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The Mathematical Foundations of Integral Education

The aim of the presentation is to discuss the general mathematical approach to integral education. Of course, as it is a conference address, it is more of an outline, as completeness here would be more troublesome than illumination. Generally, our point of view is that any mathematical model presented to the students should be based on a hidden or explicit form of the category theory which we will be able to demonstrate inside a specific interpretation of a dynamic system well known to the audience. The author's hope that this approach, strongly related to the language of the lecture as well as to the perception of the audience, would result in implementing integral teaching, ranging from letters and natural numbers to coordinate-free tensor analysis on differential manifolds and unitary operators in Banach and Hilbert Spaces.

Keywords: integral education, mathematical education, category theory, dynamic systems