

The Active Learning Pedagogy Sequence (ALPS): A Framework for Developing Equity-based Active Learning Strategies to Engage Students in Mathematical Inquiry

Su Dorée



doree@augsborg.edu

Jenny Quinn



jjquinn@uw.edu

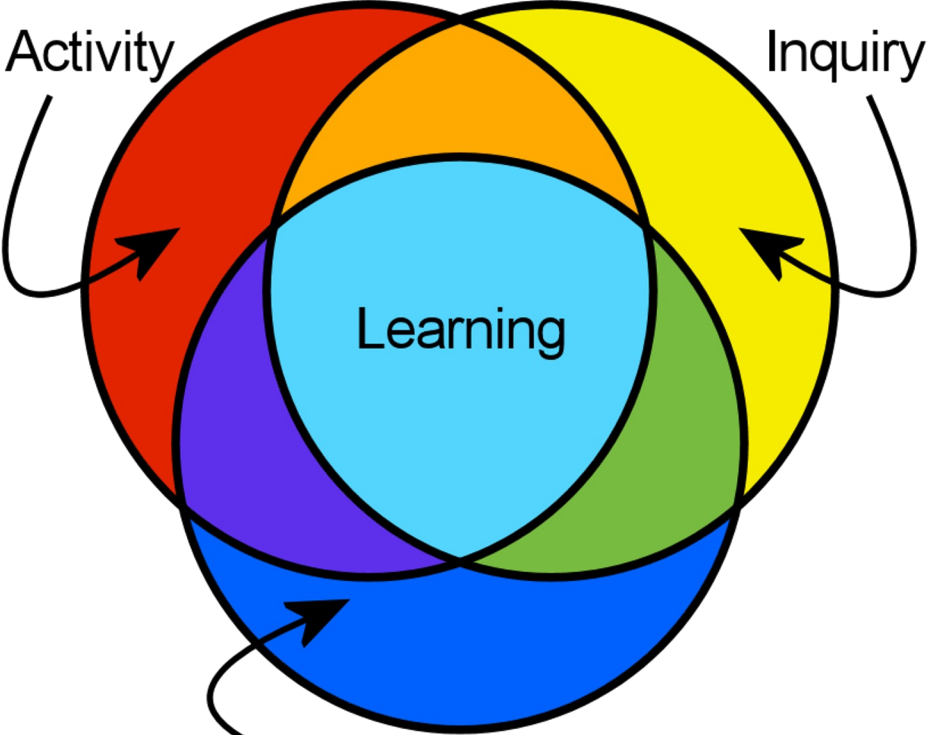
Community

Activity

Inquiry

Learning

Equity



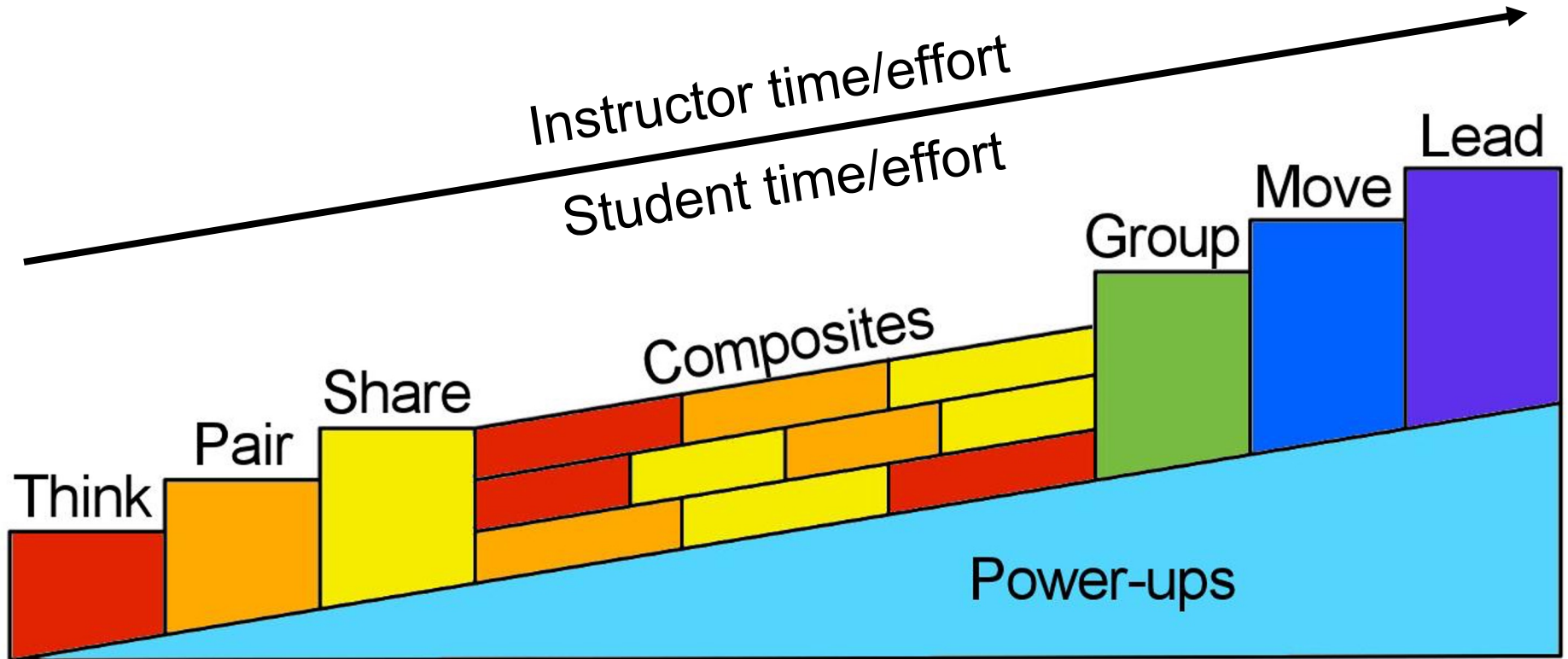


Think

What active learning strategies have you tried*?

* or heard about?

Active Learning Pedagogy Sequence (ALPS)





Think

Give students quiet time during class.

YouDo finish/work on similar problem.

Write reflection ex. one-minute paper, muddiest point.

Focus ex. catch-up time, mindfulness practices.



Pair

Work with classmate(s) informally

Turn-to neighbor quick check-ins, compare answers, ask each other questions (vs. student asking instructor)

