

Blended Learning, Blended Pedagogies, Blended Content

David Dockterman, Ed.D.
Harvard Graduate School of Education
Scholastic Education
Twitter: @dockterman

This morning

- Alternative framework for blended learning
- Examples of blended coherence in rigor
- Guidance on research-driven innovation

What is blended learning?

1. at least in part through online learning, with some element of student control over time, place, path, and/or pace;
2. at least in part in a supervised brick-and-mortar location away from home;
3. and the modalities along each student's learning path within a course or subject are connected to provide an integrated learning experience.



Teacher and Technology



Blended and Integrated

$$\frac{3}{4} \quad \frac{2}{3}$$

Comparing Fractions Toolkit

- Make sure classroom and online instruction align.

Strategy 1 compare unit fractions

$$\frac{1}{2} > \frac{1}{8}$$

Strategy 2 compare fractions with common numerators

$$\frac{3}{12} < \frac{3}{4}$$

Strategy 3 compare fractions with common denominators

$$\frac{1}{4} < \frac{2}{4}$$

Strategy 4 compare fractions that are one unit fraction from 1 whole

$$\frac{7}{8} > \frac{5}{6}$$

Strategy 5 compare fractions to $\frac{1}{2}$

$$\frac{4}{8} > \frac{4}{16}$$

Strategy 6 change fractions to equivalent fractions

Compare $\frac{2}{12}$ to $\frac{1}{4}$.

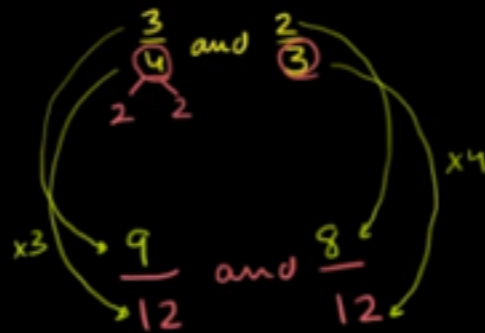
$$\frac{2}{12} < \frac{2}{8} \left(\frac{1}{4} \right) \quad \frac{2}{12} < \frac{3}{12} \left(\frac{1}{4} \right) \quad \frac{1}{6} \left(\frac{2}{12} \right) < \frac{1}{4}$$

Comparing fractions with different denominators

Use $<$, $>$, or $=$ to compare the two fractions $\frac{21}{28}$ and $\frac{6}{9}$.

$$\frac{21 \div 7}{28 \div 7} = \frac{3}{4}$$

$$\frac{6 \div 3}{9 \div 3} = \frac{2}{3}$$



RULES

Fraction Grab (Level 1)

What You Need

- mSpace pages 12-15.
- fraction cards

What to Know

- Shuffle the cards and deal them out equally.
- The player whose card is greater than $\frac{1}{2}$ collects both cards.

How to Win

- If both players' cards are greater than, less than, or equal to $\frac{1}{2}$, players each turn over a new card.
- The winner is the player with the most cards after 10 rounds.

In fractions equal to $\frac{1}{2}$, the numerator equals half of the denominator.



HOW TO PLAY

STEP 1 Each player turns over one card.



STEP 2 Both players record the fractions.



STEP 3 Players compare their fractions to $\frac{1}{2}$.



STEP 4 The player with the fraction greater than $\frac{1}{2}$ captures both cards.



$\frac{12}{13}$	$\frac{18}{19}$	$\frac{1}{2}$	$\frac{7}{8}$	$\frac{5}{6}$
$\frac{8}{9}$	$\frac{19}{20}$	$\frac{5}{6}$	$\frac{4}{5}$	$\frac{17}{18}$
$\frac{6}{7}$	$\frac{13}{14}$	$\frac{6}{7}$	$\frac{9}{10}$	$\frac{9}{10}$
$\frac{15}{16}$	$\frac{5}{6}$	$\frac{3}{4}$	$\frac{8}{9}$	$\frac{9}{10}$
$\frac{6}{7}$	$\frac{6}{7}$	$\frac{14}{15}$	$\frac{18}{19}$	$\frac{13}{14}$

SCORE 0

x2

1:48



LEARN ZONE

- Think
- Try
- Practice
- Master

Use a benchmark to compare fractions. Compare $\frac{5}{6}$ and $\frac{4}{3}$.

Step 1: Choose a benchmark to compare the fractions.

$$\frac{5}{6} ? \frac{4}{3}$$

Compare with

$\frac{1}{2}$ 1

Reset Check It

Coherent strategy instruction and reinforcement

A Theory to Problem Solving

Tech Engagement?

??????????



Learner Agency?



Individualized Lrng?



