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New Corequisite Solutions with a Mindset Emphasis

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Purpose

To share new MyLab Math solutions
for corequisite courses – or any courses

Topics

1. Addressing academic mindset
2. Designing corequisite remediation
3. Monitoring student progress
4. Coming Soon: Adaptive Homework, Corequisite Support Modules

Academic Mindset

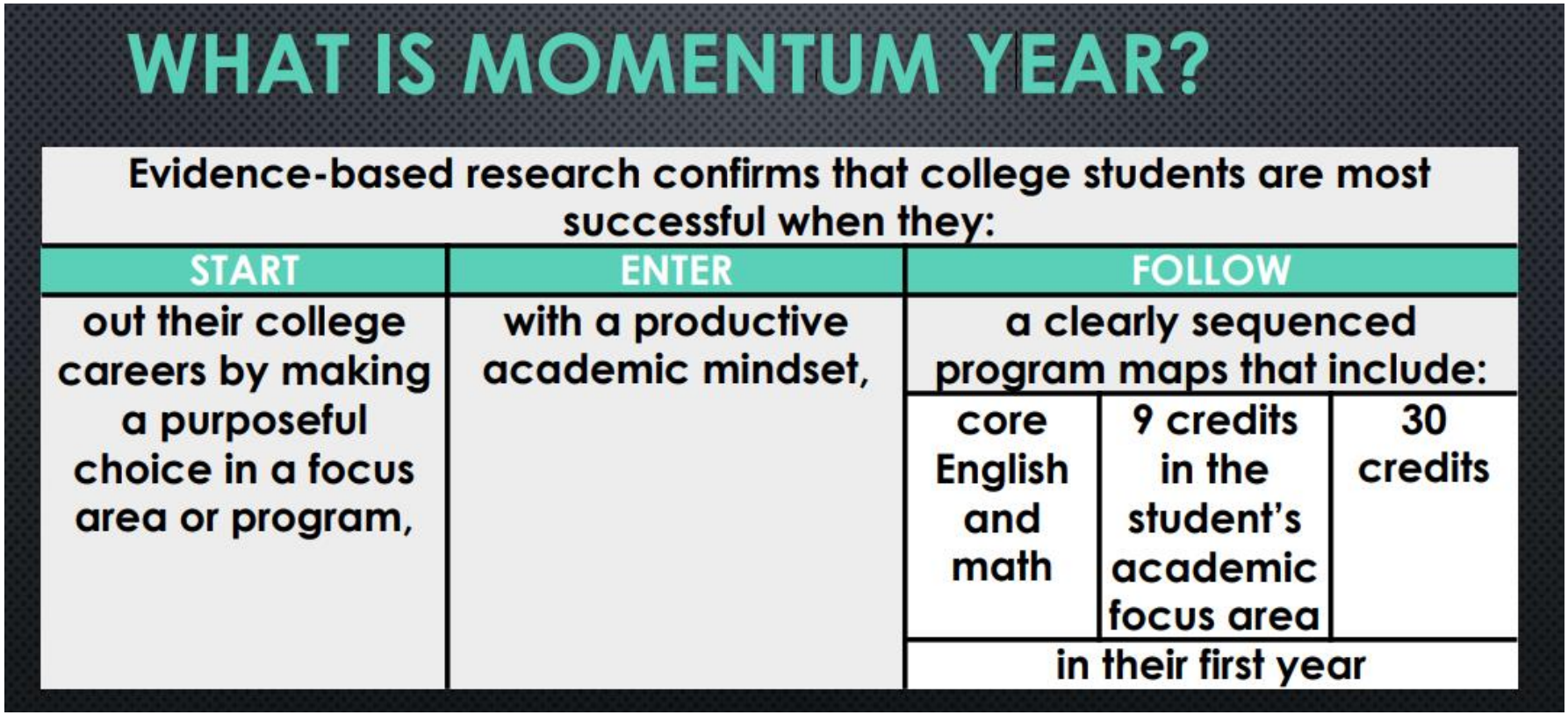
USG Momentum Year Initiative

“

A starting point that helps students find their path, get on that path, and build velocity in the direction of their goals ”

~ Complete College Georgia

USG Momentum Year Initiative



Academic Mindset

Non-cognitive factors that promote long-term learning and achievement

- Focus on long-term goals
- Persevere towards goals

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Mindset – Growth or Fixed?

Growth Mindset ~ one's knowledge can increase, is malleable

Fixed Mindset ~ one's knowledge is unchangeable, innate

TABLE 1
Academic Mindsets, for Those With More of an Entity Versus Incremental Implicit Theory of Intelligence

	Entity Theory	*Incremental Theory*
Goals	Look smart	Learn
Value of effort, help, and strategies?	Higher	Lower (sic)
Response to challenge	Tendency to give up	Work harder and smarter
Changes in grades during times of adversity	Decrease or remain low	Increase

From: Yeager, DS & Dweck, CS. (2012). Mindsets that promote resilience: When students believe that personal characteristics can be developed. Educational Psychologist 47(4), 302-314

Instructors can affect students' mindsets!

- Instructors with a fixed mindset affect students' motivation and expectations
- Instructors praising intelligence rather than effort has been shown to sometimes backfire – affecting student's pursuits of more difficult tasks

Test your mindset!
https://mindsetonline.com

Mindset in MyLab Math/ Statistics

MyLab Math: Mindset Instructor Guide

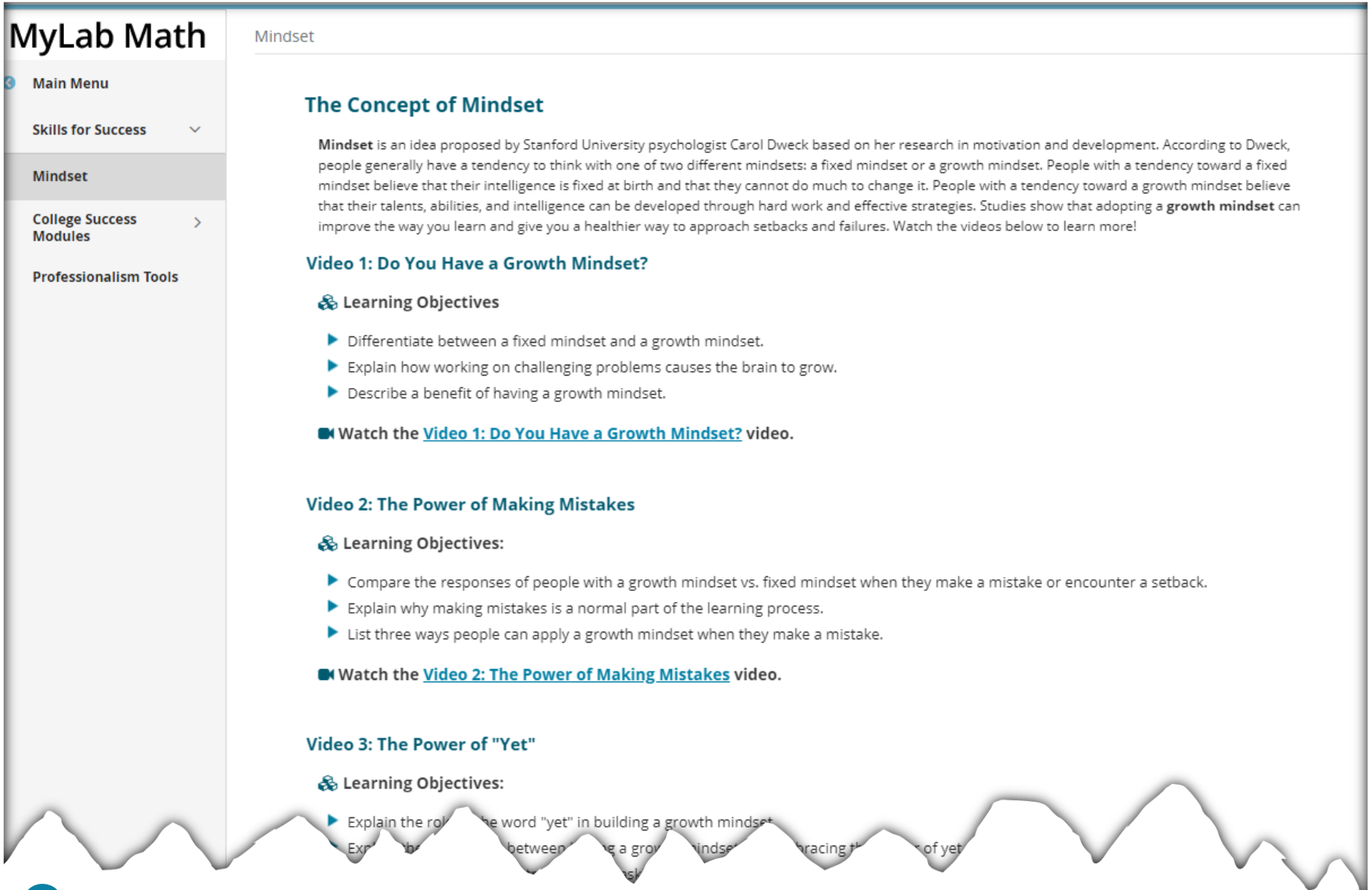
Understanding and Implementing Mindset

Brief Background on Mindset Theory 1
Suggested Implementation of Mindset Material 1
Learning Objectives 2
Video Links and Descriptions 3
Writing Assignments and Sample Student Responses 3
Additional Mindset Teaching Resources 6

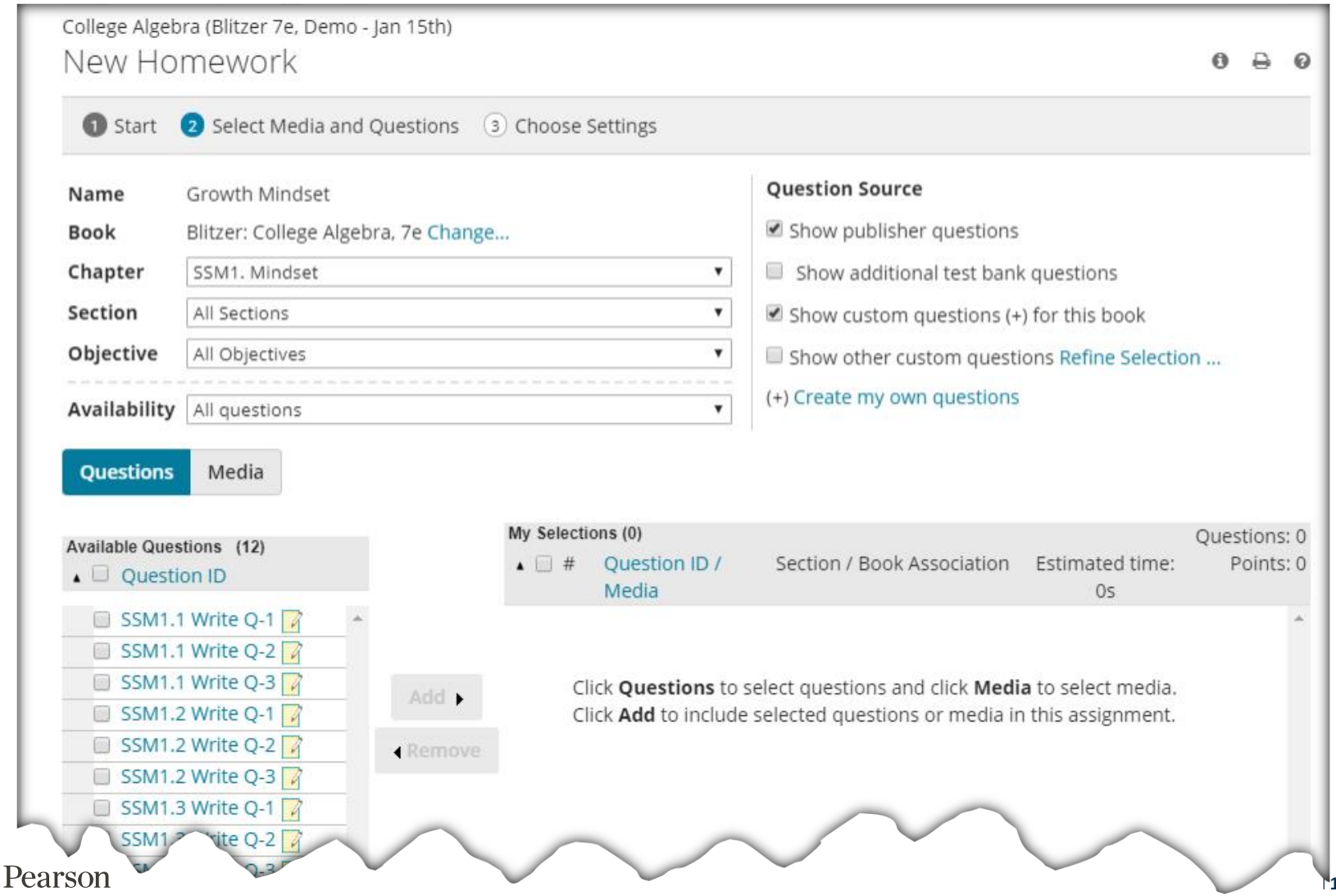
Brief Background on Mindset Theory

Many instructors are familiar with students who become discouraged with challenging work and give up because they don't think they have what it takes to succeed. *Mindset* is an idea proposed by Stanford University psychologist Carol Dweck based on her research in motivation and development. According to Dweck, people generally have a tendency to think with one of two different mindsets: a fixed mindset or a growth mindset. People with a tendency toward a fixed mindset believe that their intelligence is fixed at birth and that they cannot do much to change it. People with a tendency toward a growth mindset believe that their talents, abilities, and intelligence can be developed through hard work and effective strategies. In fact, studies show that teac[illegible] student[illegible] to a[illegible]opt a[illegible]th mindset[illegible]improve their learnin[illegible]

