-Whitney U Test to answer question 3, and test the hypothesis at 0.05 level of significance. The findings showed that teaching further mathematics using Wilson's learning cycle reduces the errors committed by students in logical reasoning. Other findings of the study are discussed.

KEYWORDS: Estimation of Errors, Further Mathematics Students, Remediation