

Abstract

Proposed paper is a study of historical development of *wasan*, i.e., traditional Japanese mathematics. I chiefly focus on the origin of *tenzan jutsu*, a calculation method, that by its inner logic and by usage of a symbolic notation greatly resembles Western algebra. As there is no satisfying evaluation of a level of similarity of those two traditions in an existing literature, I decided to closely examine *tenzan jutsu* using a theory of potentialities of language of mathematics proposed by Ladislav Kvasz. Comparing my examination and analysis of Western algebra done by L. Kvasz, I came to a conclusion, that although the language of *tenzan jutsu* is in most aspects almost identical to the language of Western algebra, there is a major difference in a way those languages developed. While the development of the Western algebra was hindered by a cultural need to interpret exponents in a geometrical context and by a strong reluctance to accept negative terms as a part of equation, the development of Japanese mathematics, which was free of such restrictions, was considerably more dynamic.

Keywords

tenzan jutsu, wasan, Tokugawa, Edo, Seki Takakazu, Seki Kowa, algebra, mathematics, tengen jutsu, Ladislav Kvasz, language of mathematics