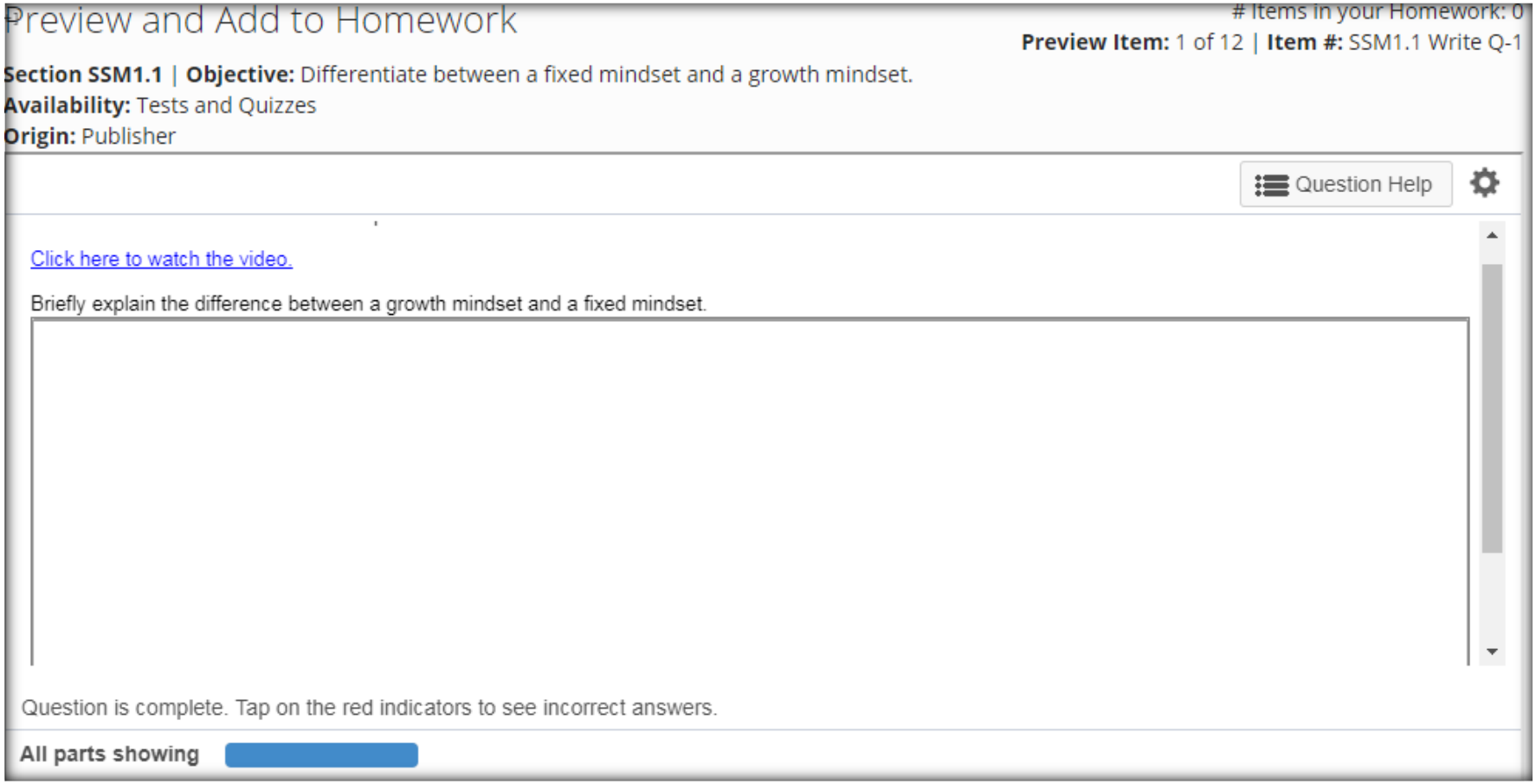
Skills for Success Module

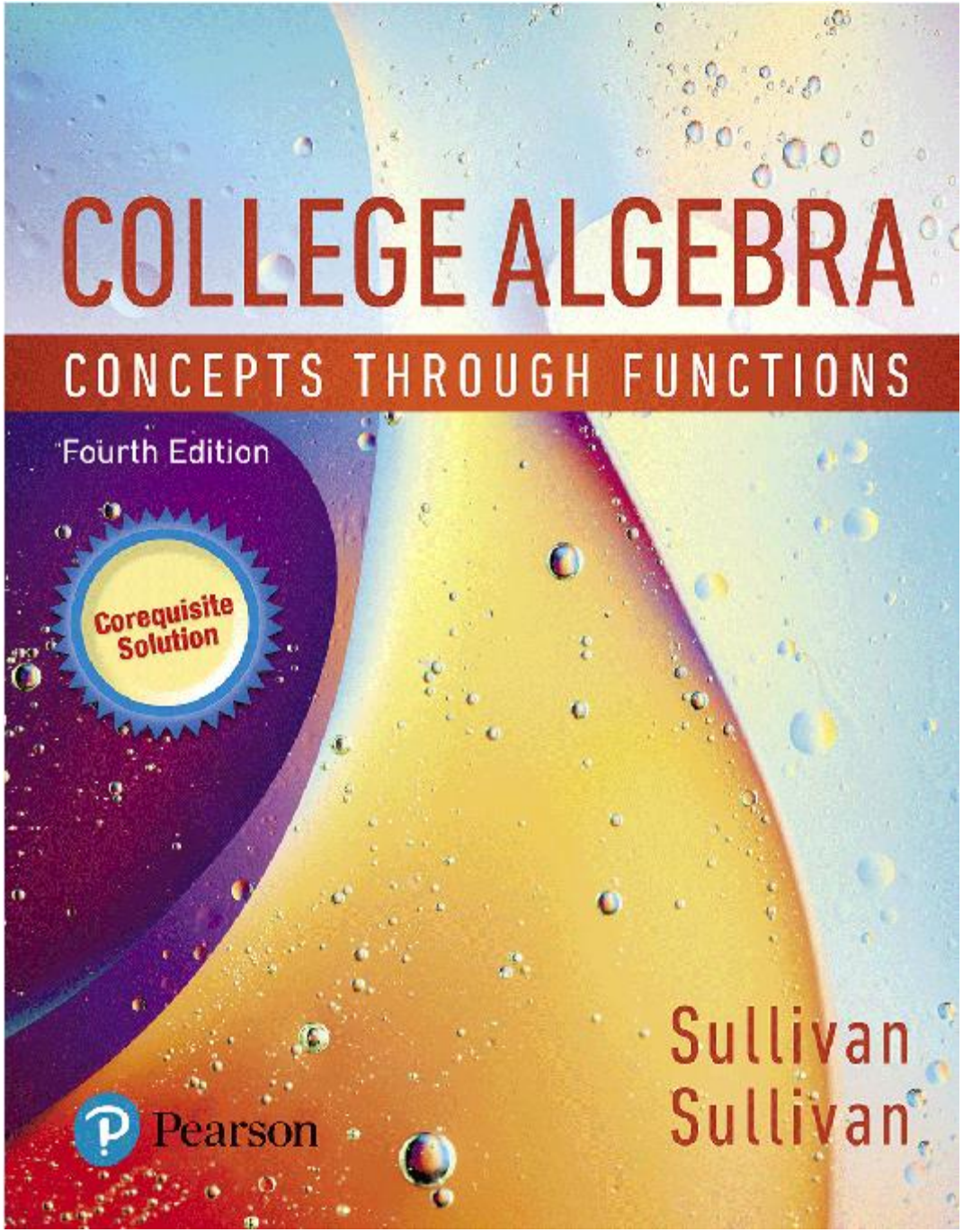


Mindset: Assignable Exercises

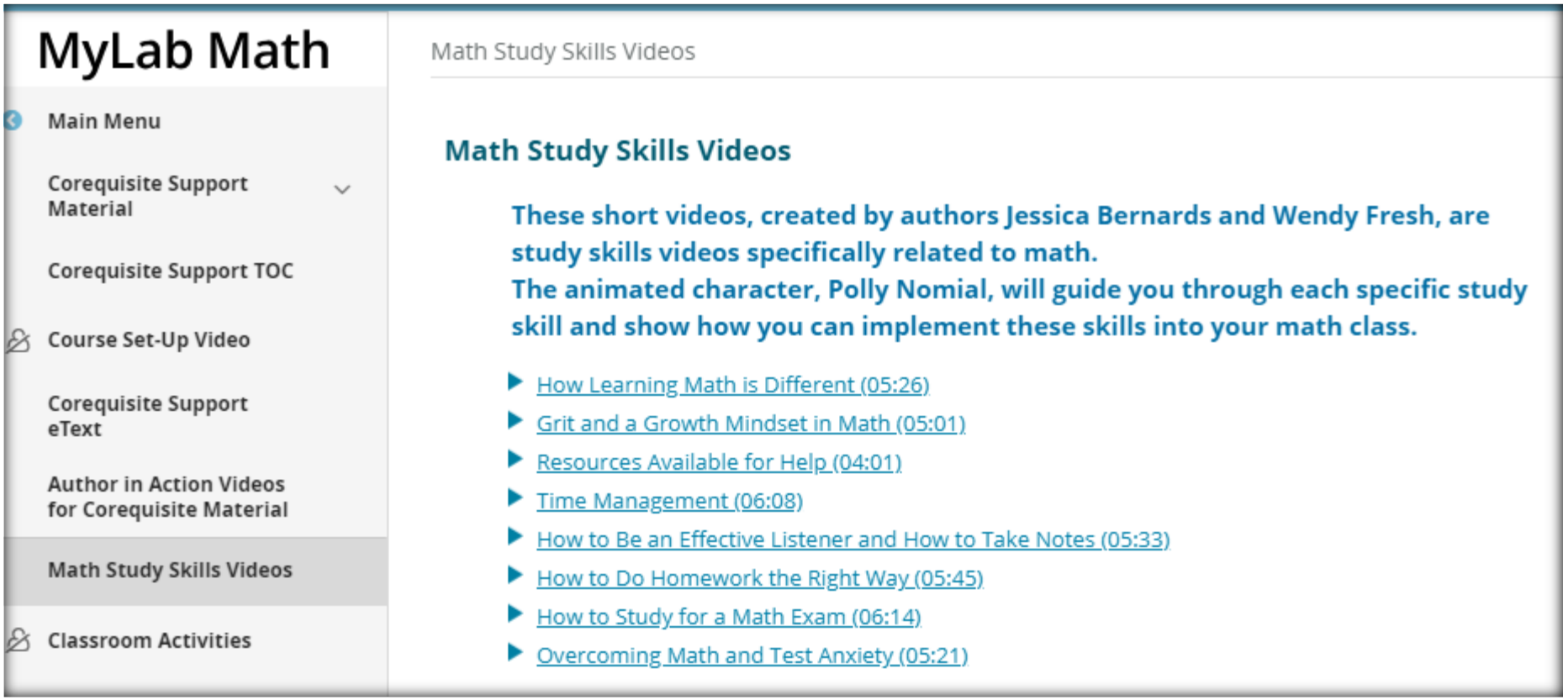


Mindset: Assignable Exercises

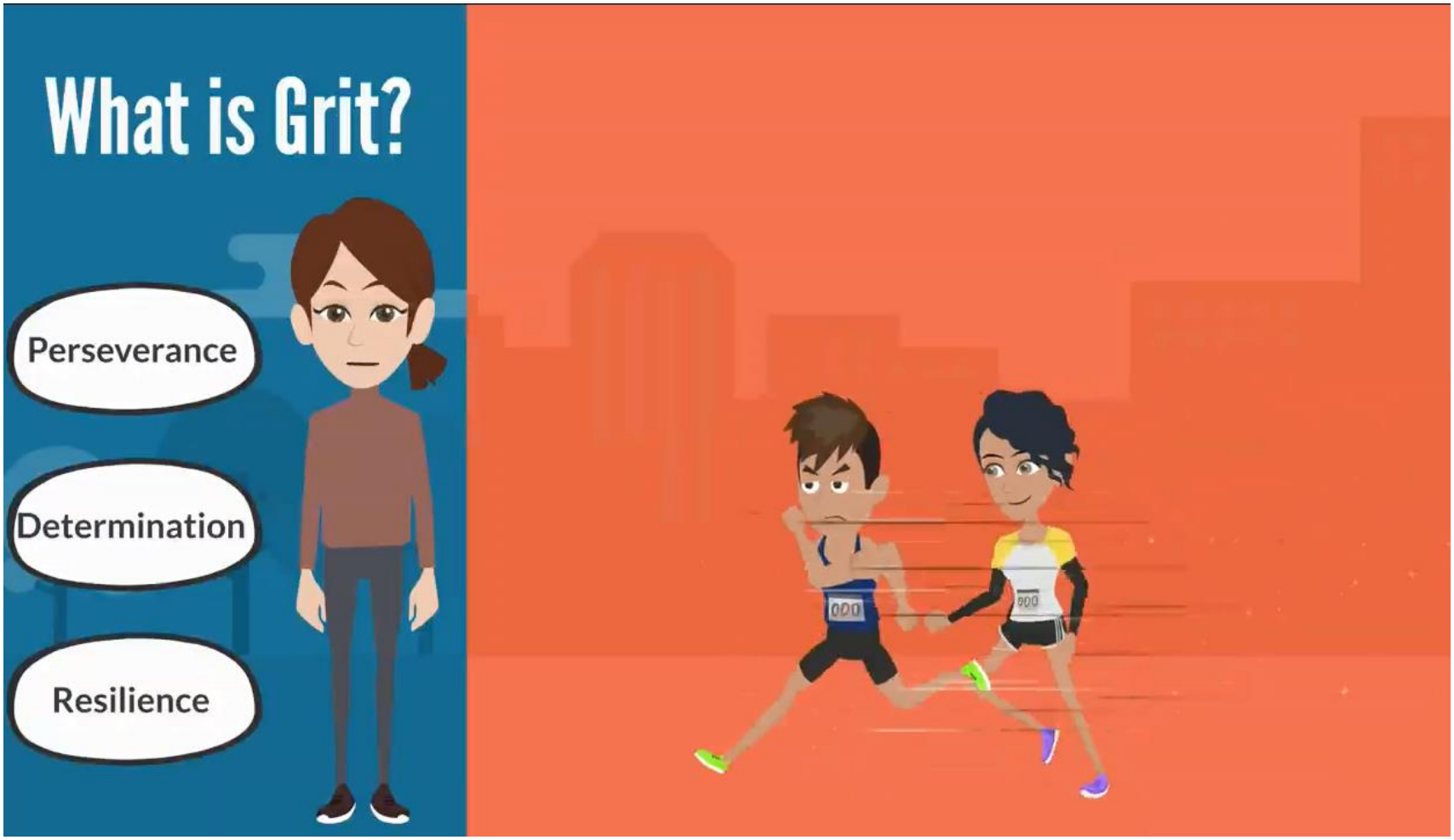



COLLEGE ALGEBRA
CONCEPTS THROUGH FUNCTIONS
Fourth Edition
Corequisite Solution
Pearson
Sullivan
Sullivan

Sullivan: Corequisite Support Material



Meet Polly Nomial



New Homework

1 Start 2 Select Media and Questions 3 Choose Settings

Name tester

Book Sullivan: College Algebra: Concepts Through Functions Corequisite, 4e (2019) Change...

Chapter SS. Study Skills for Math

Section All Sections

Objective All Objectives

Availability All questions

Question Source

- [x] Show publisher questions
- [ ] Show additional test bank questions
- [x] Show custom questions (+) for this book
- [ ] Show other custom questions Refine Selection ...

(+) Create my own questions

Questions | Media

Available Questions (16)

Question ID
SS.1.1
SS.1.2
SS.2.1
SS.2.2
SS.3.1
SS.3.2
SS.4.1
SS.4.2

Add ▸

◂ Remove

My Selections (0) Questions on assignment: 0

#	Question ID / Media	Section / Book Association	Points on assignment: 0

Click **Questions** to select questions and click **Media** to select media.
Click **Add** to include selected questions or media in this assignment.

Designing Corequisite Remediation

Sullivan

MyLab | Math

College Algebra: Concepts Through Functions, A Corequisite Solution FOURTH EDITION

Sullivan, Sullivan III, Bernards, Fresh

Welcome to College Algebra: Concepts Through Functions, A Corequisite Solution

You may be asking, "What is corequisite?" Corequisite courses combine reviewing skills first presented in high school with a corresponding college-level course. The logic behind this new model is that most students have seen a majority of the content in the prerequisite courses at some point in their high school careers. Rather than re-teach the same material in separate non-credit bearing courses, corequisite courses review the material on a "just-in-time" basis that is needed to be successful in the corresponding college-level course, such as College Algebra.

Corequisite Support for College Algebra: Concepts through Functions provides the review material necessary to be prepared for your College Algebra course. Each chapter in the corequisite text contains material that is needed to be successful in the corresponding chapter in College Algebra. Chapter R of the corequisite text (*Corequisite Support for College Algebra: Concepts through Functions 4e*) contains material that is review from College Arithmetic and Elementary Algebra. This material should be mastered prior to working on any of the "Preparing for..." chapters.

The material in Preparing for Chapter F of the corequisite support course is meant to be covered prior to (or while) covering the material in Chapter F of College Algebra. Below is a summary of the work flow.

- Complete Preparing for Chapter 1 of the corequisite support material prior to (or while) covering Chapter 1 of College Algebra.
- Complete Preparing for Chapter 2 of the corequisite support material prior to (or while) covering Chapter 2 of College Algebra.

And so on...

Resources to Help You Learn

We offer a variety of tools to help you master the material. The two you are most likely to use are the objective-level videos and the text.

Videos: The[illegible] are create[illegible]e objective level so that you wil[illegible] time [illegible]eos on [illegible] ha[illegible]
[illegible]ere[illegible]nclu[illegible]e deve[illegible]f the[illegible]

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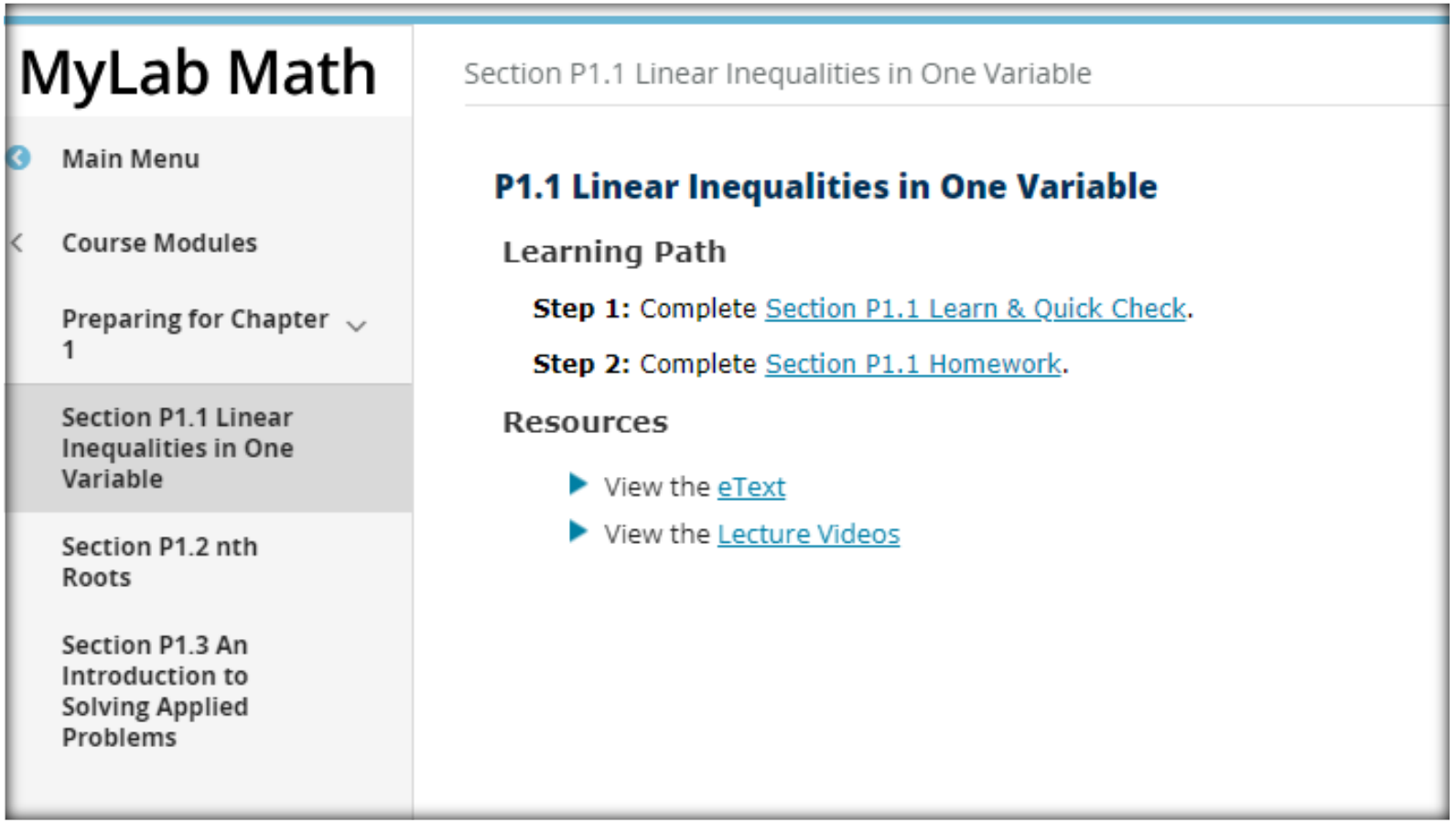
Preparing for Chapter 1 Learning Path



How-To Exercise

Section PF.1 | **Objective:** Solve linear equations.
Availability: Homework, Study Plan
Origin: Publisher

Question Help

Solve the linear equation $\frac{m+1}{5}+\frac{2}{9}=\frac{8m-1}{45}$.

Step-by-Step Solution

Begin solving this linear equation by rewriting it without fractions. Do this by multiplying both sides of the equation by the least common denominator (LCD). The LCD is 45.

Step 1: Remove all parentheses using the Distributive Property.

$$45\left(\frac{m+1}{5}+\frac{2}{9}\right)=45\left(\frac{8m-1}{45}\right)$$

$$45\cdot\frac{m+1}{5}+45\cdot\frac{2}{9}=45\cdot\frac{8m-1}{45}$$

Use the Distributive Property.

Multiply to simplify.

$\frac{m+1}{}$ $\frac{2}{}$ $\frac{8m-1}{}$

Question is complete. Tap on the red indicators to see incorrect answers.

All parts showing

Similar Question

Show completed problem | Work problem as student | Student to show work | **Question points:** 1 | Scoring options

Show Answer | Reload | Copy and Edit | Previous | Remove | Next

Classroom Activities (for *every* Corequisite Section)

Section PF.5 Activity: Solving Quadratic Equations by Completing the Square Puzzle

Focus: Solving quadratic equations by completing the square

Time: 20 - 30 minutes

Group Size: 2 – 4

Directions: Cut out the squares. Solve each of the equations by completing the square and then find the square that has its matching solutions. Arrange them so that touching edges are the solutions that match up to the equation. You're done when you've created a 3x3 square.