Blended Learning

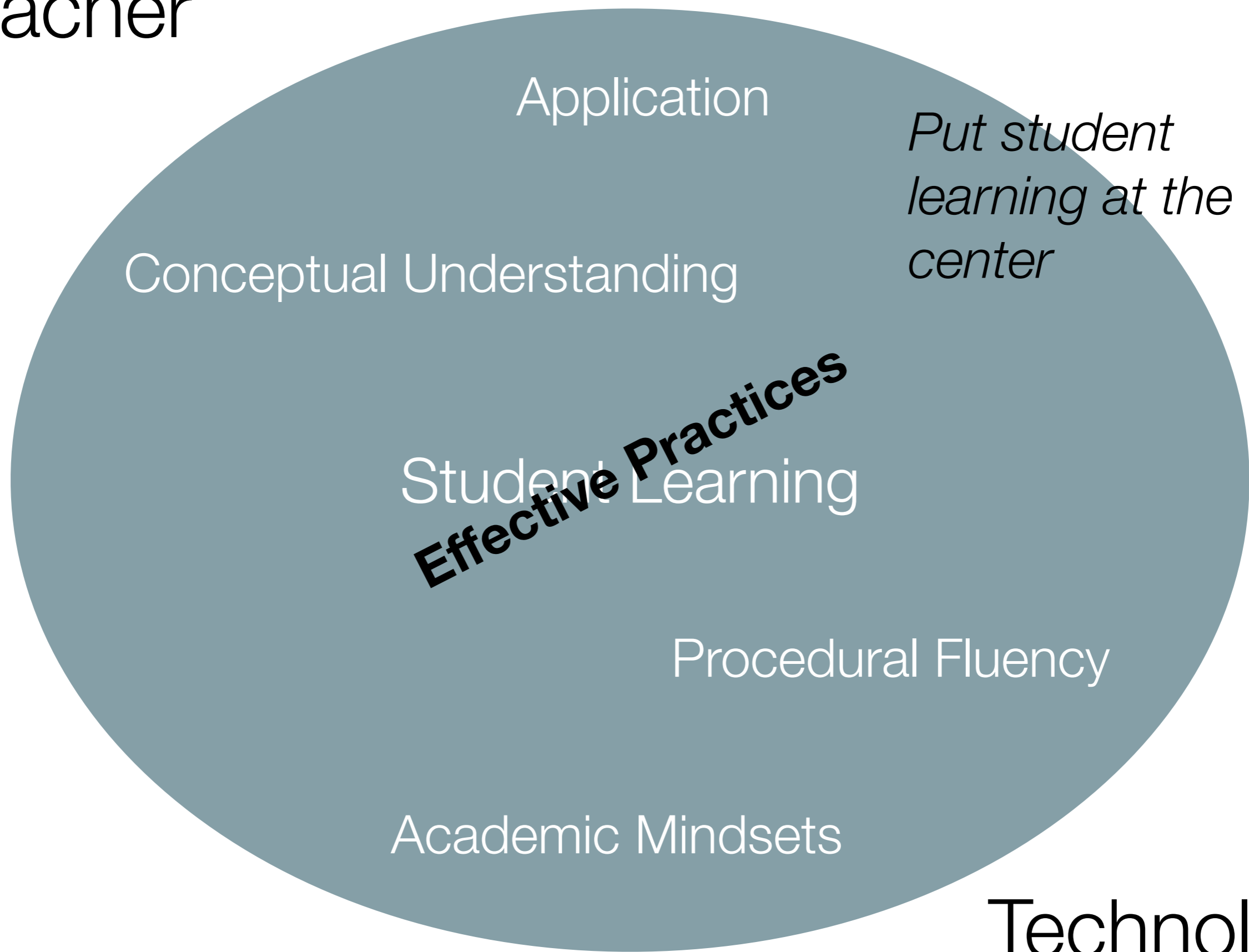
Move away from Teacher and Technology

Teacher



Technology

Teacher



Technology

High-Leverage Practices

Elicit Student Thinking

Establish Norms and Routines

Modify Tasks

Respond to Common Patterns of Thinking

Lead a Discussion

Lead a Discussion



Using Data to Differentiate

Launch Scholastic Central to group students for differentiated instruction based on performance on the mSkills Assessment.

1 Groupinate
The Groupinator® will analyze student data and recommend groups and differentiated instruction lessons for each rotation.

2 Review Data
Review the performance data and groupings. Click on **Class Analytics** and **Student Analytics** for additional information. Modify groups as needed.

3 Plan Instruction
Click on **Rotation A** and **Rotation B** tabs to access digital lessons, lesson plans, and practice pages assigned by the Groupinator.

