

## Science and Mathematics Instructional Strategies, Teaching Performance and Academic Achievement in Selected Secondary Schools in Upland

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**Abstract :** Teachers have an important influence on students' academic achievement. Teachers play a crucial role in educational attainment because they stand in the interface of the transmission of knowledge, values, and skills in the learning process through the instructional strategies they employ in the classroom. The level of achievement of students in school depends on the degree of effectiveness of instructional strategies used by the teacher. Thus, this study was conceptualized and conducted to examine the instructional strategies preferred and used by the Science and Mathematics teachers and the impact of those strategies in their teaching performance and students' academic achievement in Science and Mathematics. The participants of the study comprised a total enumeration of 61 teachers who were chosen through total enumeration and 610 students who were selected using two-stage random sampling technique. The descriptive correlation design was used in this study with a self-made questionnaire as the main tool in the data gathering procedure. Relationship among variables was tested and analyzed using Spearman Rank Correlation Coefficient and Wilcoxon Signed Rank statistics. The teacher participants under study mainly belonged to the age group of 'young' (35 years and below) and most were females having 'very much experienced' (16 years and above) in teaching. Teaching performance was found to be 'very satisfactory' while academic achievement in Science and Mathematics was found to be 'satisfactory'. Demographic profile and teaching performance of teacher participants were found to be 'not significant' to their instructional strategy preferences. Results implied that age, sex, level of education and length of service of the teachers does not affect their preference on a particular instructional strategy. However, the teacher participants' extent of use of the different instructional strategies was found to be 'significant' to their teaching performance. The instructional strategies being used by the teachers were found to have a direct effect on their teaching performance. Academic achievement of student participants was found to be 'significant' to the teacher participants' instructional strategy preferences. The preference of the teachers on instructional strategies had a significant effect on the students' academic performance. On the other hand, teacher participants' extent of use of instructional strategies was showed to be 'not significant' to the academic achievement of students in Science and Mathematics. The instructional strategy being used by the teachers did not affect the level of performance of students in Science and Mathematics. The results of the study revealed that there was a significant difference between the teacher participants' preference of instructional strategy and the student participants' instructional strategy preference as well as between teacher participants' extent of use and student participants' perceived level of use of the different instructional strategies. Findings found a discrepancy between the teaching strategy preferences of students and strategies implemented by teachers.

**Keywords :** academic achievement, extent of use, instructional strategy, preferences

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