Methods of Learning During Early Childhood Development
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Abstract
Teaching the basic fundamentals of arithmetic such as addition, multiplication, and so on can vary drastically throughout the world. In the early stages of childhood development, these methods implement different thought processes while still coming to the same conclusions. Children of different backgrounds presumably are able to compute complex mathematical functions at the same rate as they progress. We investigated if this hypothesis was true by looking into the different methods taught at an early age, and comparing them to the national test scores as students progress academically.

Methods and Goals
Researching data collected by both the PISA and TIMSS our group wanted to:
• Establish the consistent top tier of countries that take the TIMSS and PISA exams.
• Research what methods are used by the top countries during early childhood development.

Findings
• Western countries often focus on lesson plans containing an excessive amount of content.
• Eastern countries tend to go over much more in depth over a comparative miniscule amount of material.
• African and South American countries consistently are found at the bottom of these rankings.
• East Asian countries, specifically Singapore, seem to dominate both the TIMSS and PISA international average scores.

Conclusions
From our research we can conclude that there were two primary variables that contributed to test scores:
• The lowest ranking countries consistently have a lack of resources in education. This puts primarily the African and South American countries at a disadvantage.
• Countries who focus on a smaller number of topics at a time while going more in depth typically outscore countries who spread their lesson plan thin.

Future Work
We found that the East Asian countries did not show positive correlation between educational expectations and mathematical achievement. It would be interesting to do more research into what seems to be contradicting evidence.

References
National Center for Education Statistics. [March, 21, 2019].