The screenshot shows the Scholastic Central Groupinator interface for MATH 180, Period 1. It features a sidebar with navigation options like Classroom GPS, Class Analytics, Student Analytics, and Learning Resources. The main area displays a 'Checkpoint Data to Differentiate' section with a 'GROUPINATOR™' tab. Below this, there are two rotation tabs: 'ROTATION A PREP & PLAN' and 'ROTATION B PREP & PLAN'. The interface shows student names and their performance levels (Master, Proficient, Developing, Not Yet, Incomplete) for different units. A 'TEACH' button is visible at the top right. A legend at the bottom indicates the performance levels: Master (green), Proficient (light green), Developing (yellow), Not Yet (red), and Incomplete (grey).

Technology for the teacher

Sometimes the best use of technology is to inform and build teacher practice.

LITERATURE REVIEW JUNE 2012

Teaching Adolescents To Become Learners

The Role of Noncognitive Factors in Shaping School
Performance: A Critical Literature Review

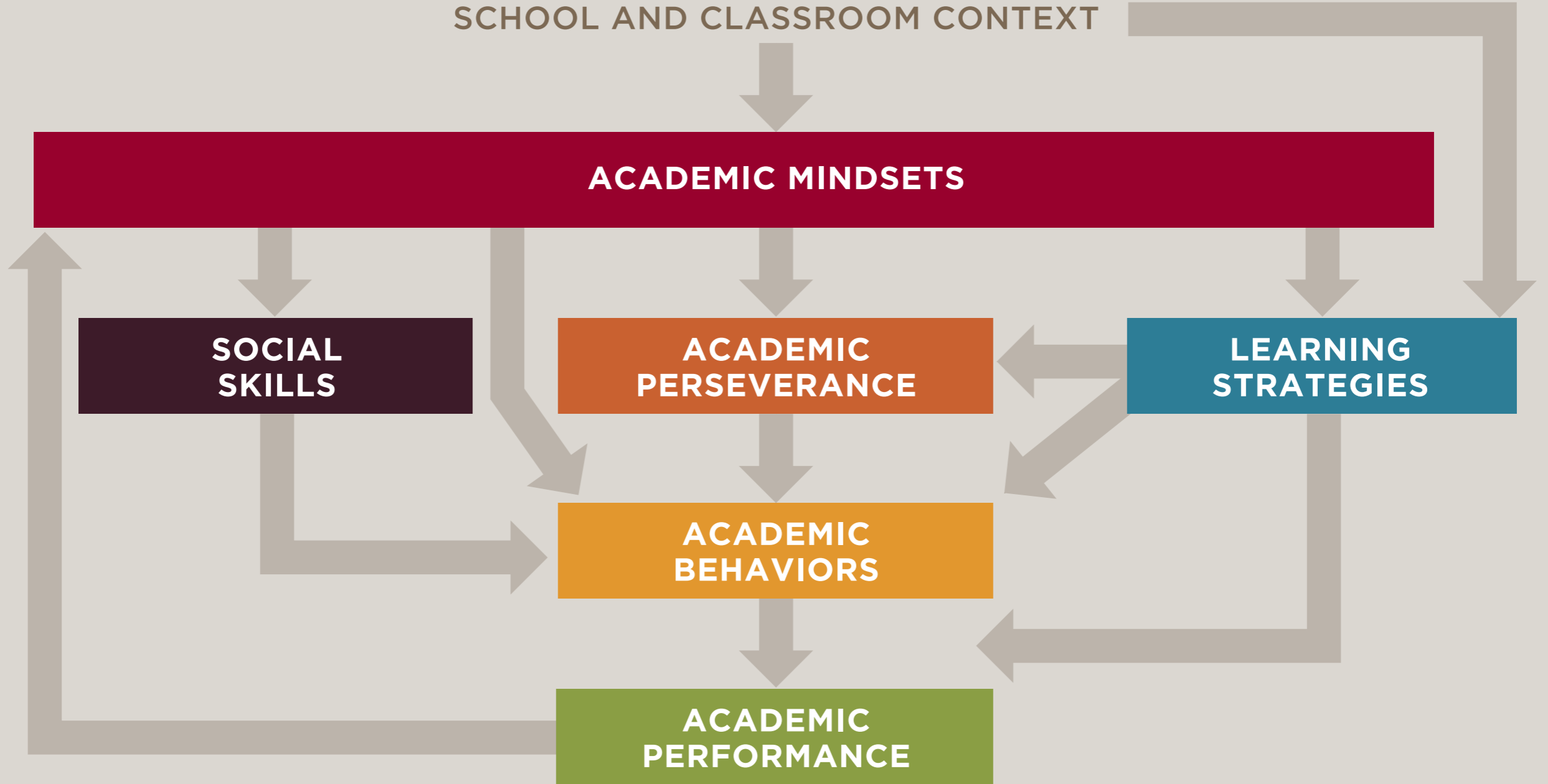
What are Academic
Mindsets?

Farrington, et.al., 2012

SOCIO-CULTURAL CONTEXT

SCHOOL AND CLASSROOM CONTEXT

STUDENT BACKGROUND CHARACTERISTICS



Beliefs that drive
learning behaviors

That lead to performance

I believe this is worth doing.