$x^2+13=-14x$ $\{5\}$ $2x^2-4=-7x$ $\{2,8\}$	$\{-7+2\sqrt{3},-7-2\sqrt{3}\}$ $\{-9,1\}$ $\{1,2\}$ $x^2=x+20$	$\{4,6\}$ $\{-4,7\}$ $\{0\}$ $x^2-10x=-16$
$x^2+8x-9=0$ $\left\{-\frac{3}{2},\frac{7}{2}\right\}$ $\{-1,-13\}$ $2d^2-7d+3=0$	$\{2-5\sqrt{6},2+5\sqrt{6}\}$ $\left\{-4,-\frac{1}{2}\right\}$ $\{-7,7\}$ $\{-5,8\}$	$y^2=4y+146$ $\{-1,17\}$ $\{-3,3\}$ $4x^2=8x+21$
$y^2-3y-28=0$ $\left\{\frac{1}{2},3\right\}$ $\{8\}$ $\{3-2\sqrt{3},3+2\sqrt{3}\}$	$x^2-6x-3=0$ $\{-1,1\}$ $\{0,2\}$ $x^2+14x+37=0$	$x^2=16x+17$ $\{2,3\}$ $\{-4,5\}$ $\{-2,2\}$

Classroom Activity

✓ **Previous Card Answer:** $(x+2)(x-5)$

Factor by Grouping:

$$14x^2+16x-21x-24$$

Card 6

✓ **Previous Card Answer:** $(7x+8)(2x-3)$

Factor by Grouping:

$$21x^2-28x+6x-8$$

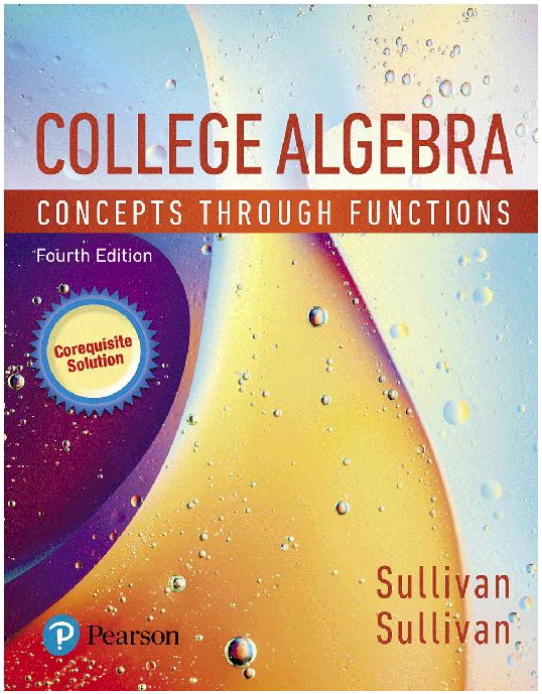
Card 8

Aligning Corequisite & College Algebra Content

Co-Requisite Section Completed before...	...College Algebra Section
Chapter P Elementary Algebra Review	Any College Algebra material
Section PF.1	Section F.1
Sections PF.2 through PF.4	Section F.2
Section PF.5	Section F.4
Section P1.1	Section 1.1
Section P1.2	Section 1.3
Section P1.3	Section 1.7
Sections P2.1 through P2.3	Section 2.3
Section P2.4	Section 2.7
Section P2.5	Section 2.8
Sections P3.1 and P3.2	Section 3.2
Section P3.3	Section 3.4
Sections P3.4 through P3.6	Section 3.5
Sections P4.1 and P4.2	Section 4.3
Section P4.3	Section 4.6
Sections P4.4 and P4.5 are optional and included for completeness of the discussion of radicals	

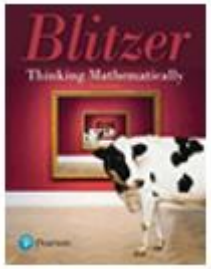
College Algebra Content

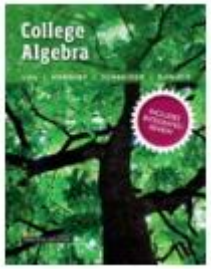
- **Lecture videos (objective-level)**
- **Guided lecture notes (for students)**
- **Projects (in the etext)**
- **Chapter Tests w/ video solutions (in the etext)**
- **Mini Lecture notes (for instructors)**
  - Accessible PPT lectures

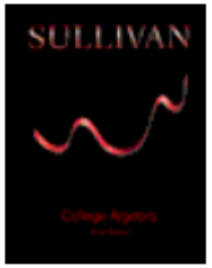


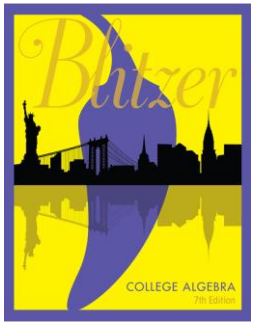
Integrated Review

- **Additional perequisite content in MyLab Math course**
  - Does *not* change ISBN
- **Skills Check Test & Personalized Review Homework**

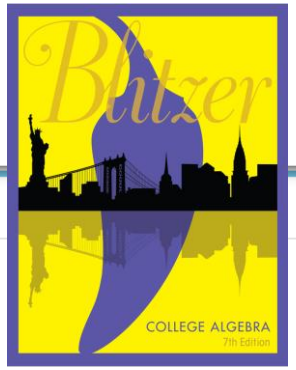








Integrated Review



MyLab Math

- Main Menu
- Chapter Contents
- Chapter 2
- Integrated Review
- Section 2.1
- Section 2.2
- Section 2.3
- Section 2.4
- Mid-Chapter Check Point
- Section 2.5
- Section 2.6
- Section 2.7
- Section 2.8
- Summary
- Review Exercises
- hapter 2 T

Integrated Review

Chapter 2 Integrated Review

Skills Check

Start by taking the Chapter 2 Skills Check. If you master the Skills Check, move on to the next section. If not, proceed to the Skills Review Homework below.

Skills Review

Complete your personalized Chapter 2 Skills Review Homework. For additional help, review the Learning Objectives listed below.

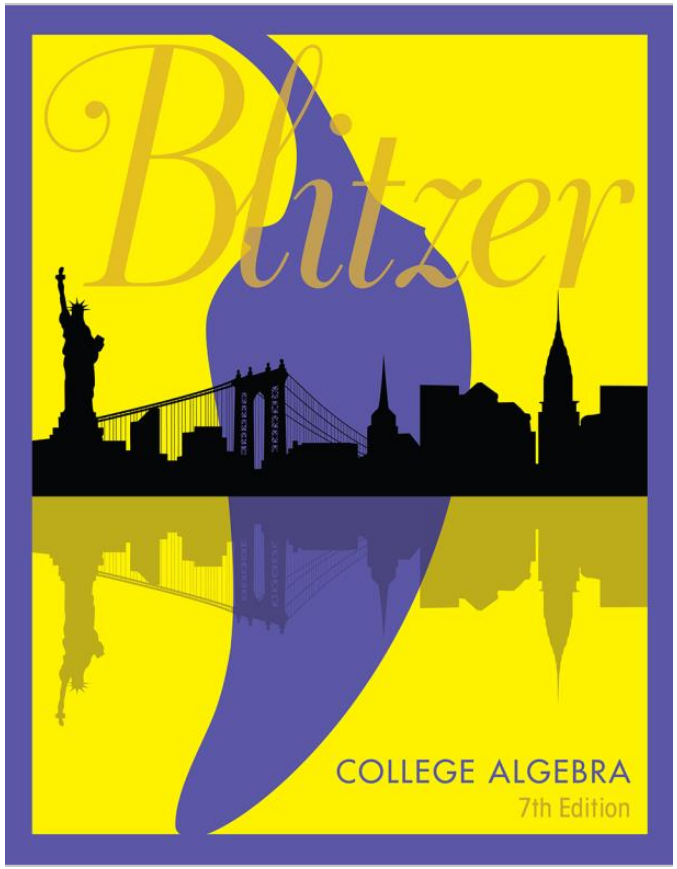
Learning Objectives

For any objectives you may still need to master, use the Integrated Review videos and worksheets below for extra help and practice.

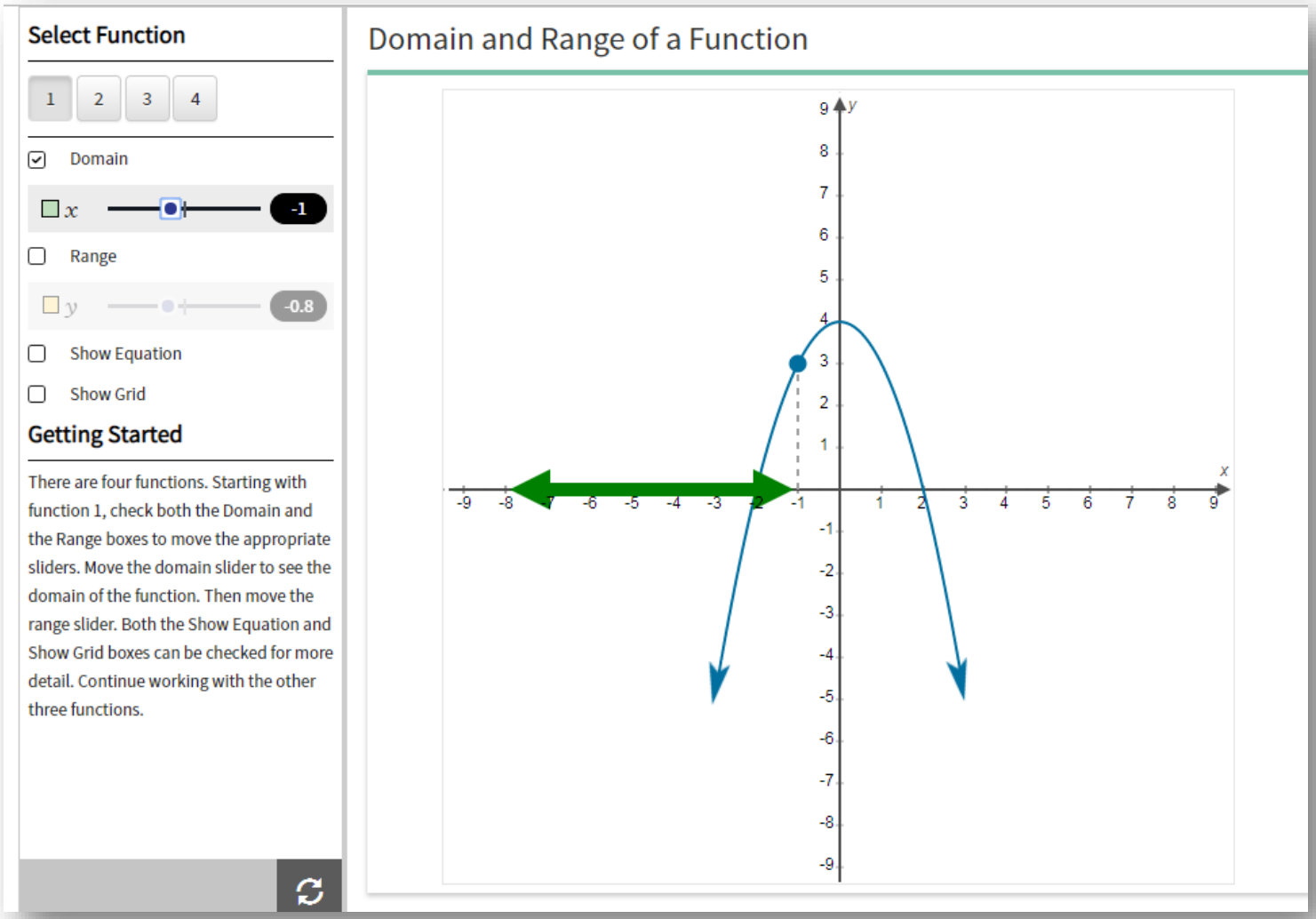
Recognize the sets that make up the real numbers and use set notation.	Video	Integrated Review Worksheet
Use the symbols for "is an element of" and "is not an element of."	Video	Integrated Review Worksheet
Use inequality symbols.	Video	Integrated Review Worksheet
Find a number's absolute value.	Video	Integrated Review Worksheet
Evaluate exponential expressions.	Video	Integrated Review Worksheet
Use the order of operations.	Video	Integrated Review Worksheet
Simplify algebraic expressions.	Video	Integrated Review Worksheet
Use the power rule.	Video	Integrated Review Worksheet
Find the power of a product.	Video	Integrated Review Worksheet
Add [illegible]omials.	Video	Integrated Review Works[illegible]
		In[illegible]

College Algebra Content

- Lecture videos (objective-level)
- Learning guide (for students)
- Guided Visualization Questions w/ Explorations Activities
- MathTalk Videos
  - Math Talk Video Instructor's Guide
- Chapter Tests w/ video solutions (in the etext)



Guided Visualizations



Math Talk Video

Video 1: Introduction to MathTalk

Summary

In this video, the concepts of linear equations and their graphs are introduced. We show the process of creating a line by plotting the average temperature for six months in Chicago. The line allows the presenter to derive the formula that shows the temperature increasing by an average of ten degrees each month. The process of creating these types of formulas from a set of data is called modeling. The presenter explains that formulas can be applied to real-world examples such as a doctor calculating the risk for cancer or an engineer calculating how best to build a bridge.

Use

This video can be used to introduce the topic of linear equations because it discusses how to plot points from an equation as well as how to attain a formula from a set of data.

Class discussion questions

1. What other types of careers can you think of that use formulas in their work? Give an example. *You can use this to introduce any formulas that you may use in work such as an instructor curving a test grade.*

2. Within the video, the presenter mentions that all the formulas in textbooks have real uses. For example, both the x and y values could mean something like cancer or the protein in the blood. What other equations can you think of that most people use in everyday life? *This question can help students connect the concept of linear equations to their own lives. A good example is the money spent on a car every month, y=$3.45x+$200 with x being the miles driven, $3.45 being the price of gas, and $200 representing the car payment.*

3. Do all equations with a real life meaning have to be connected straight lines? What examples can you think of which demonstrate either a connected or disconnected line? *This can provide the opportunity to discuss step or piecewise functions.*

4. The presenter mentions that saying, "December would be 130 degrees" is called extrapolation. What do you think he means by extrapolation? *This is a good way to bring up any additional topics that students may see when modeling linear equations.*

Building your corequisite course

Personalized Homework

- Linked to a quiz or test
- Students given credit in HW for mastered objectives

Personalized Homework

Name: Section 1.1 Homework (Copy)

Last Worked: 10/01/18 10:13am

Current Score: 70.59% (12 points out of 17)

Attempts: Unlimited per question

* You received automatic credit (12 pts) for topics you mastered on Chapter 1 Pre-Test.

(•) All ( ) Show What I Need to Do

Questions: 17	Scored: 12	Correct: 12	Partial Credit: 0	Incorrect: 0

✓ Question 1 (1/1)	✓ Question 2 (1/1)	Question 3 (0/1)	Question 4 (0/1)
Question 5 (0/1)	✓ Question 6 (1/1)	✓ Question 7 (1/1)	Question 8 (0/1)
✓ Question 9 (1/1)	✓ Question 10 (1/1)	✓ Question 11 (1/1)	✓ Question 12 (1/1)
✓ Question 13 (1/1)	Question 14 (0/1)	✓ Question 15 (1/1)	✓ Question 16 (1/1)
✓ Question 17 (1/1)			

Personalized Homework: Ideas

- **Chapter/ Unit Pretest** personalizes homework
- **Quiz/ Test** personalizes review homework assignment

- Take a look:

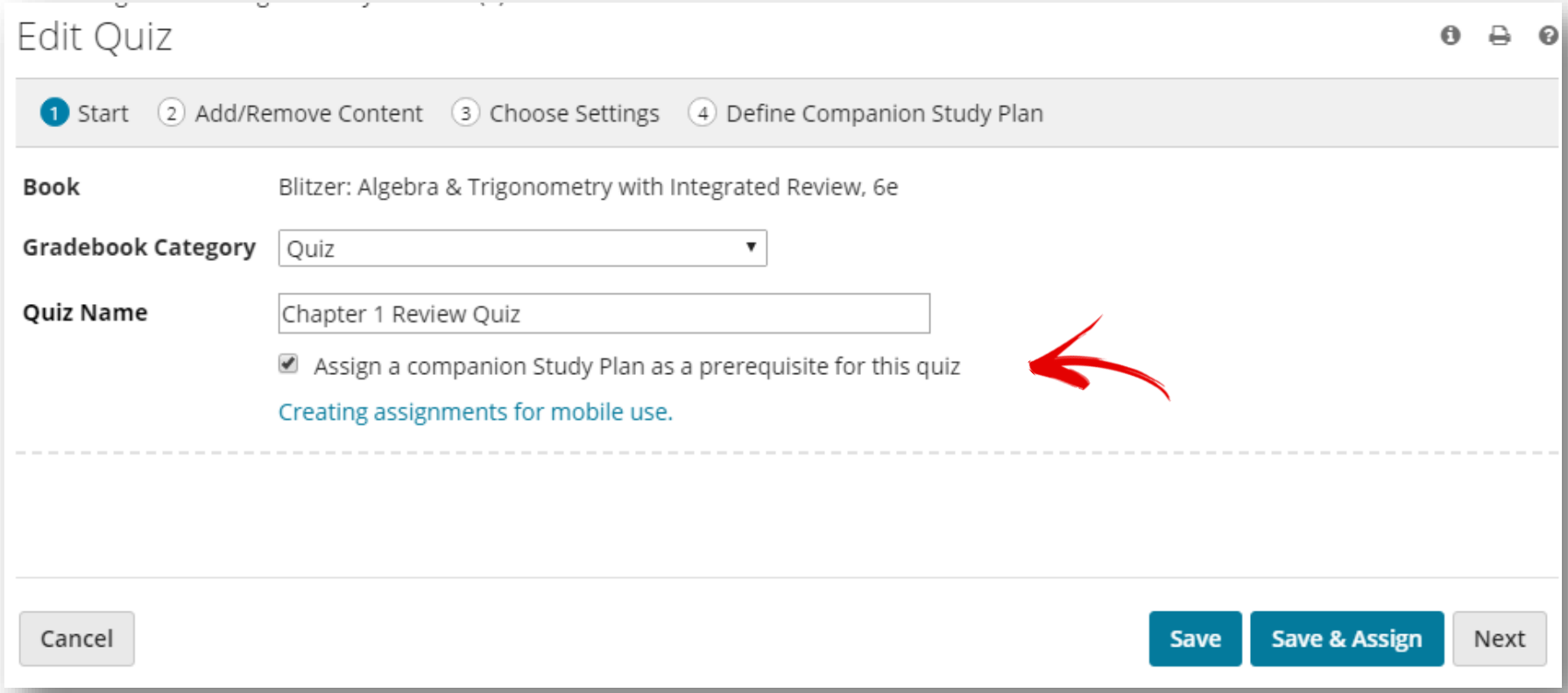
Spotlight on Personalized Homework in MyLab Math and Statistics

A review of pre/post course performance at six institutions who use Personalized Homework in MyLab, as documented in educator studies.

