STUDENT PERFORMANCE IN MATHEMATICS
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Mathematics is a very important subject that students need to learn both for pragmatic and theoretical purposes. This was one of the realizations in a paradigm shift that happened in America during the early half of the 20th century when Russia launched its first space craft called “Sputnik”. From then on, the United States revisited its curricula and academic programs giving emphasis on fundamental science subjects including mathematics. As a result, they established these subjects as part of the core that needs the most attention for improvement.

In line with the significance of mathematics in providing scientific-based education to students, many studies that dealt with problems on student performance in mathematics in learning institutions had been previously conducted. One of them is that of Lamb and Fullarton (2000) showing how classroom and school variables stand in equal footing with student background variables in terms of increasing student achievement in mathematics. Clearly, they argued that all of these variables are contributory either to increased or decreased student achievement in mathematics both in primary and secondary schools.

In another study, Coleman, Campbell, Hobson, Portland, Mood, Weinfeld and York (1966) found that performance of students in mathematics are substantially shaped both by personal demographics and other external variables such as the physical construct of the school, its achievement, and classroom factors. Coleman et al. based their assumption in the findings of their analysis that variations in school achievements mirror diversity on student performance in mathematics. On the contrary, however, Jencks, Smith, Acland, Bane, Cohen, Gintis, Heyns, and Michelson (1972) upon evaluation of the same data set reached a different conclusion. They claimed that student achievement in mathematics is entirely dependent upon their attributes or personal demographics noting that all else like school policies, physical structure, and teacher attributes are irrelevant.

Another study conducted by Bosker and Witziers (1996) found that several factors affect the performance of students in mathematics including school effectiveness. While it could be convincing enough that performance in mathematics, a highly conceptual subject, is entirely dependent upon students’ skills and other demographic characteristics, recent studies take into account the role of schools in increasing and improving student performance in mathematics. Traditional notions are easily suspended when one considers the significance of
acknowledging the hierarchical structure of variables as emphasized by Raudenbush & Willms (1991):

An irony in the history of quantitative studies of schooling has been the failure of researchers' analytic models to reflect adequately the social organization of life in classrooms and schools. The experiences that children share within school settings and the effects of these experiences on their development might be seen as the basic material of educational research; yet until recently, few studies have explicitly taken into account the effects of particular classrooms and schools in which students and teachers share membership. (p. xi)

By maintaining this hierarchical nature of information or variables, Raudenbush and Willms (1991) deny the setting aside of external factors considering only the attributes of students in analyzing factors that affect their performance in mathematics. It is through this inclusive evaluative measure that an objective conclusion could be obtained in consideration of the matter discussed at hand.

Being an important subject, mathematics and student performance in it should be examined very carefully that every potential factor affecting it must be considered.

References