I believe I can learn what I need.

Beliefs

Knowledge,
Skills, Strategies

I believe I can do it.

I believe my group values my effort.

Behaviors

Task

Set a Mindset Context

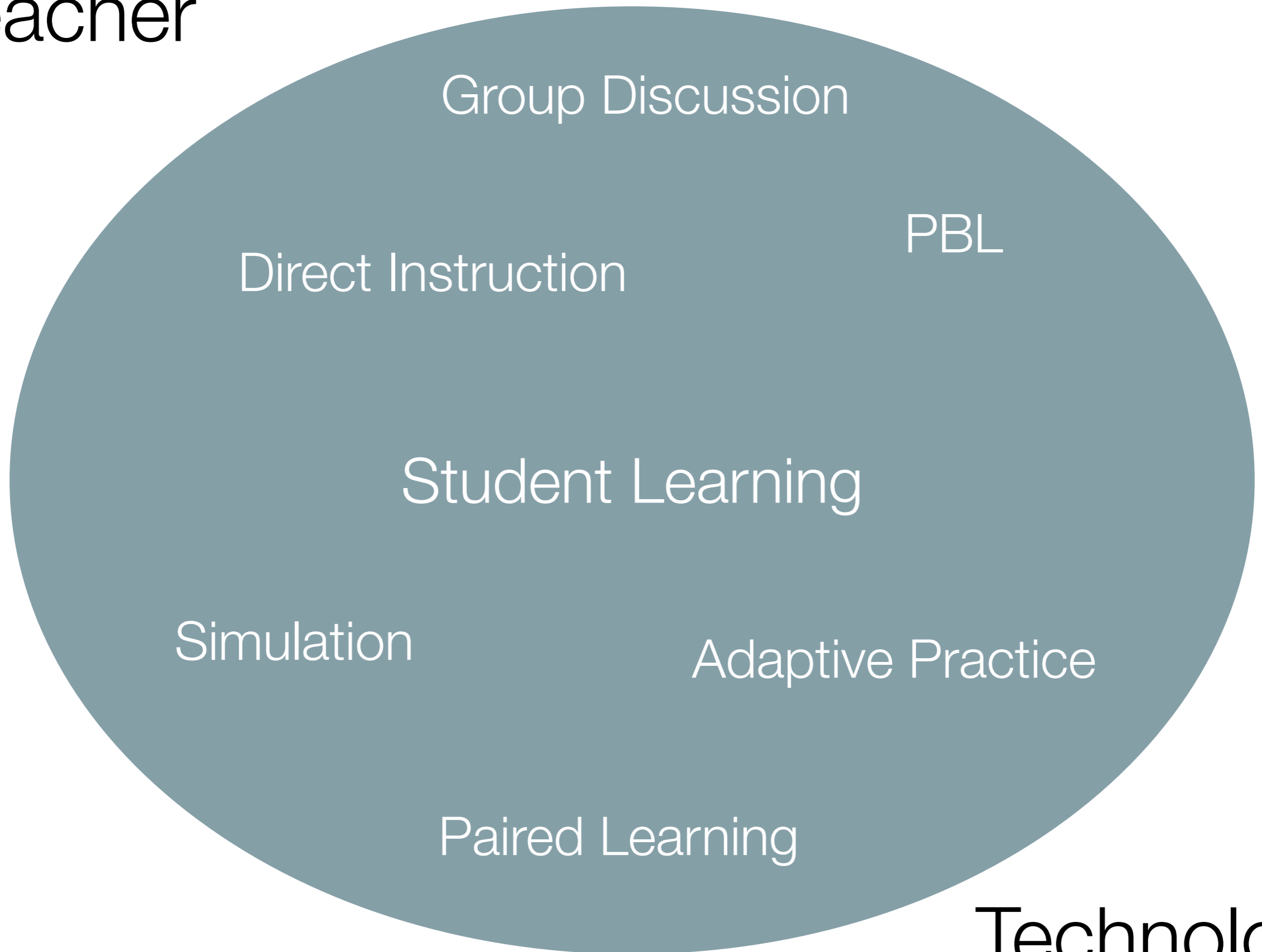
- Norms
- Feedback
- Challenge- and help-seeking

Struggle is a natural part
of the learning process.

That helps you *get* smart.

Seek Goldilocks tasks
where hard is just right.

Teacher



Group Discussion

Direct Instruction

PBL

Student Learning

Simulation

Adaptive Practice

Paired Learning

Technology

Guiding Blended Learning

- Put student learning and learning goals in the center
- Innovate around effective instruction
- Teacher and Technology are ever-present constants
- Keep coherence in content, pedagogy, & feedback

Questions? Comments?

david_dockterman@gse.harvard.edu

ddockterman@scholastic.com

Twitter: @dockterman