

“Why Are U.S. Mathematics Students Falling Behind Their International Peers?”
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Over the years, American schools are constantly being compared to Japan's schools [in mathematical performance]. They are considered to be a “powerhouse” over us. So we ask the question, why? What is going on in their schools that is not occurring in ours?

Japan's cultural emphasis on mathematics is a huge factor. Parents and society have great concern over high achievement, so they regard this subject as very important. The home is considered a powerful educational institution. Parents provide the motivation for their children to succeed at very young ages. They provide private tutoring when their children are not performing as well as others, or when they need help with passing entrance examinations into college or university (Dutton, 1977).

Another factor of Japan's success is how much time they spend in the classroom. School is in session 5-6 days a week. Therefore, students in Japan average at least 8 more hours of schooling a month than U.S. students (Miyake, Nagasaki, 1997). Research has also shown that Japanese students take more mathematics courses than American students do (Stigler, 1988).

Japanese superiority in math exists as early as kindergarten, and it is remarkable by the time the children reach fifth grade. The dominance of these students is not limited to basic computational skills but extends to nearly every math-related area that has been tested (Stigler, 1988). This supremacy can be credited to the amount of verbal explanation that occurs during a mathematics class. Japanese teachers constantly stop to discuss and explain the topic at hand. The teachers give, and ask students to give, lengthy verbal explanations of mathematical concepts and algorithms, opposed to American teachers who are more likely to stress participation in non-verbal activities or ask short-answer questions to lead students into a new topic. Japanese teachers not only explain more but also produce more complicated and abstract explanations than American teachers, especially in the first grade (Stigler, 1988).

Explanation: This is a very clearly reasoned article. There are many supporting premises. It is a good exercise to see if students can properly categorize (analyze) the three main reasons in support of the conclusion. I separated the reasons on the page for the sake of visibility.