Partners/small groups informal collaboration/parallel activities, ex. practice problems



Share

Students share thoughts/answers

Answering questions using equitable calling-on strategies (vs. volunteers answer)

Voting clickers and more



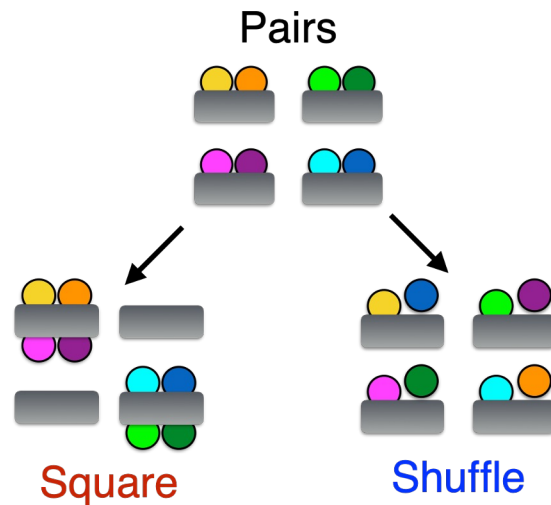
Composites

Combine primes (think, pair, share)

Think-Pair-Share

Think-Pair-Square

Think-Pair-Shuffle



Vote Again think, share (vote), pair, share (vote again)



Power-ups

Strengthen activities by adding

Movement ex. paired boardwork, pass the marker

Touch ex. manipulatives, technology (to experiment)

Help tools spies (go listen) & ambassadors (go help)

Inquiry question, conjecture, play



Group

Formal, structured, collaborative

Roles ex. writer, reporter, quality-control, tech, props, . . .

Positive interdependence requires task that too complicated to do well individually.

