



ANGLIA RUSKIN UNIVERSITY

Developing of Algorithmic Thinking
in Middle School Pupils in Israel

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Definitions

Algorithmic Thinking is a **complex intellectual process** of thinking.

An algorithm can be defined as a collection of unambiguous executable instructions, whose step by step execution leads to a predefined goal, within a finite number of steps.

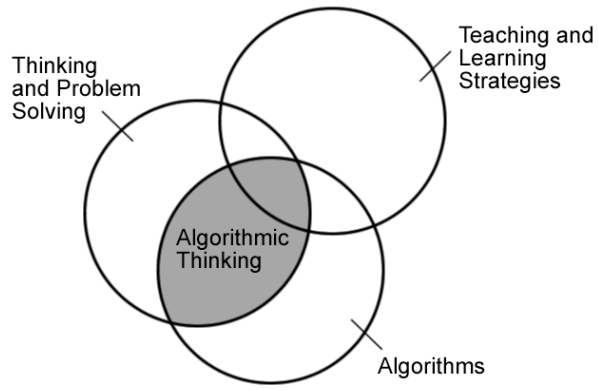
Algorithmic Thinking in this research means thinking about algorithms, creating, building and solving problems with algorithms.

What is the research?

There **is little research to be found** related to the development of Algorithmic Thinking with middle school learners and findings in Computer Science and Computer Education concerned older students.

By contrast, in the field of mathematical education in general, and the psychology of mathematical education in particular, there is a **wealth of research and accepted theories**. Since Algorithmic Thinking is largely of a mathematical nature, studies from the fields of mathematical education and its psychology were used to review this topic and formulate a theoretical and conceptual framework.

Conceptual Framework



Findings

Figure xx - Phenomena observed at different levels of abstraction, and the relationships between them

