When we teach children a procedure for solving a mathematical problem, we not only want them to learn the procedure and apply it correctly, but we also want them to understand why the procedure works. Children struggle to gain conceptual understanding from procedures, especially when a regulation of physical space, objects, and time were encountered—and would shape anew.

“Overall, the study revealed valuable information about the use of concrete materials when teaching children a problem-solving procedure. Specifically, it suggests that concrete materials are most beneficial when they are explicitly ‘faded’ into more abstract representations during instruction. When we teach children a procedure for solving a mathematics problem, we not only want them to learn the procedure and apply it correctly, but we also want them to understand why the procedure works. Children struggle to gain conceptual understanding from procedures, especially when a procedure is taught only in the context of abstract mathematical symbols.”