

Research on Learning Area Measurement

Network Model of Learning Area-Measurement

To build the connection between multiplicative, geometric and algebraic structure To build spatial concepts As an entry point model As an array As an array To understand the structural view of multiplication as a binary operation with two distinct quantities To understand commutativity and distributivity in multiplication To understand commutativity in multiplication To understand commutativity in multiplication

Network Model

Spiral Structure

Different concepts may be partially known

Concepts are stable to different degrees

Interconnections could be unstable

Trajectory Model

Linear structure

Partial knowledge not supported (considered as error or misconception)

Assume stable concepts

Integration of concepts not addressed



Task Based Interactions



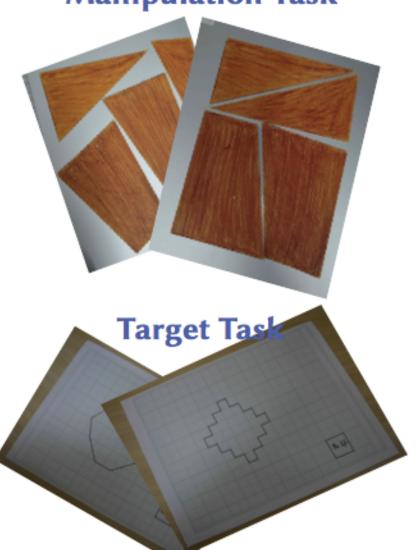
Teaching Design Experiment





Experimental Studies

Manipulation Task



Video data

Those with manipulation show more use of area based strategies

Eye-tracker data

Chunking strategy prevalent among students who did manipulation



