

Math Education Development Research

Mathematics education research can be basically grouped into 6 umbrella research: (1) Learning Mathematics, (2) Learning Theory and Learning, (3) Rating (4) Management Class, (5) Foreign School Mathematics, and (6) Development of Laboratories.

A. Learning Problems

1. Constructivism
2. NCTM
3. RME
4. Problem Posing
5. Open Ended
6. Cooperative Learning: Jigsaw, GI, STAD, TGT, etc.
7. Learning mathematics means using the tools
8. Mathematics Learning with Games
9. Learning with Processing Information
10. Combined: tree mathematics, games etc..

B. Learning Theory and Learning

1. Research based on Piaget theory: the process of thinking and the process construction of knowledge: 1) The concept of the occurrence of error in construct knowledge-based framework assimilation and accommodation. 2) The process in learning mathematics based on framework assimilation and accommodation. 3) The process of analytical thinking in problem solving
2. Research based on Vygotsky Theory: Process Scaffolding and ZPD (Zone Proximal Development). Subtopics with that above: a) The occurrence of scaffolding in learning mathematics Cooperative model. b) The development of knowledge to actual knowledge potential

3. Research based on the Information Processing Theory. How the system work Short Term Memory (STM) and Long Term Memory (LTM) - How can that knowledge stored in long term memory?
4. Thinking About Research Level Students. There are three board subtopics as follow: a) Level of thinking in decision making. b) Level students to think creatively in solving problems. c) Level of thinking in reasoning (proportional, co variation, etc.). d) Thinking about verification in mathematics. e) Representation of thinking in the students solves the problem mathematics. f) Meta Cognitive.

C. Assessment

1. Development of the concept of assessment, reasoning and communication, and problem-solving.
2. Development of performance-based assessment of students

D. Management of Class

1. Exploration models of interaction in student learning mathematics
2. Organization of an effective and efficient

E. Foreign Schools in Mathematics (including Culture)

1. The use of mathematics in the school versus the use of mathematics outside the school
2. Comparison of thinking practitioners and students to think in problem solving in mathematics
3. The use of mathematics in the market

F. Development Laboratory Mathematics

1. Making use of tools and
2. Media-based IT learning