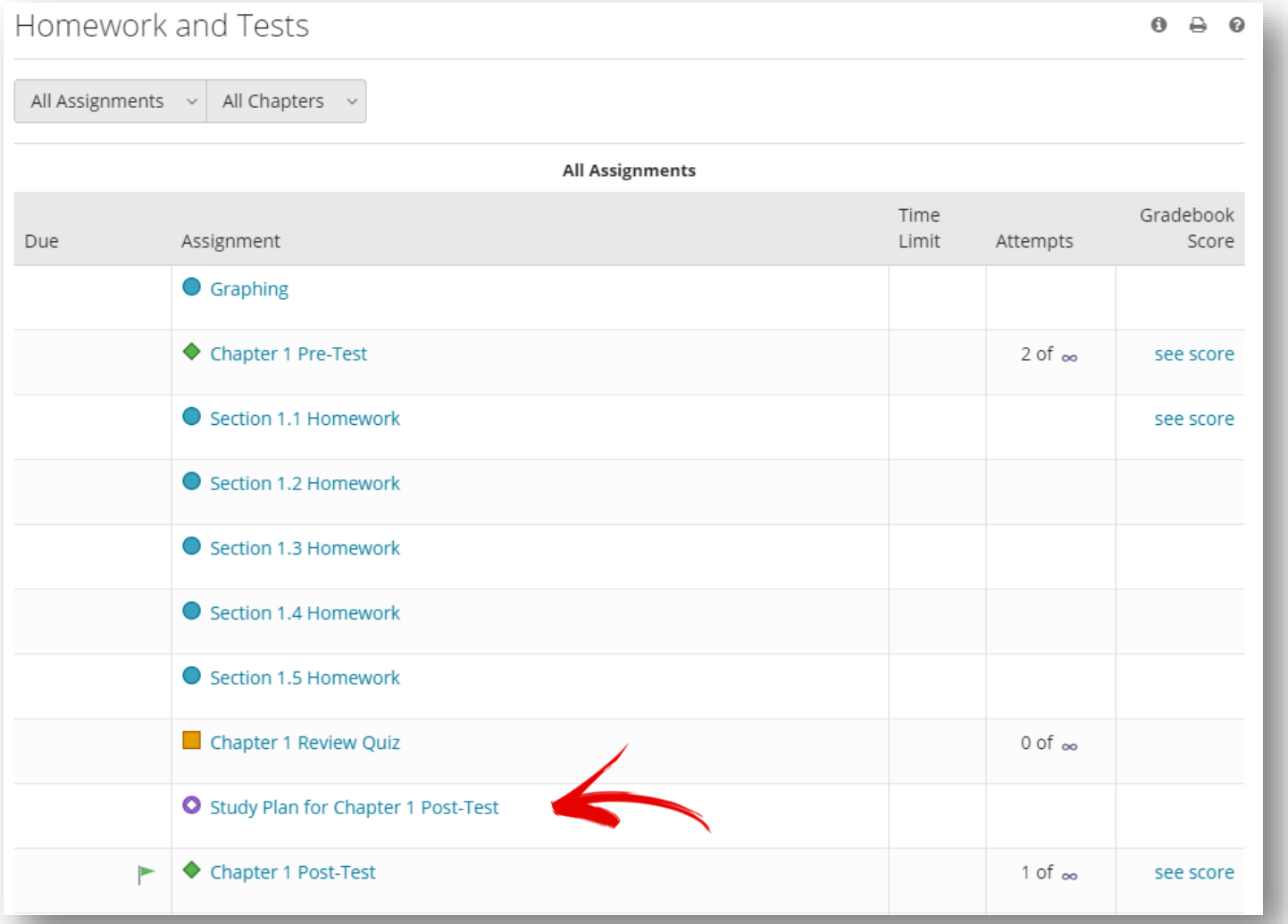
Companion Study Plan

- Study plan tied to a test/ quiz
- Mastery required prior to specified quiz/ test attempt

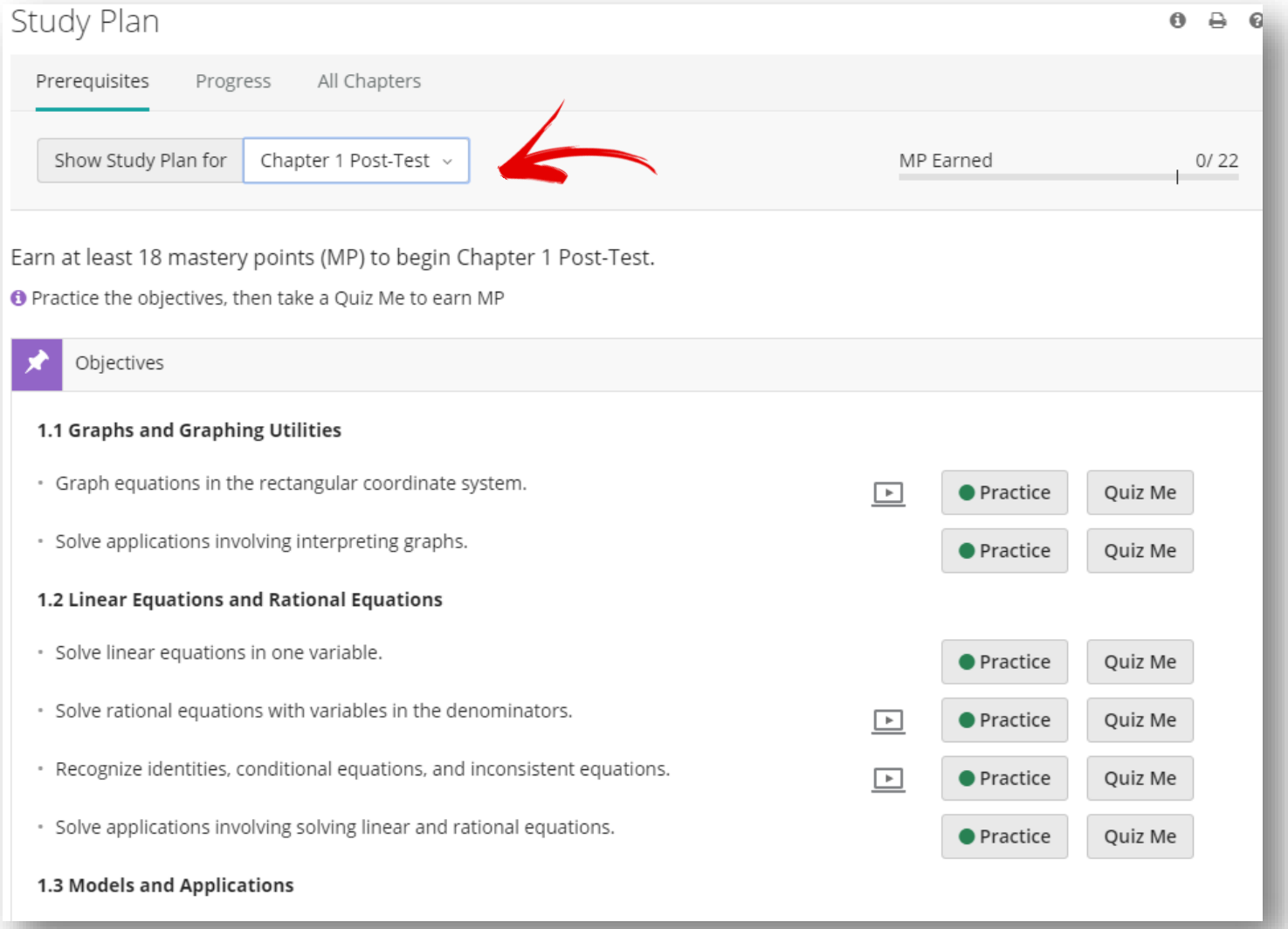
Companion Study Plan



Companion Study Plan



Companion Study Plan



Companion Study Plan: Ideas

- Remediation between quiz/ test attempts
- Homework replacement

- *Educator study: Impact of the Companion Study Plan in Developmental Math – B. Winchester, JF Drake State CC*

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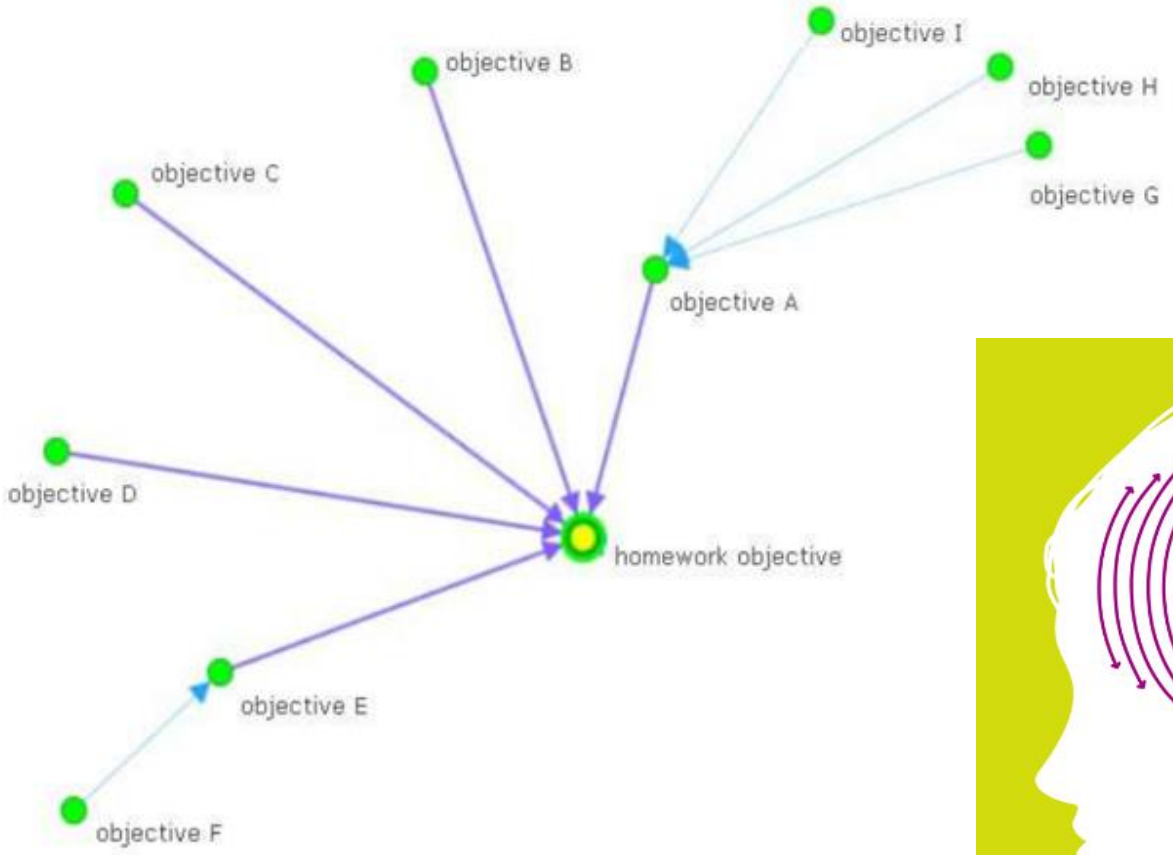

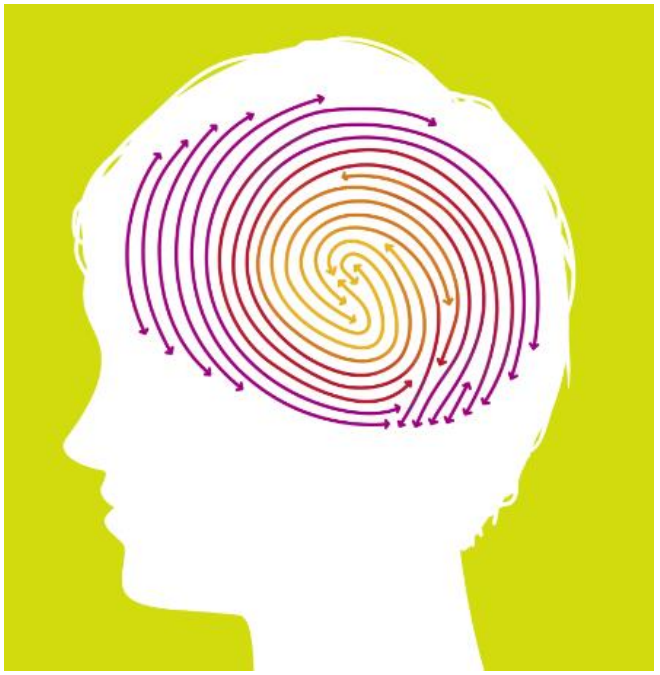

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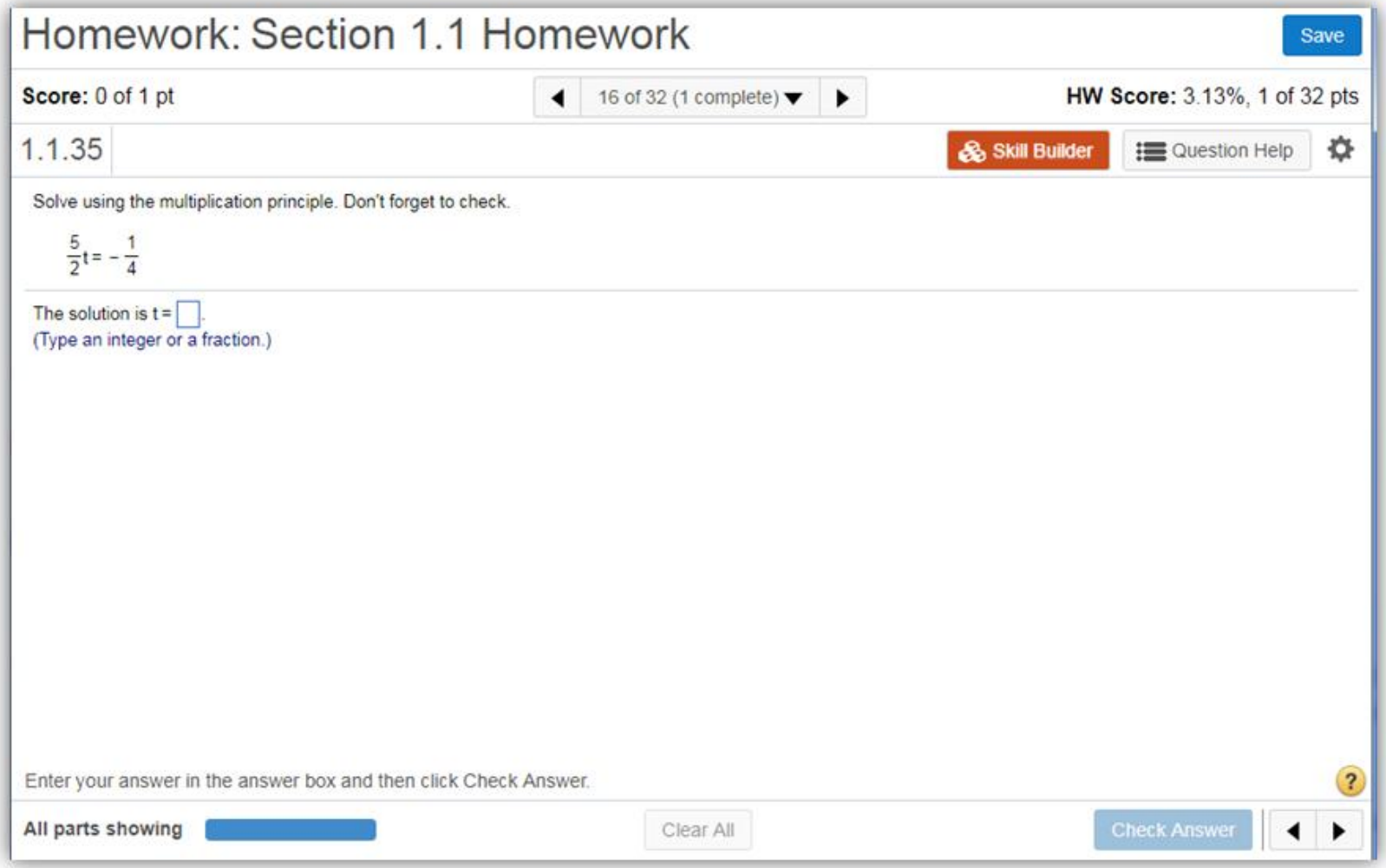

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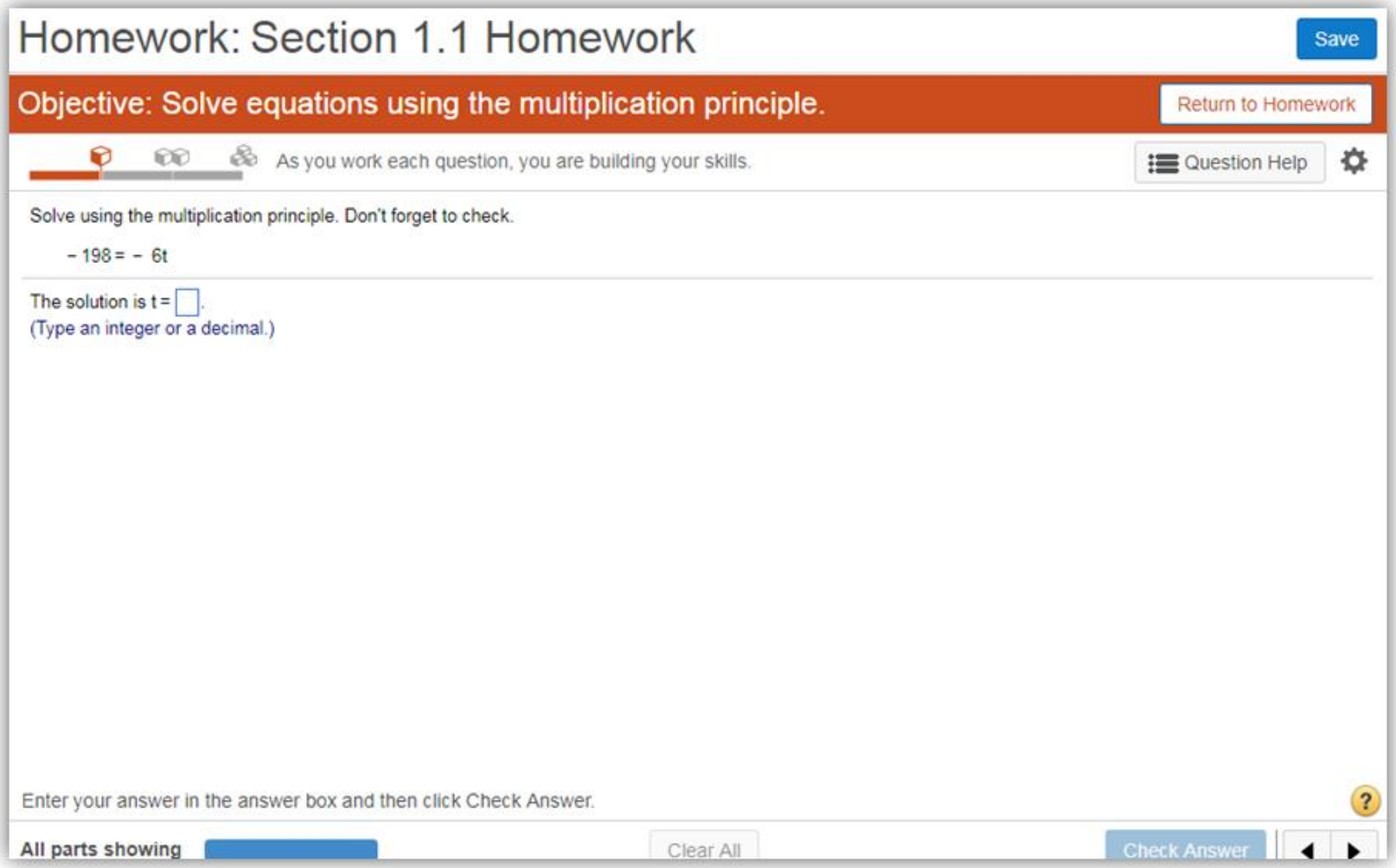