MAA Notes #55 Coop Learning (in archives online)



Move

Movement with meaning

Anthropomorphised “be the math”

Experiential do math in context, ex. field trip/lab



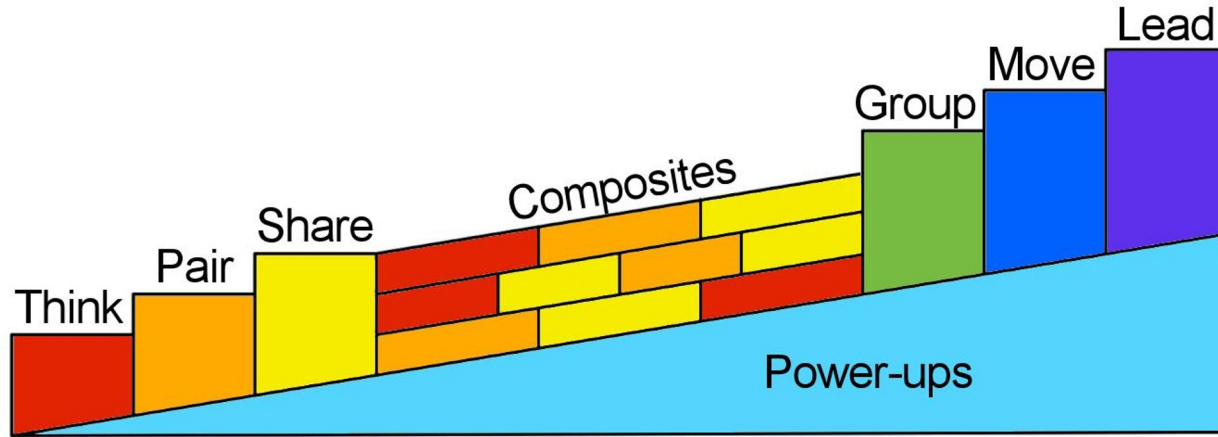
Lead

Student as teacher

Presentations ex. individual, jigsaw, stations

Student designed/led activities

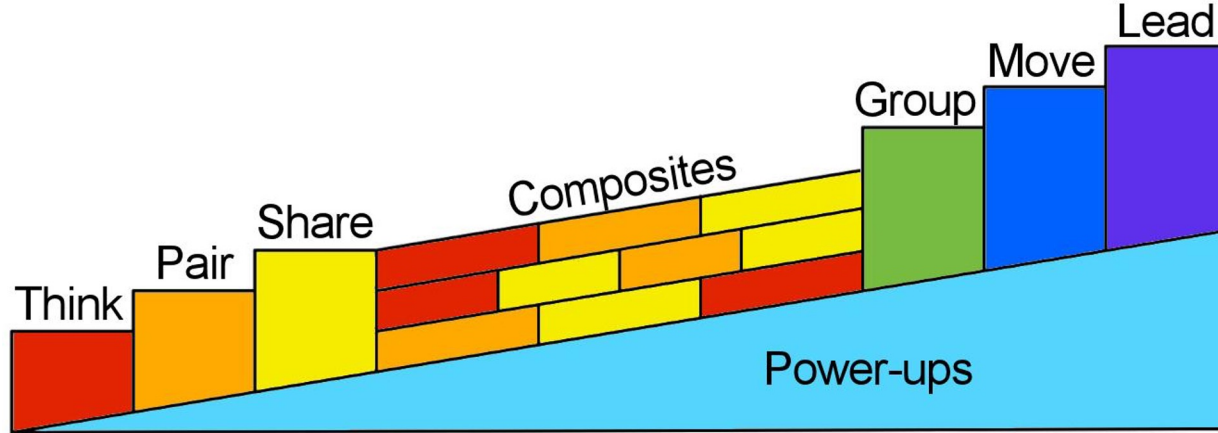
Active Learning Pedagogy Sequence (ALPS)



Pair

What new active learning strategies will you try?

Active Learning Pedagogy Sequence (ALPS)



Su Dorée



doree@augsborg.edu

Jenny Quinn



jjquinn@uw.edu