

A MODAL AT MATHEMATICS EDUCATION: DNR BASED INSTRUCTION

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Abstract

Various modals about how to teach, which mathematical knowledge has been established by mathematics tutors. DNR based instruction is a sample for such modals. DNR is an abbreviation of capital letters of the words Duality, Necessity, and Repeated Reasoning. DNR can be regarded as a theoretical base which consists of the premises that explain the logic deep beneath concept and arguments, concepts that are derived from and described with these premises and the assertions deriving from the DNR premises with their concepts; and a theoretical base which is supported by experimental studies. Actually, DNR tries to explain the structure of mathematical knowledge by putting the well known teaching theories to the centre of the matter and establish various theories on teaching and learning mathematics. Mathematics is the combination of two sets: first set is “ways of understanding” that consists of axioms, definitions, theorems, problems and their solutions; the second set is “ways of thinking” that explains the characteristics of the mental acts of the products that composes the first set. Hence, mathematical teaching programmes of every grade must aim to improve these “ways of understanding” and “ways of thinking”. To improve the ways of understanding and thinking, teaching mathematics should be planned by supplying the intellectual needs of learners’ and by making them acquire, organize and re-organize the learnt mathematical knowledge.

Keywords: DNR based instruction, ways of thinking, ways of understanding, intellectual need.