

IMPORTANCE OF STUDENT'S PREREQUISITE SKILLS IN LEARNING MATHEMATICS

by:

RYSY MAY G. CONSTANTINO
Teacher III, Limay National High School

The mathematical skills that students learn at the elementary and intermediate levels serve as the foundation for all higher-level mathematics courses. Before taking higher-level mathematical learning courses, students should master foundational lessons, applications, and competence. Mastering elementary and middle-level mathematics improves students' probability of success in advanced mathematical coursework.

In mathematics, understanding concepts and applying knowledge are extremely important. Before one can solve fraction-related problems, one must first comprehend the base ten number system and basic operations such as addition, subtraction, multiplication, and addition. Before evaluating ratios and proportions, one must first learn fractions. Before algebra instruction begins, a complete and detailed understanding of mathematical applications must be attained (Brown & Quinn 2007). Students cannot handle being taught at levels above their present understanding because mathematics builds upon itself, with each mastered lesson opening the opportunity for the developmental understanding of another. Students must be challenged intellectually within the concept of mathematics rather than simply taught at their present grade level.

To master content, students learn at different rates and this enables a wide range of individualized teaching instruction and strategies. It is widely acknowledged that students require interactive, problem-based instruction to help them learn the subject matter. Even the best teaching techniques, however, will fail if students do not meet their existing cognitive level. Even if a student is in sixth grade, they should not be taught using sixth-grade teaching materials if they have not met fifth-grade mathematics principles.

To support all students in their present mathematical understandings, teachers must incorporate differentiated teaching instruction into the classroom. The mathematical key components will not be developed if the mathematical foundation is not fully grasped. Furthermore, students will have difficulty making necessary connections within the relevant content or understanding higher-level mathematical skills.

Mathematics enables people to balance checkbooks, calculate tips, validate their change from a purchase transaction, determine the cost of a sale product, and increase the yield of a recipe. Everyone encounters and performs mathematical applications every day. Moreover, enhancing the subject of mathematics is far more essential than its practical application. Mathematics mastery directly correlates to the student's future and achievements, whether in the workplace, college, or the military (Wang 2003). Mastering fundamental mathematics skills prepares students for a higher-level mathematics course that produces students who are college and employment ready upon graduation from high school, thereby enabling the goal of developing global citizens.

Students who do not fully comprehend basic arithmetic concepts, whether with simple base ten numbers or fractions, will most likely be unable to employ such concepts in equations with variables involved. Students should take higher-level mathematics courses with solid foundational experience in order to obtain an understanding of such concepts. Students may find complex mathematics topics to be an overwhelming pack of irrelevant information in problem-solving if such skills are not fully established. To make sure that students are fully equipped for higher-level mathematics classes, they must be exposed to teaching instruction according to the mathematical knowledge required in the class rather than the grade level they presently belong to.

Mathematical skills are important not only for students who are planning to attend college but also for students who do not plan to continue their education after high school. According to Jia Wang (Wang 2003, p. 14), "Students' learning performance in gaining

mathematical knowledge is linked to the success of early job performance." This implies that the progress of students who decide not to continue college is still connected to their mathematical abilities. Those who establish a solid mathematical foundation in elementary school and continue to build it in high school acquire skills such as problem-solving, critical reasoning, making inferences, and perseverance (Wang 2003).

These abilities and characteristics are highly valued in both college and the workplace, resulting in proactive students or employees. As a result, mathematics assists students not only in the everyday mathematical application of knowledge gained but also in the development of marketable skills and attributes necessary to obtain a job or graduate from college (Wang 2003).

References:

https://www.researchgate.net/publication/26490458_Important_Prerequisites_for_Students'_Mathematical_Achievement

https://ideaexchange.uakron.edu/cgi/viewcontent.cgi?article=1182&context=honors_research_projects