

MATHEMATICS' PLACE IN THE ENTIRE CURRICULUM

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Human intellect and logic are fundamentally based in mathematics, which is also essential to our efforts to understand the outside world and ourselves. Mathematics promotes logical thinking and mental rigor and is a useful method for developing mental discipline. Additionally, comprehending mathematics is essential for learning other academic disciplines like physics, social studies, and even music and art.

This TSG's goal is to look into how mathematics fits into the broader curriculum. We intend to divide the papers and subsequent discussions into three main strands due to the large range of potential themes that could be covered in this TSG.

First, we ponder why mathematics occupies such a special position in comparison to other topics. What role does mathematics play in the whole school curriculum, in other words? We start out by outlining a few reasons why math should be taught seriously in the context of the entire curriculum.

- The nature of mathematics is transversal. Math (geometry and algebra) were two of the seven liberal arts in both ancient Greece and medieval Europe, if we think about the history of education in general. The idea that mathematics has historically given the mental discipline needed for other subjects is supported by this position.

- Mathematical literacy is a key quality of people who lead more productive lives as responsible, constructive, and reflective citizens. Basic computational skills,

quantitative thinking, spatial reasoning, and other abilities are considered to be part of mathematical literacy.

- Mathematical concepts and methods are utilized to address issues in a variety of fields and disciplines, such as science, engineering, and economics. When compared to the aforementioned mathematical literacy, the complexity of such problems frequently needs quite complicated mathematical concepts and methods (for instance, comprehending complex numbers is a precondition to learning many topics in electronics).

- Mathematics is a component of our cultural heritage as humans, and it is our duty to preserve that heritage.

Second, the topic of how mathematics is entwined with other school courses need to be addressed because mathematics supplies the fundamental information and abilities for other school subjects, such as sciences, art, economy, etc. As a "instrumental subject," mathematics is provided independently in certain curricula to facilitate the study of other academic disciplines. In other curricula, integrated courses that mix mathematics and other fields are offered.

Thirdly, we might want to consider how many hours (or what percentage of hours) and/or courses are devoted to math in comparison to other subjects taught in each nation's curricula. Along with this quantitative research, data on the qualitative comparison of school mathematics with other disciplines must also be acquired. Although this comparison won't provide us a complete picture of why different nations place the value on mathematics that they do, it may nonetheless spark more conversation.

References:

<https://www.mathunion.org/icmi/role-mathematics-overall-curriculum#:~:text=Mathematics%20provides%20an%20effective%20way,and%20even%20music%20and%20art>