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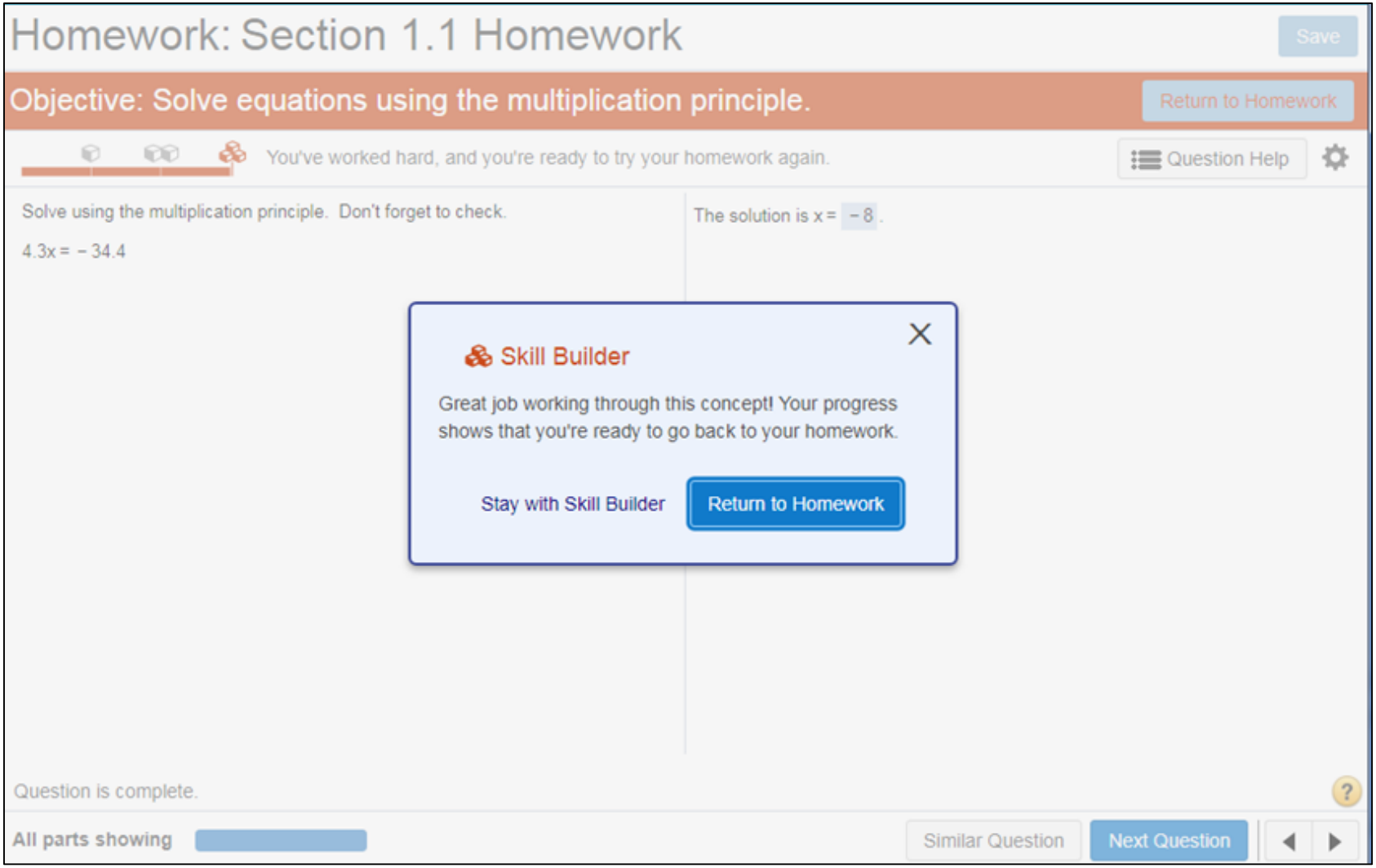

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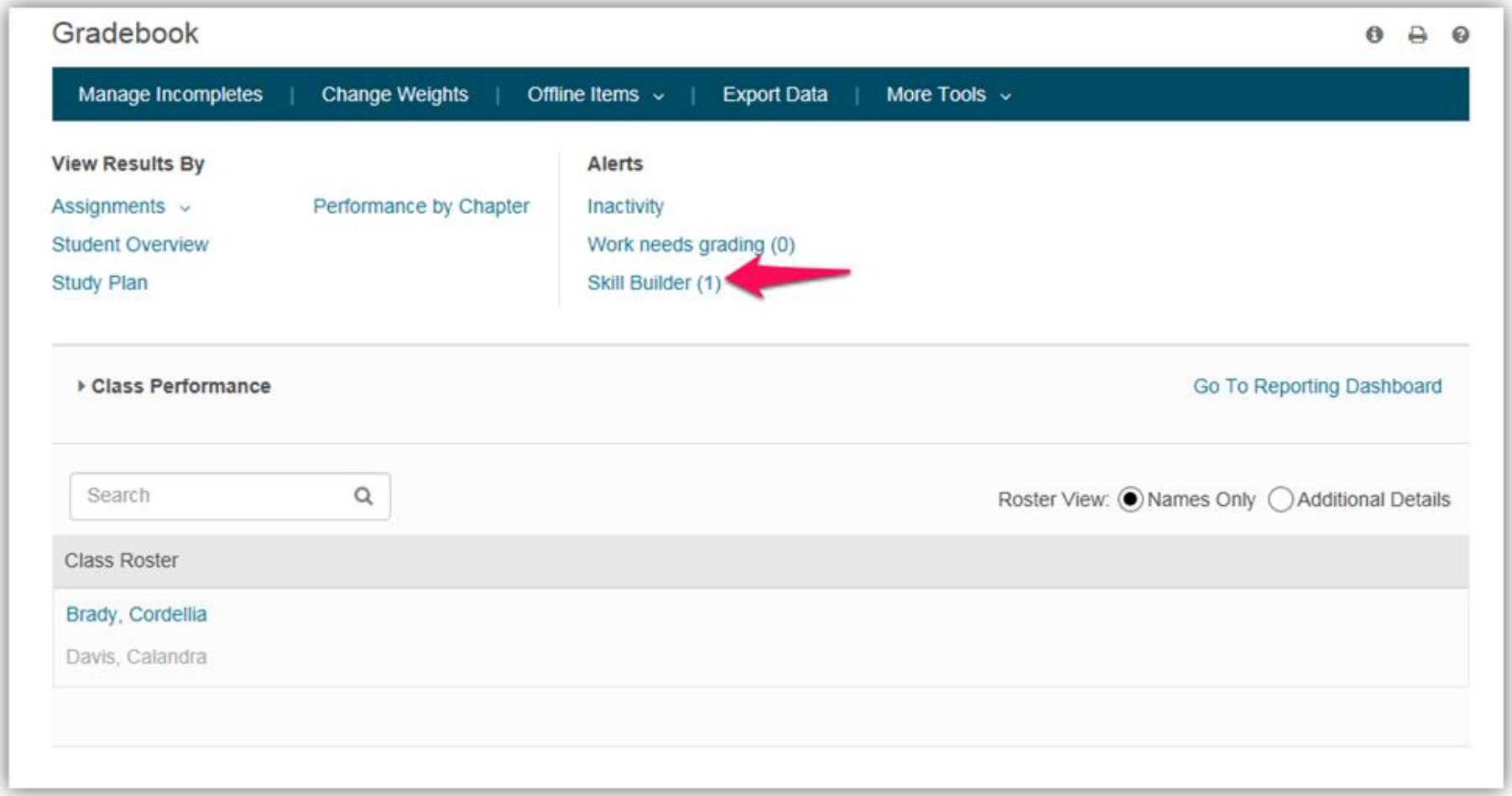

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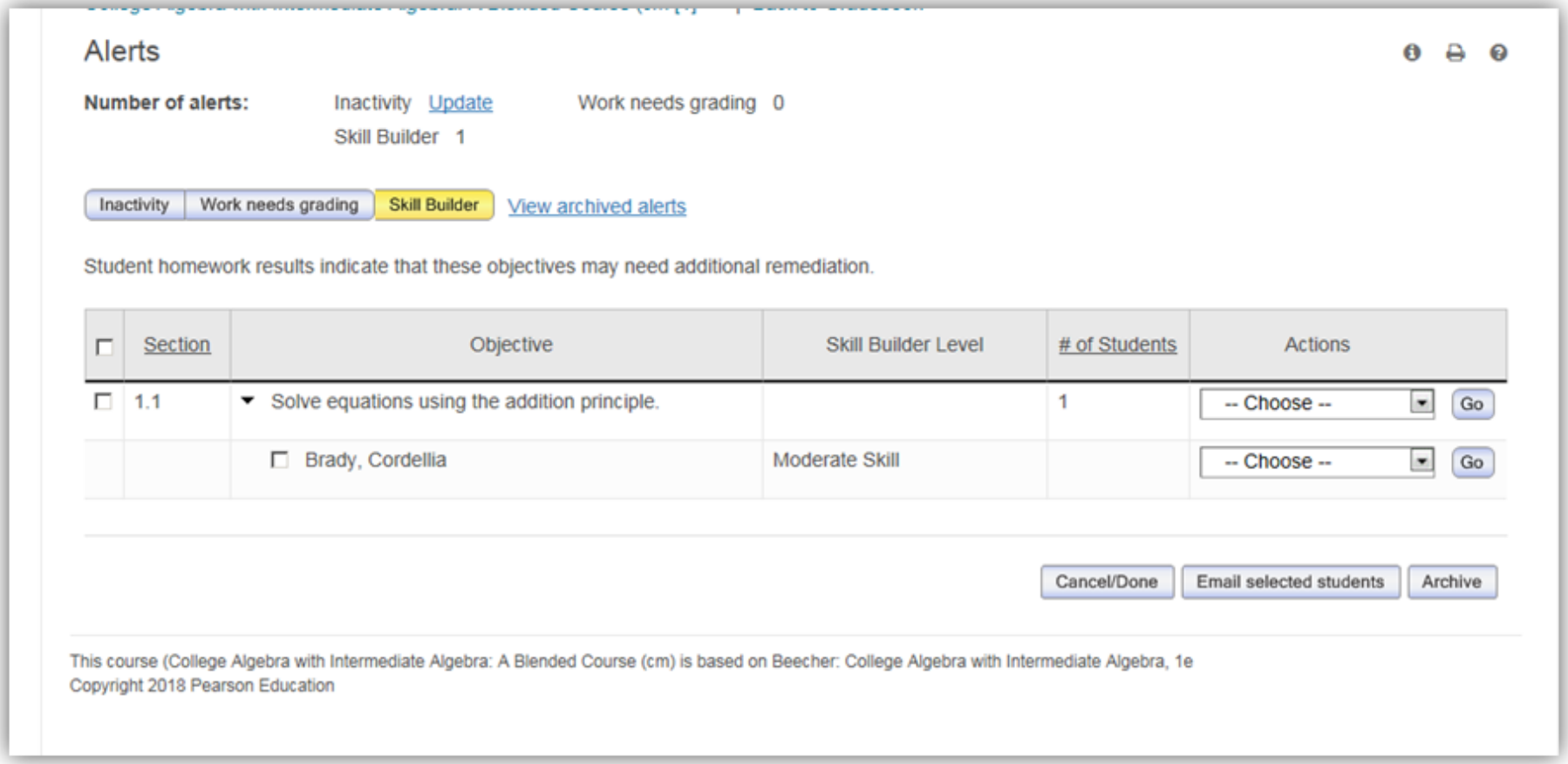
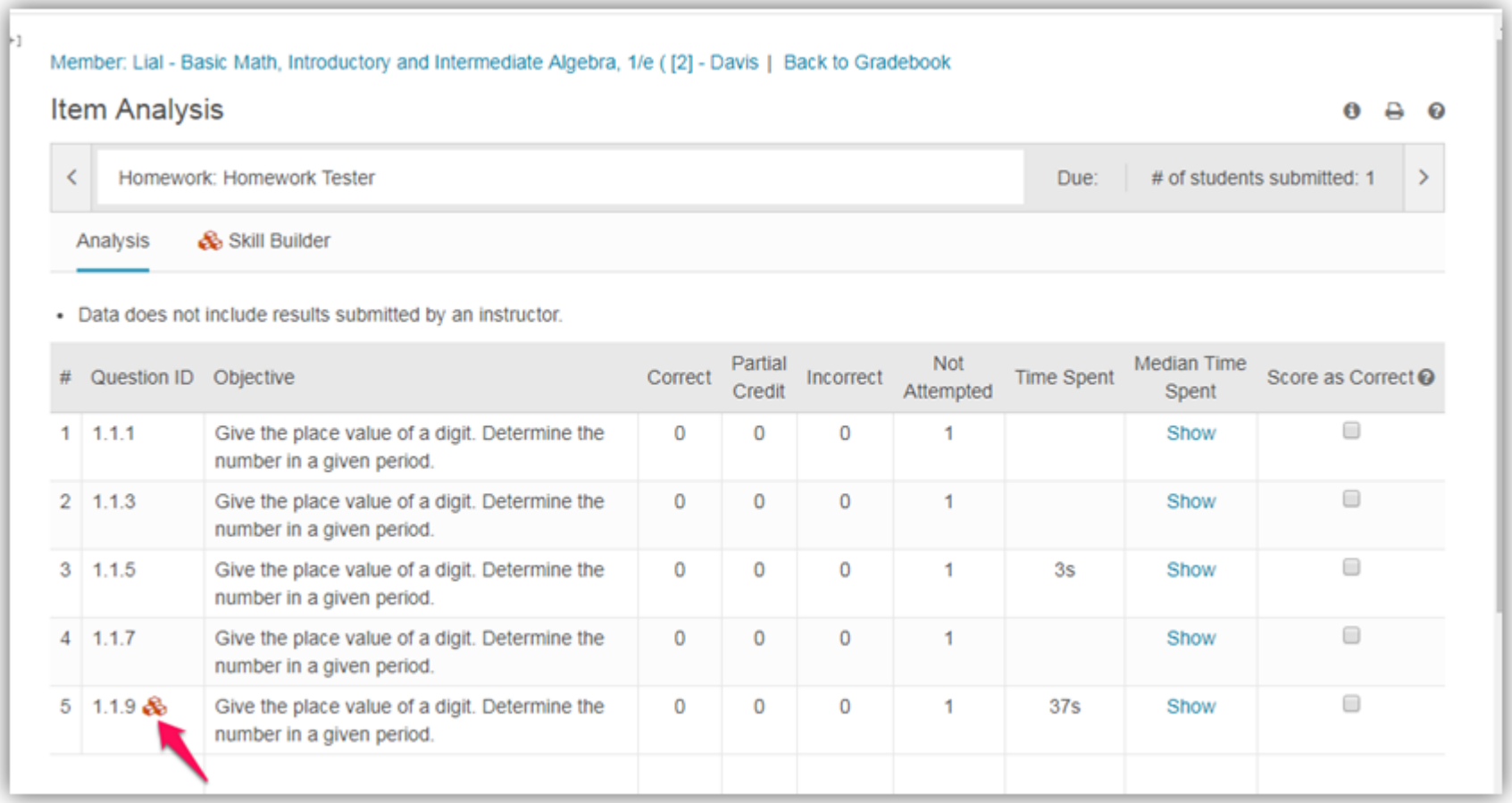


SkillBuilder



Member: Lial - Basic Math, Introductory and Intermediate Algebra, 1/e ([2] - Davis | Back to Gradebook

Item Analysis

Homework: Homework Tester | Due: | # of students submitted: 1

Analysis | Skill Builder

- Data does not include results submitted by an instructor.

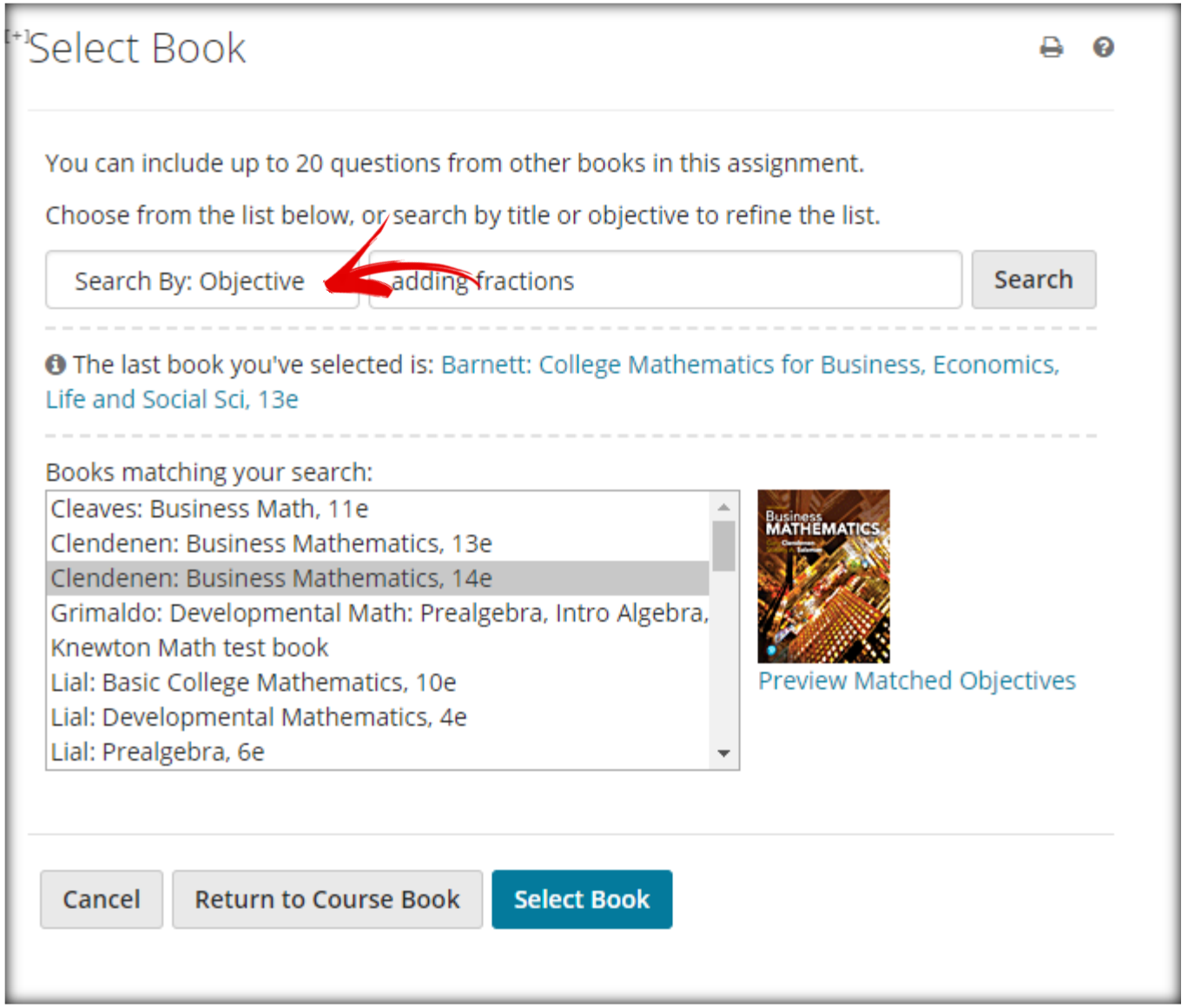
#	Question ID	Objective	Correct	Partial Credit	Incorrect	Not Attempted	Time Spent	Median Time Spent	Score as Correct
1	1.1.1	Give the place value of a digit. Determine the number in a given period.	0	0	0	1		Show	
2	1.1.3	Give the place value of a digit. Determine the number in a given period.	0	0	0	1		Show	
3	1.1.5	Give the place value of a digit. Determine the number in a given period.	0	0	0	1	3s	Show	
4	1.1.7	Give the place value of a digit. Determine the number in a given period.	0	0	0	1		Show	
5	1.1.9	Give the place value of a digit. Determine the number in a given period.	0	0	0	1	37s	Show	

Skill Builder: Ideas

- Give a diagnostic early on so there is data to draw upon
- Limit the learning aids available when SkillBuilder is implemented
- Limit assignment length to compensate for SkillBuilder remediation

Educator study: S. Gibbons, Hillsborough Community College

Search by Objective



Search by Objective

New

Select Book

You can include up to 20 questions from other books in this assignment.

Choose from the list below, or search by title or objective to refine the list.

