

Large-Scale Survey of Students Skills in Reading Math Definitions

Naoya Todo

University of Tsukuba, Tsukuba, Japan

Noriko H. Arai

National Institute of Informatics, Hitotsubashi, Japan

Shingo Sugawara

National Institute of Informatics, Hitotsubashi, Japan

Abstract

Mathematical text reading seems to require a different type of literacy than others since it heavily introduces abstract concepts and require strict logical and literal reading. In this paper, we focus on grades 611 (elementary through high school) students skill in reading math definitions, but not problem solving. Our experiment showed that their skills in reading and understanding math definitions improves as long as math is obligatory (through the 10th grade) but reaches a plateau very quickly after that. However, teaching a math definition and using it to solve exercise problems in the classroom do not seem to improve students ability of reading that specific definition.