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Abstract

The purpose of this paper is to respond to the following research problem: how we construct a framework for students' conceptual change of the equal symbol in school mathematics.

In conclusion, we construct such a framework as follows:

(1) evolution of the definition of the equal symbol;

(2) change of the object connected by the equal symbol;

(3) a student's "equality" which evaluates the equal symbol.

In order to draw this conclusion, the research is conducted as follows: first, discussing *the equivocality* and *the contraction* of mathematical notation in students' knowing about the equal symbol, and then contriving "*equality*", which is a student's naive conception that expands general concept of equality; second, for the relation of these categories, the definition of the equal symbol evolves with change of the objects connected by the equal symbol as a turning point, and a student's "equality" is set up as evaluation to accept such a definition.

Finally, some epistemological obstacles related to students' knowing about the equal symbol expected in present elementary mathematics in Japan are illustrated.