Search By: Objective | adding fractions | Search

The last book you've selected is: Barnett: College Mathematics for Business, Economics, Life and Social Sci, 13e

Books matching your search:

- Cleaves: Business Math, 11e
- Clendenen: Business Mathematics, 13e
- Clendenen: Business Mathematics, 14e
- Grimaldo: Developmental Math: Prealgebra, Intro Algebra,
- Knewton Math test book
- Lial: Basic College Mathematics, 10e
- Lial: Developmental Mathematics, 4e
- Lial: Prealgebra, 6e

Preview Matched Objectives

Matched Objectives

Chapter 2: Fractions

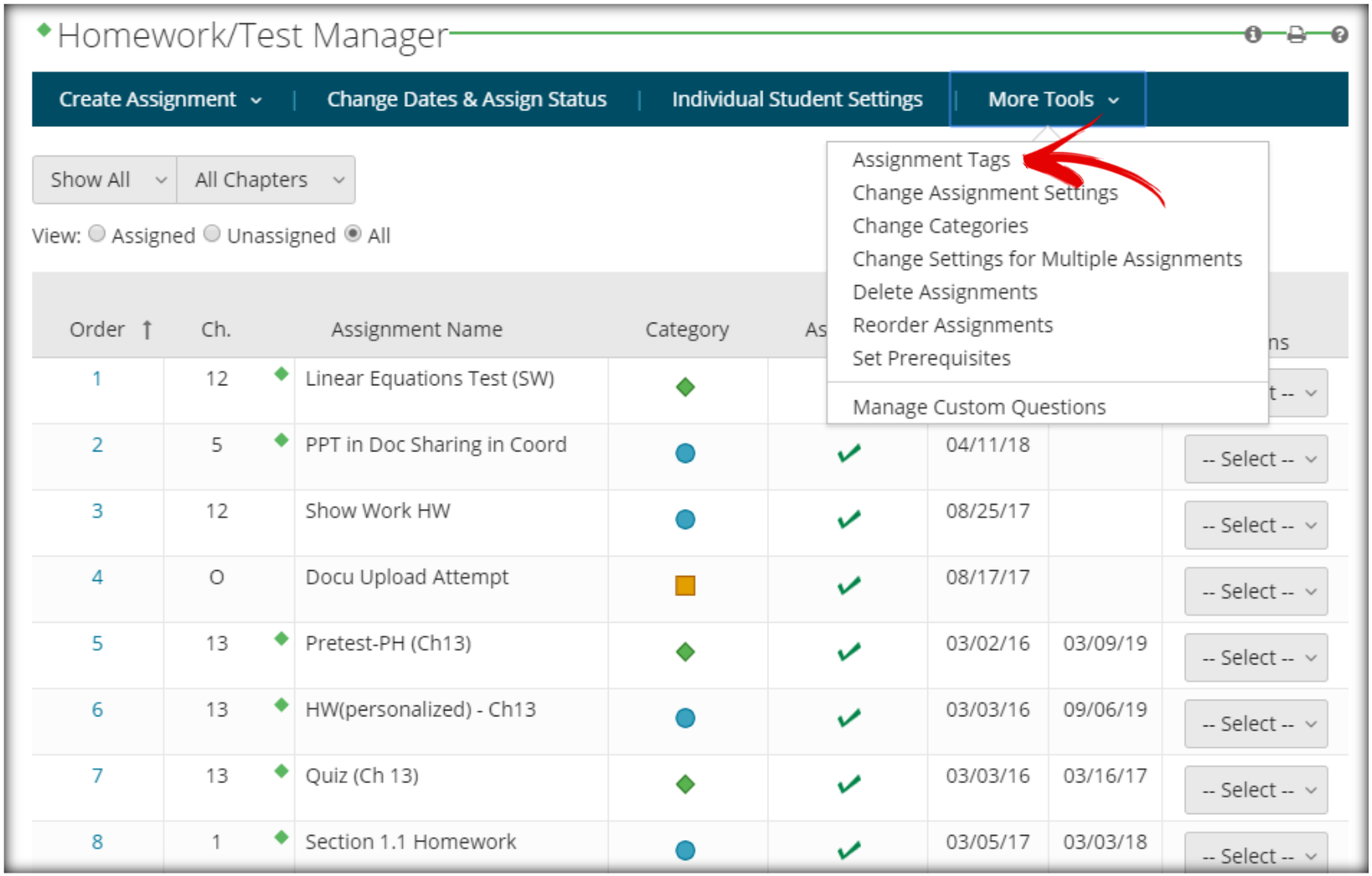
Section 2.2: Addition and Subtraction of Fractions

Objective: Solve application problems involving adding and subtracting fractions. s.

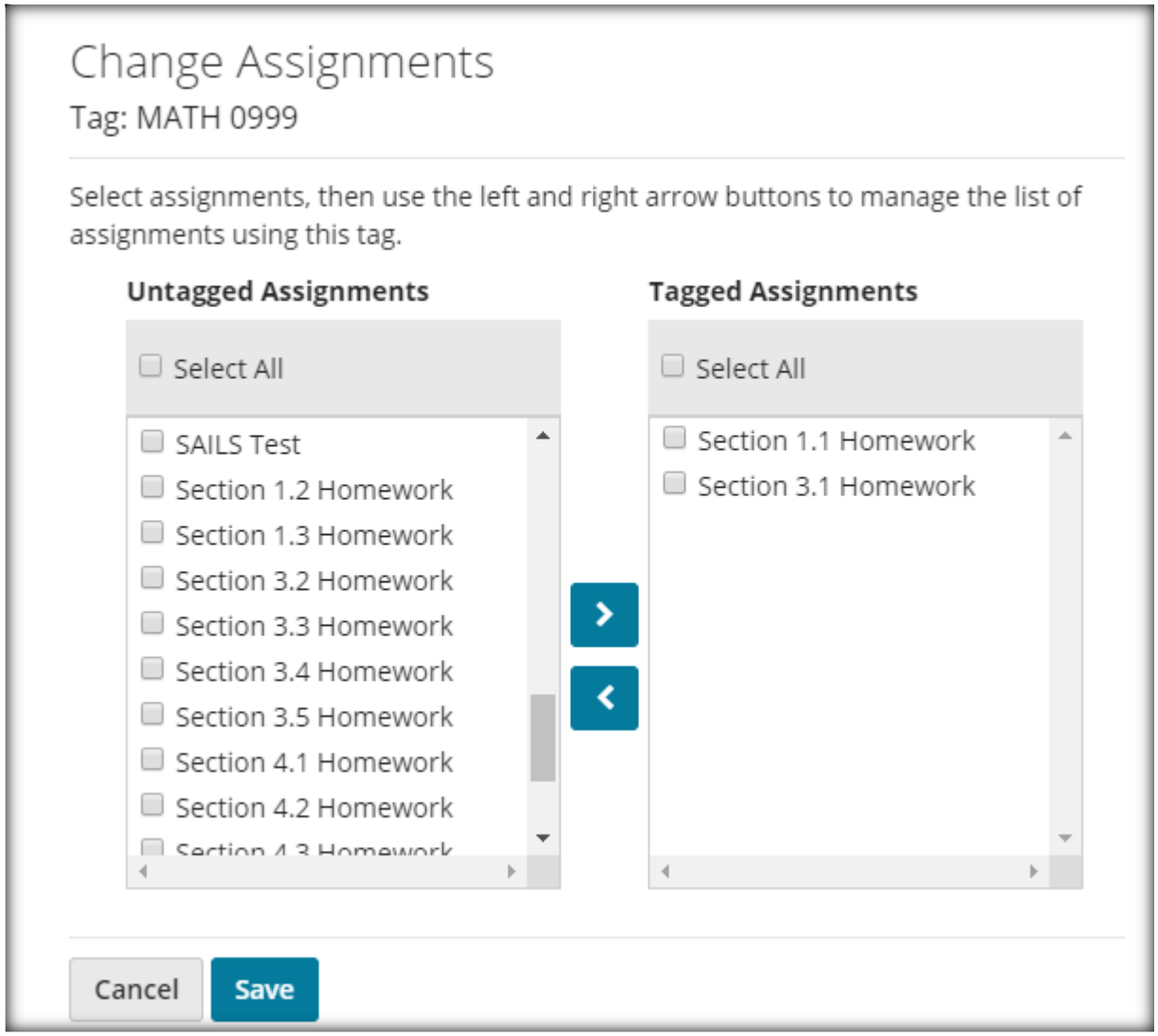
Cancel | Return to Course Book | Select Book

Assignment Tags

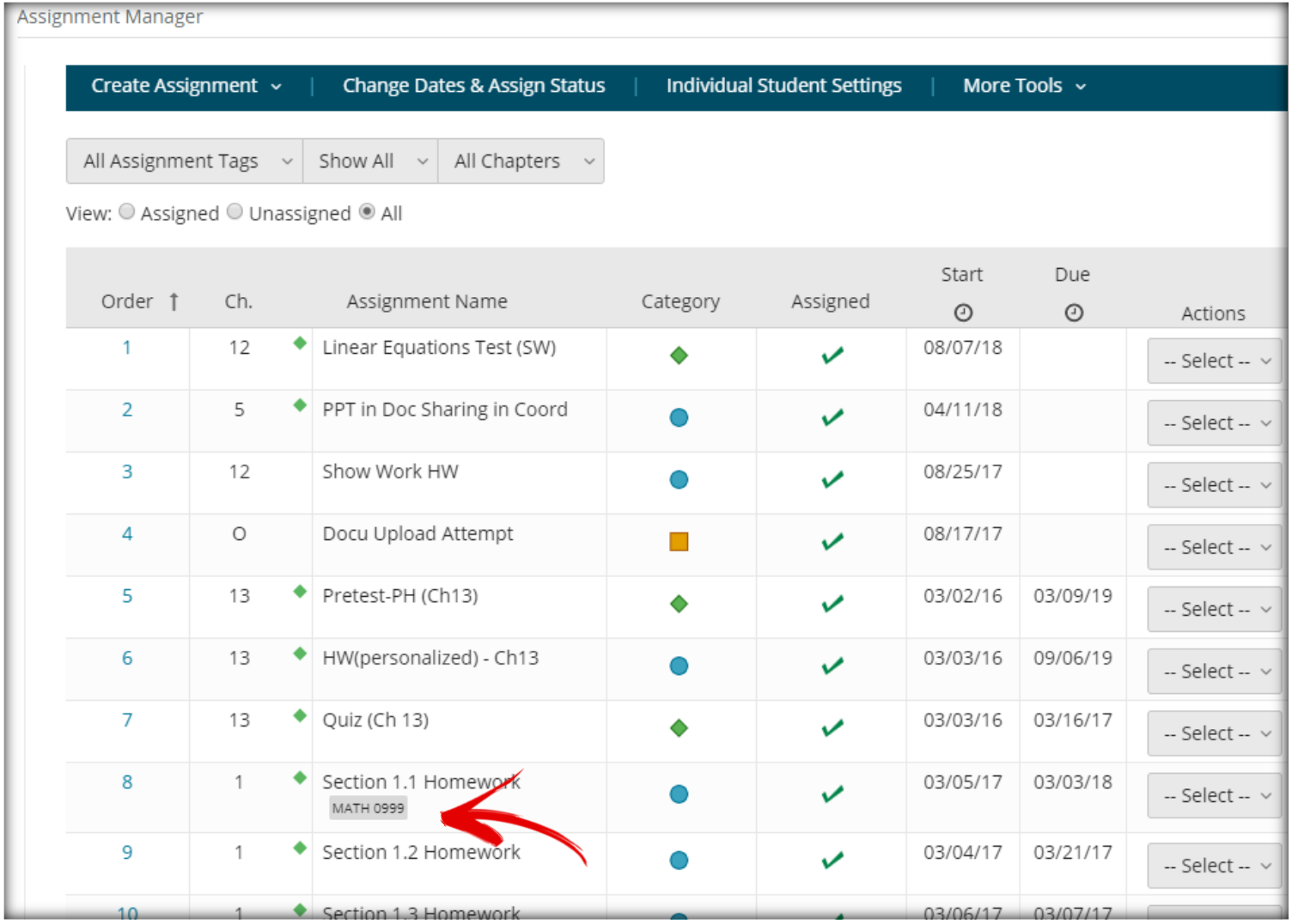
New



Assignment Tags New

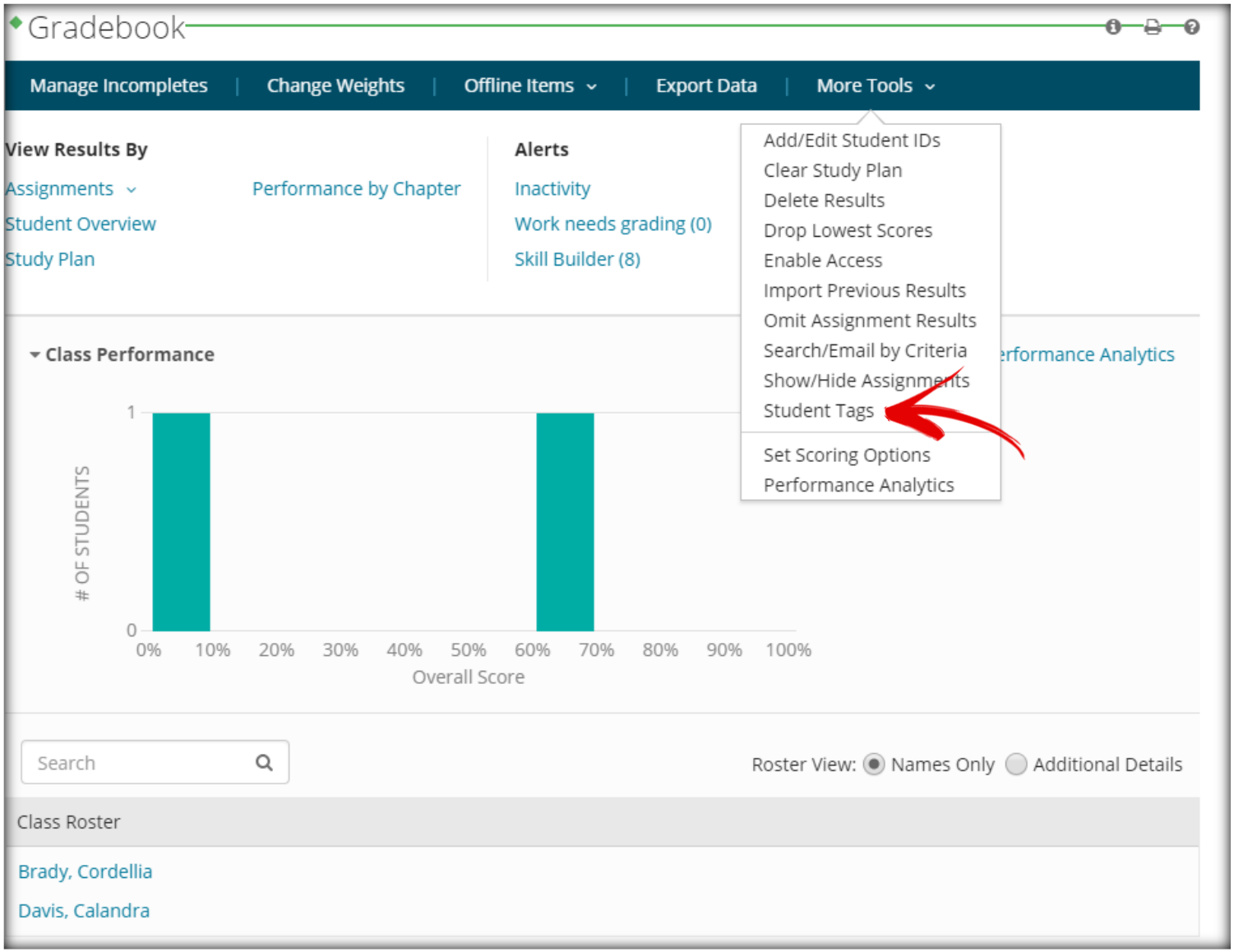


Assignment Tags New



Student Tags

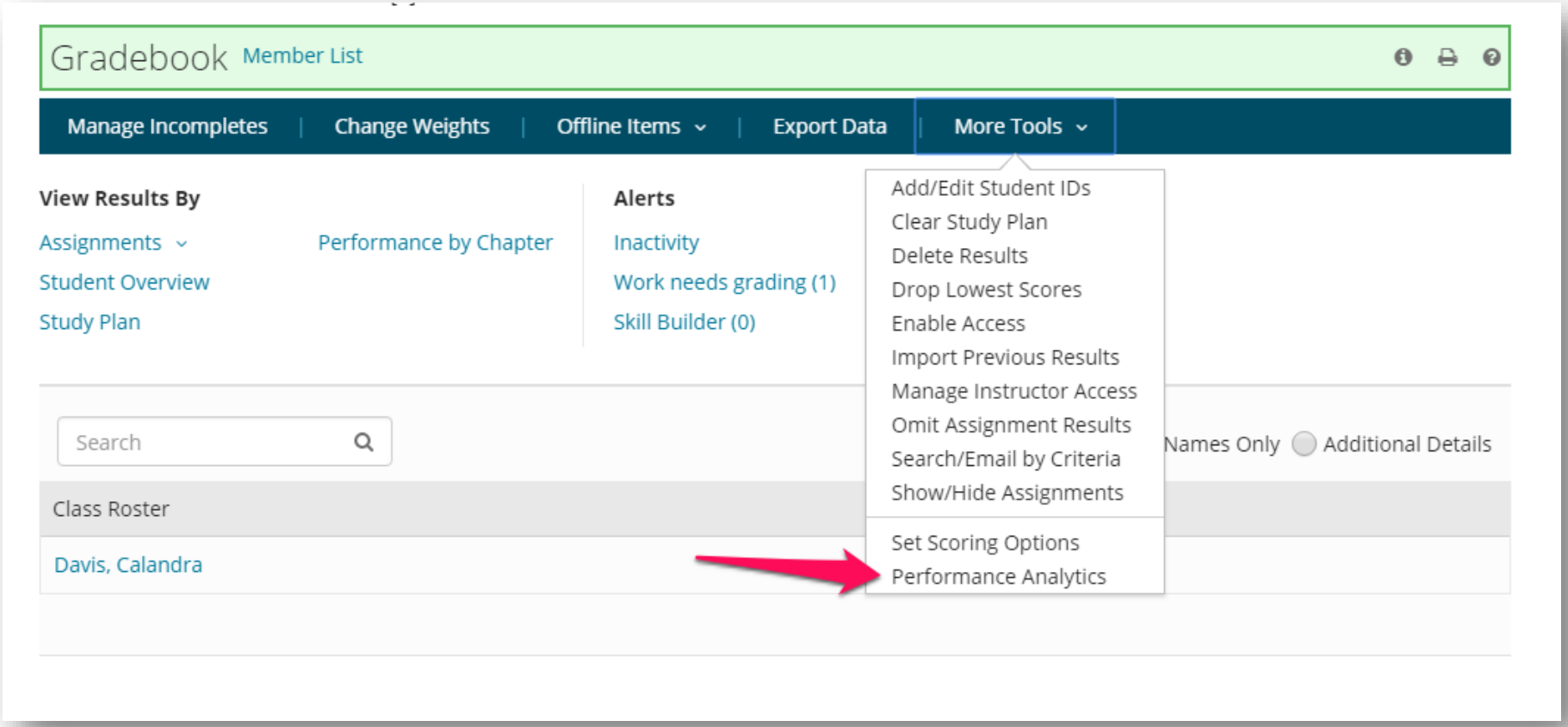
New



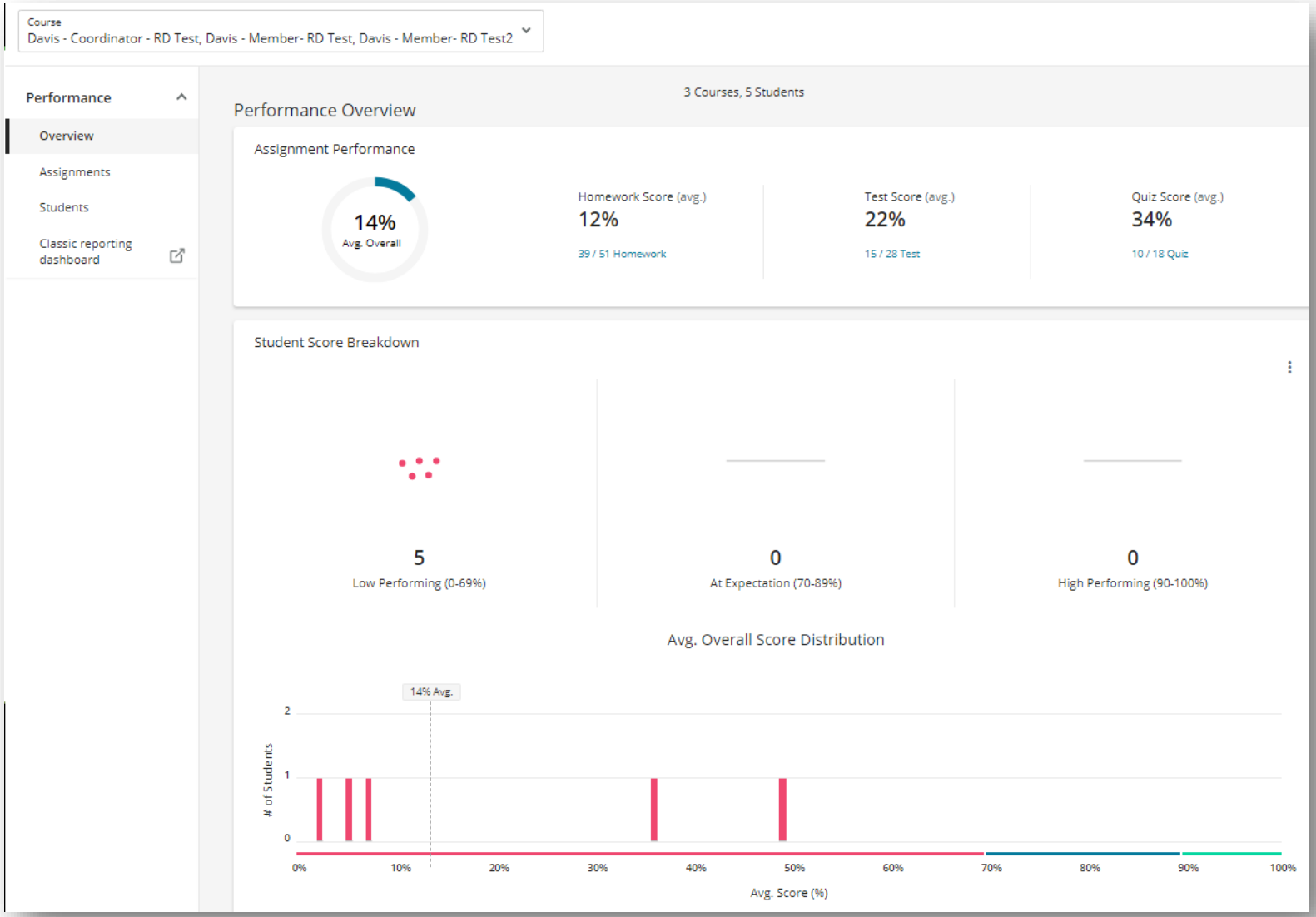
Monitoring Student Progress

- Performance Analytics Dashboard
- Item Analysis
- Alerts
- Search/ Email by Criteria
- Quick/ Advanced Export
- Proctor U

Performance Analytics



Performance Analytics



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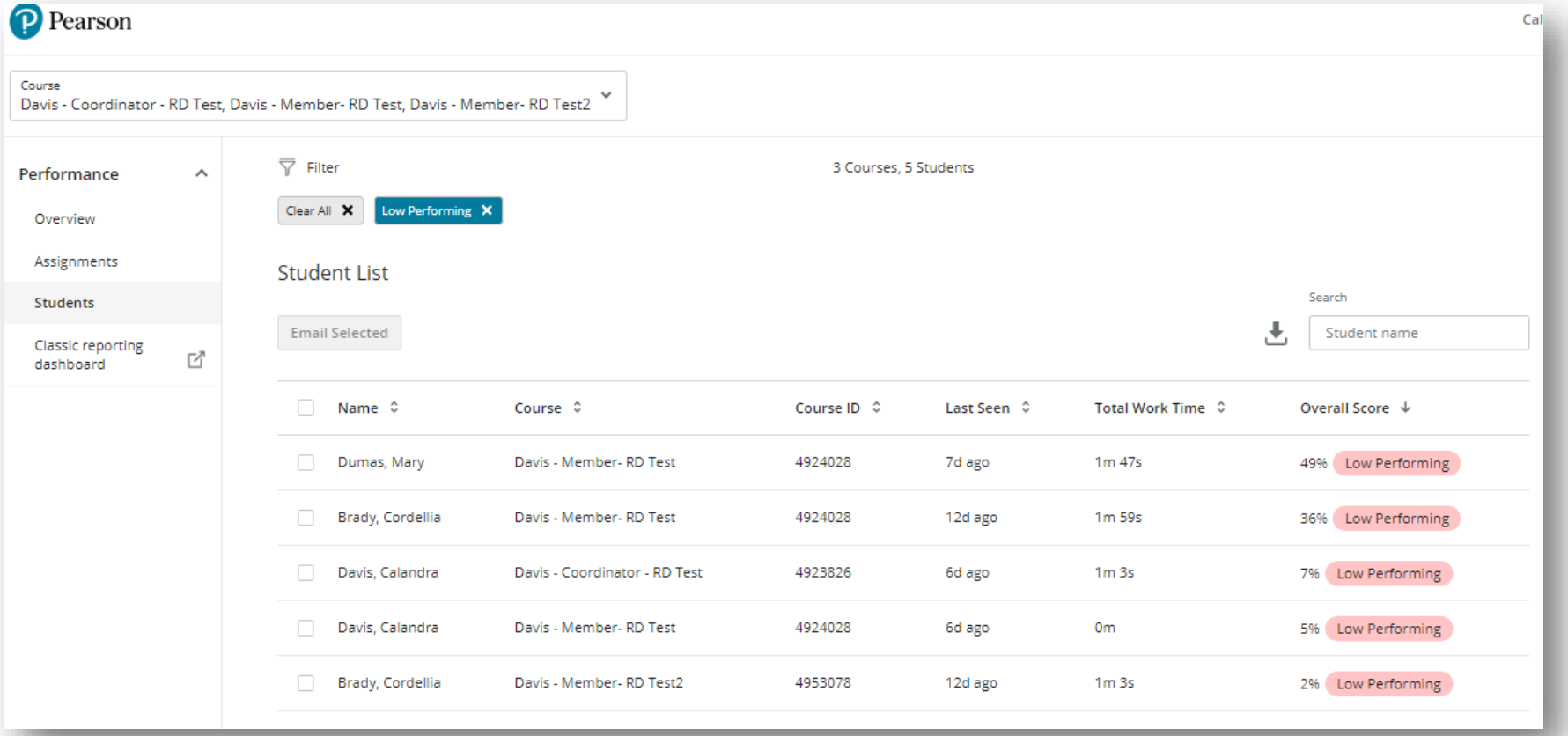

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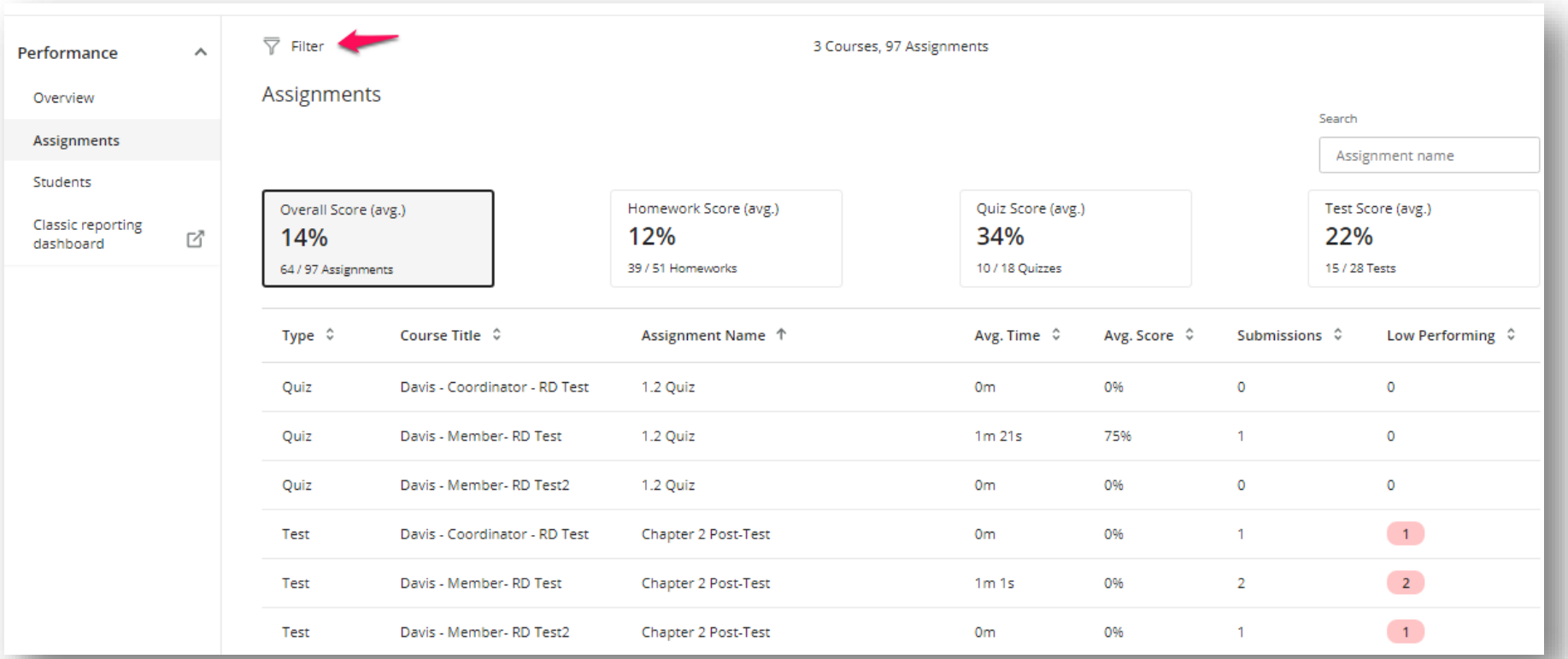
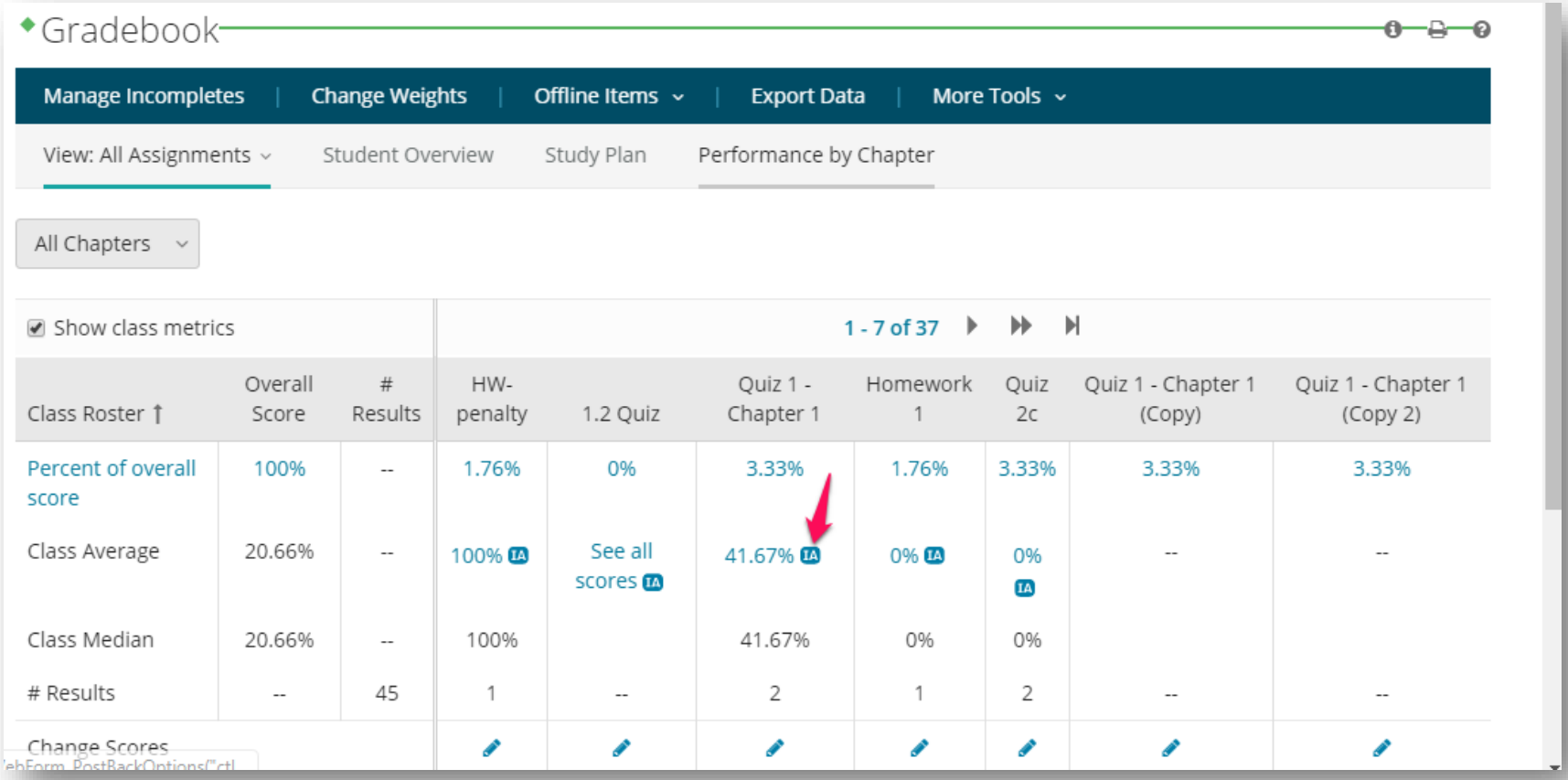
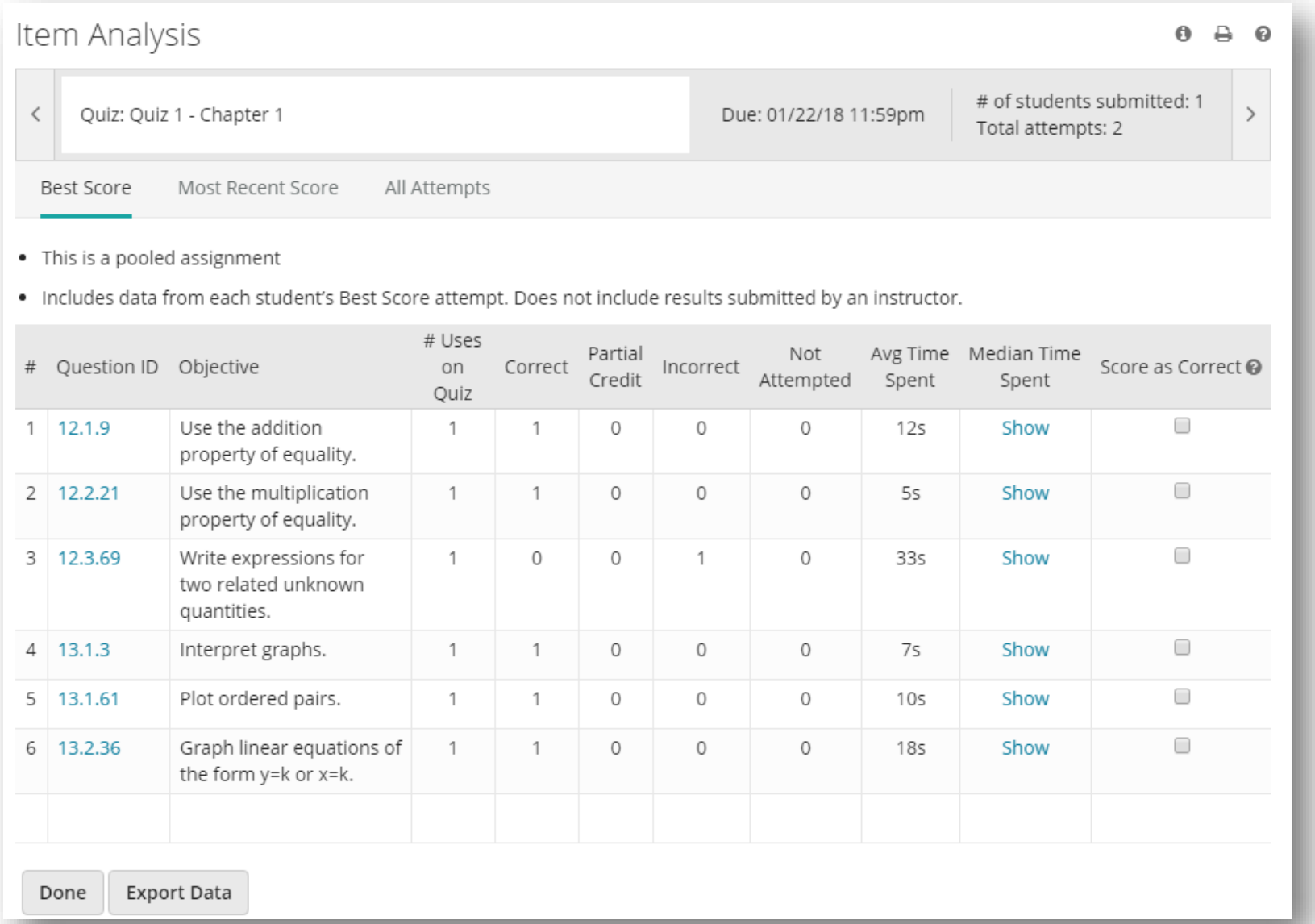


Item Analysis



Item Analysis



Item Analysis

Quiz: Quiz 1 - Chapter 1 | Due: 01/22/18 11:59pm | # of students submitted: 1 Total attempts: 2

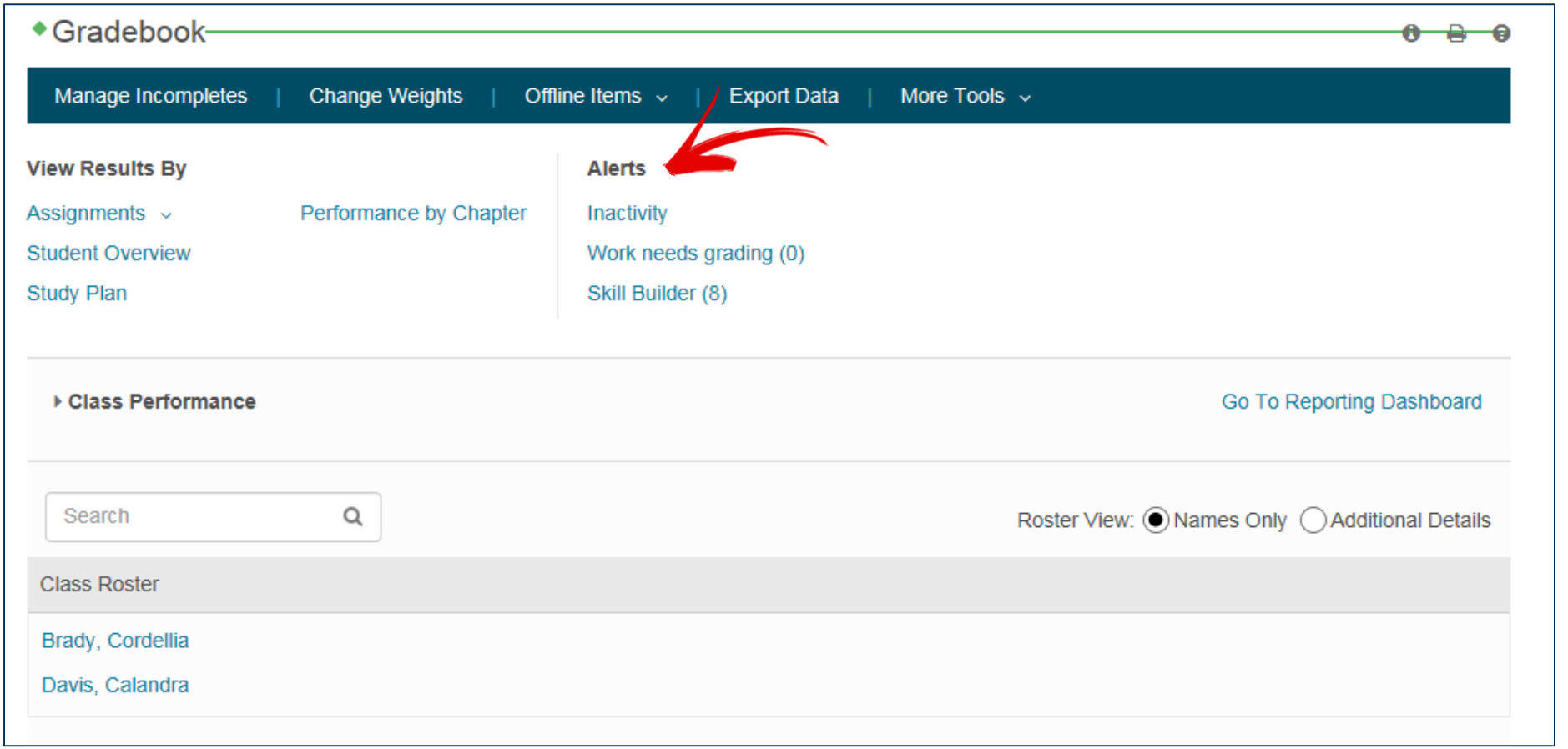
Best Score | Most Recent Score | All Attempts

- This is a pooled assignment
- Includes data from each student's Best Score attempt. Does not include results submitted by an instructor.

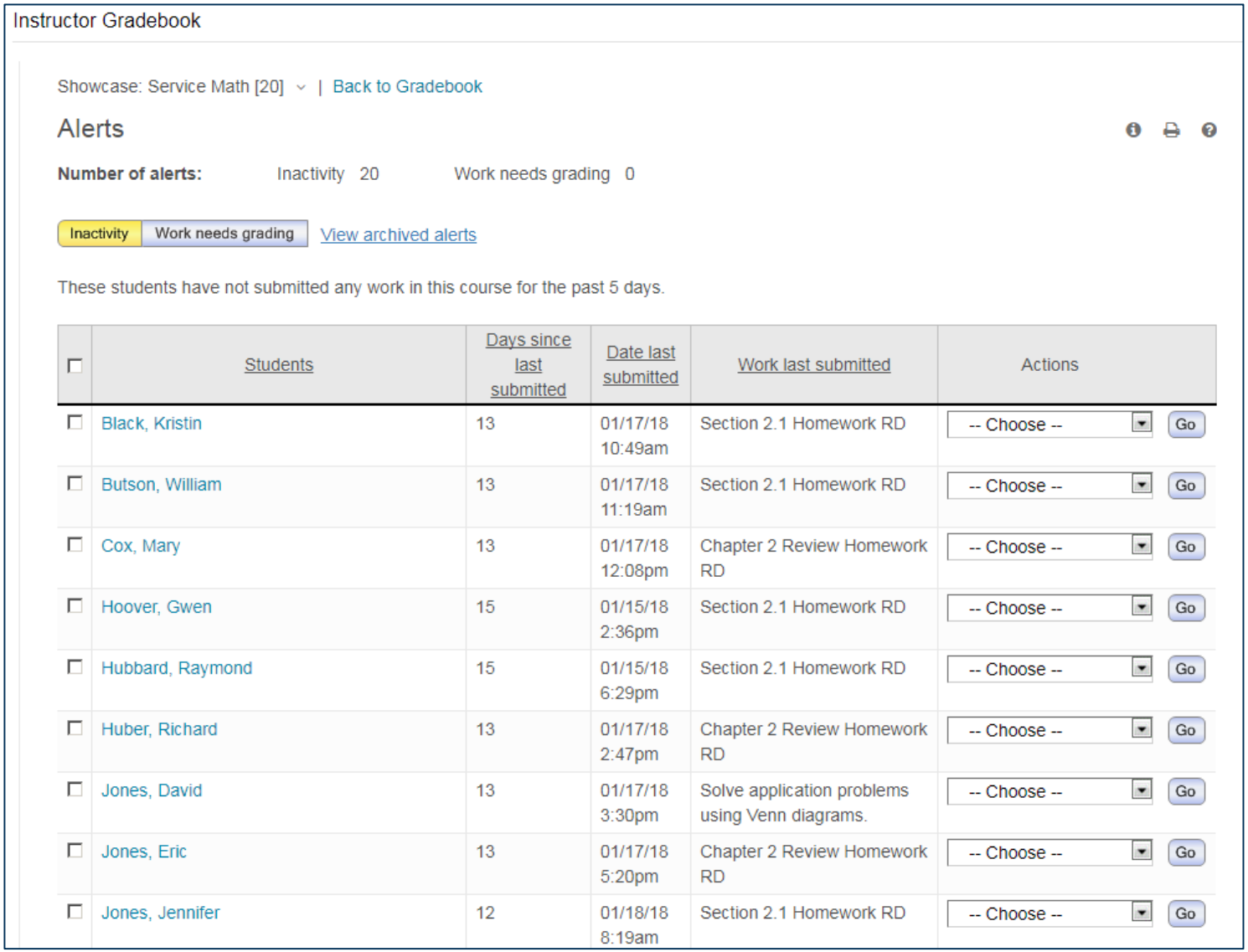
#	Question ID	Objective	# Uses on Quiz	Correct	Partial Credit	Incorrect	Not Attempted	Avg Time Spent	Median Time Spent	Score as Correct
1	12.1.9	Use the addition property of equality.	1	1	0	0	0	12s	Show	
2	12.2.21	Use the multiplication property of equality.	1	1	0	0	0	5s	Show	
3	12.3.69	Write expressions for two related unknown quantities.	1	0	0	1	0	33s	Show	
4	13.1.3	Interpret graphs.	1	1	0	0	0	7s	Show	
5	13.1.61	Plot ordered pairs.	1	1	0	0	0	10s	Show	
6	13.2.36	Graph linear equations of the form y=k or x=k.	1	1	0	0	0	18s	Show	

Done | Export Data

Alerts


Gradebook
Manage Incompletes
Change Weights
Offline Items
Export Data
More Tools
View Results By
Assignments
Performance by Chapter
Student Overview
Study Plan
Alerts
Inactivity
Work needs grading (0)
Skill Builder (8)
Class Performance
Go To Reporting Dashboard
Search
Roster View:
Names Only
Additional Details
Class Roster
Brady, Cordellia
Davis, Calandra

Alerts



Instructor Gradebook

Showcase: Service Math [20] | Back to Gradebook

Alerts

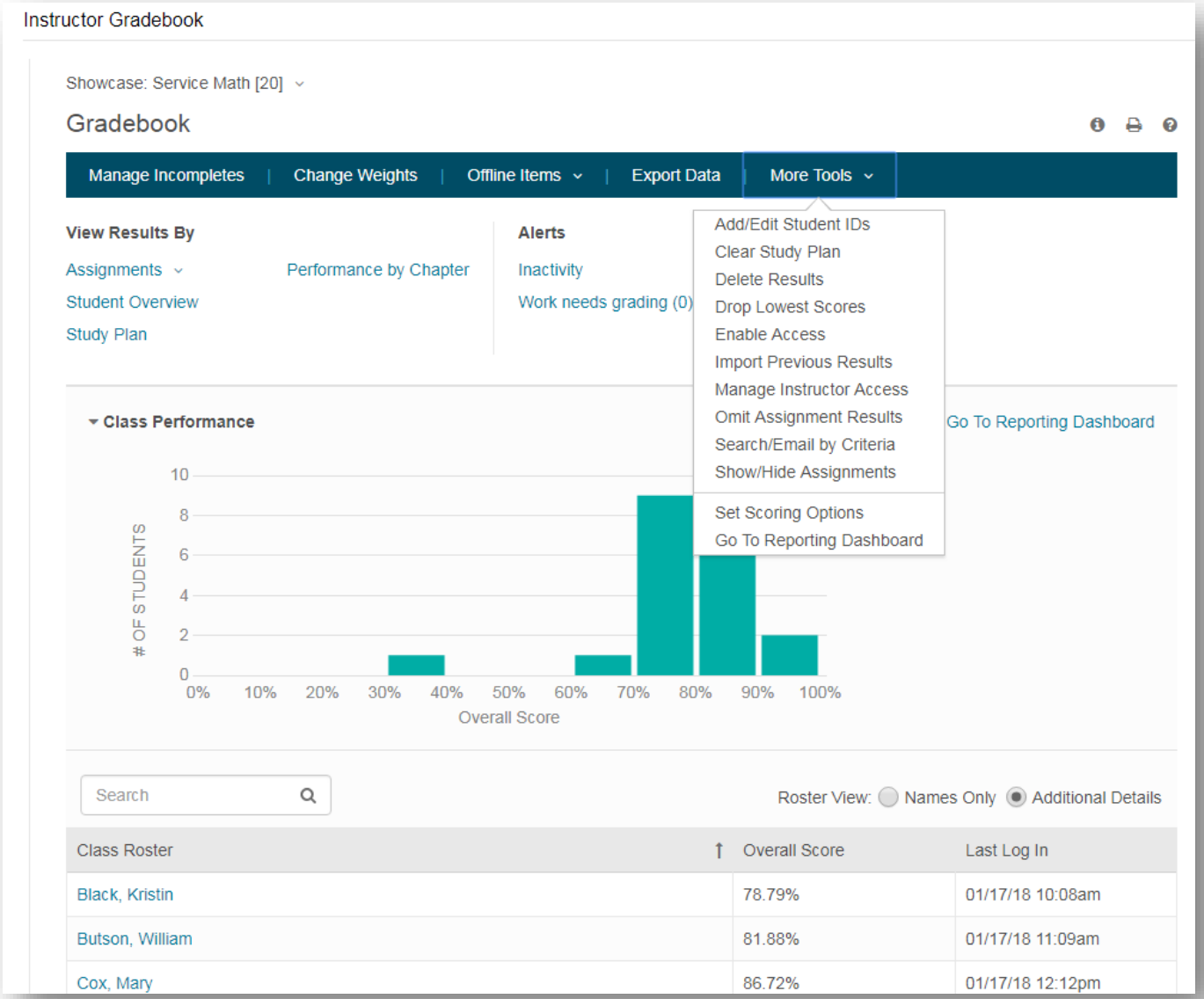
Number of alerts: Inactivity 20 Work needs grading 0

Inactivity | Work needs grading | View archived alerts

These students have not submitted any work in this course for the past 5 days.

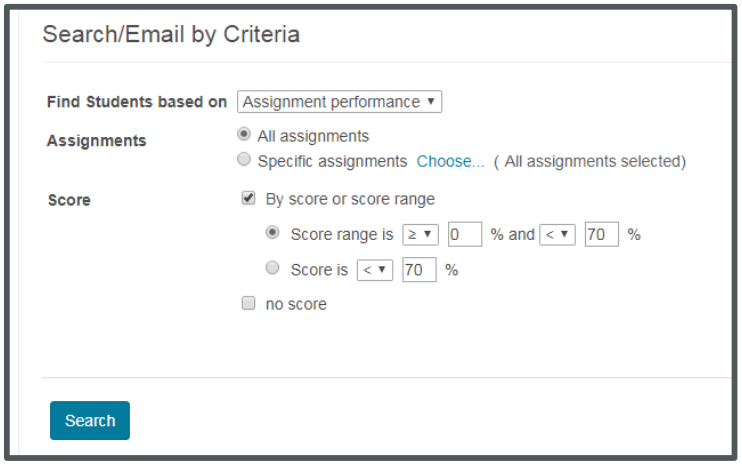
Students	Days since last submitted	Date last submitted	Work last submitted	Actions
Black, Kristin	13	01/17/18 10:49am	Section 2.1 Homework RD	-- Choose -- Go
Butson, William	13	01/17/18 11:19am	Section 2.1 Homework RD	-- Choose -- Go
Cox, Mary	13	01/17/18 12:08pm	Chapter 2 Review Homework RD	-- Choose -- Go
Hoover, Gwen	15	01/15/18 2:36pm	Section 2.1 Homework RD	-- Choose -- Go
Hubbard, Raymond	15	01/15/18 6:29pm	Section 2.1 Homework RD	-- Choose -- Go
Huber, Richard	13	01/17/18 2:47pm	Chapter 2 Review Homework RD	-- Choose -- Go
Jones, David	13	01/17/18 3:30pm	Solve application problems using Venn diagrams.	-- Choose -- Go
Jones, Eric	13	01/17/18 5:20pm	Chapter 2 Review Homework RD	-- Choose -- Go
Jones, Jennifer	12	01/18/18 8:19am	Section 2.1 Homework RD	-- Choose -- Go

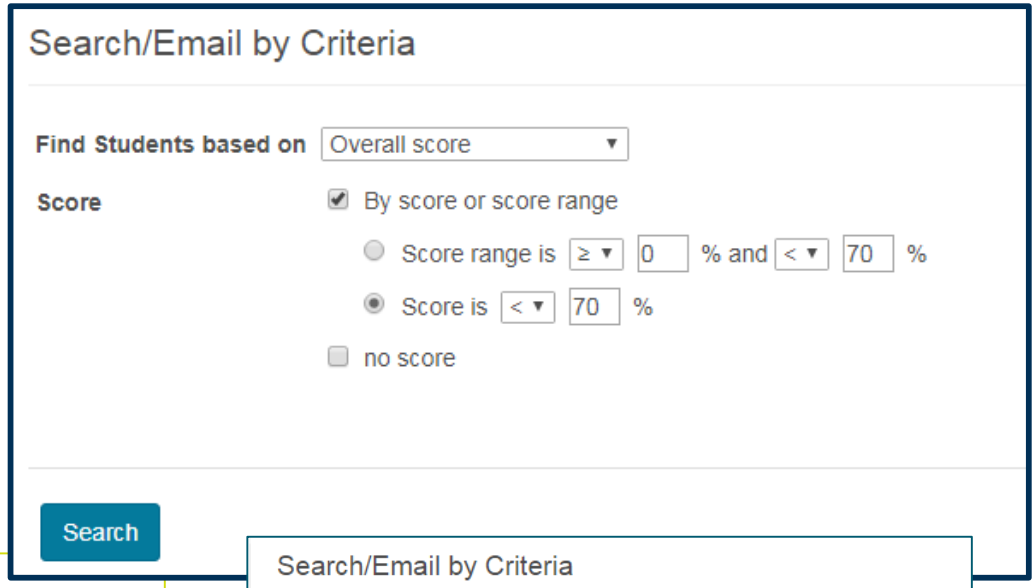
Search/ Email by Criteria

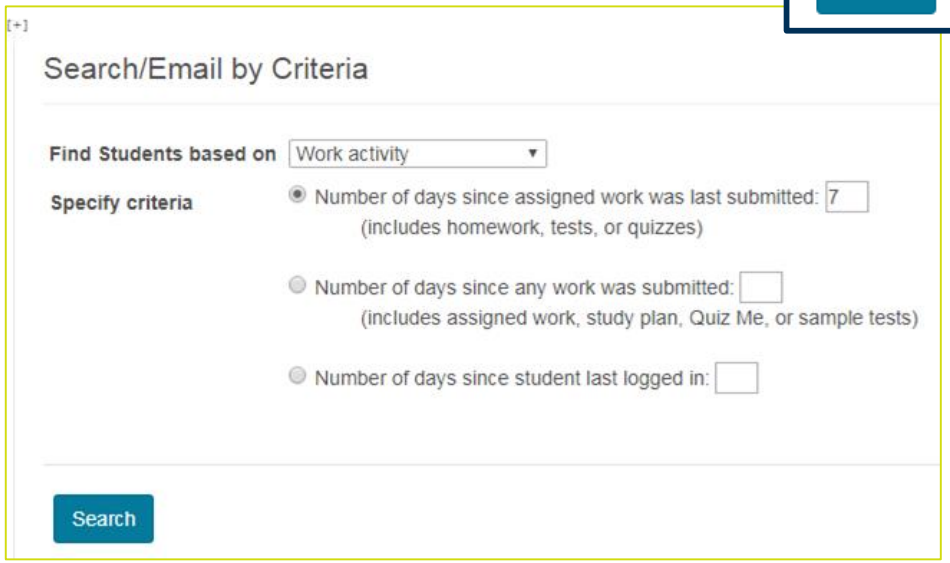


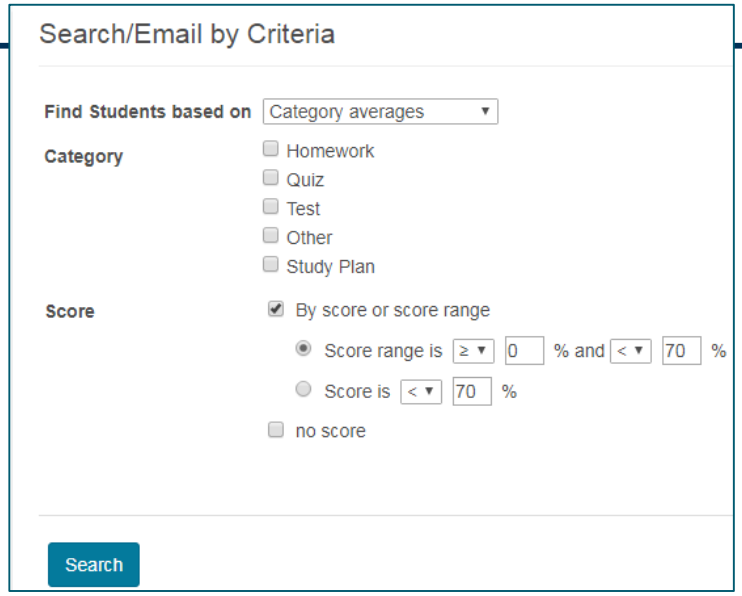
Pearson

Search/ Email by Criteria



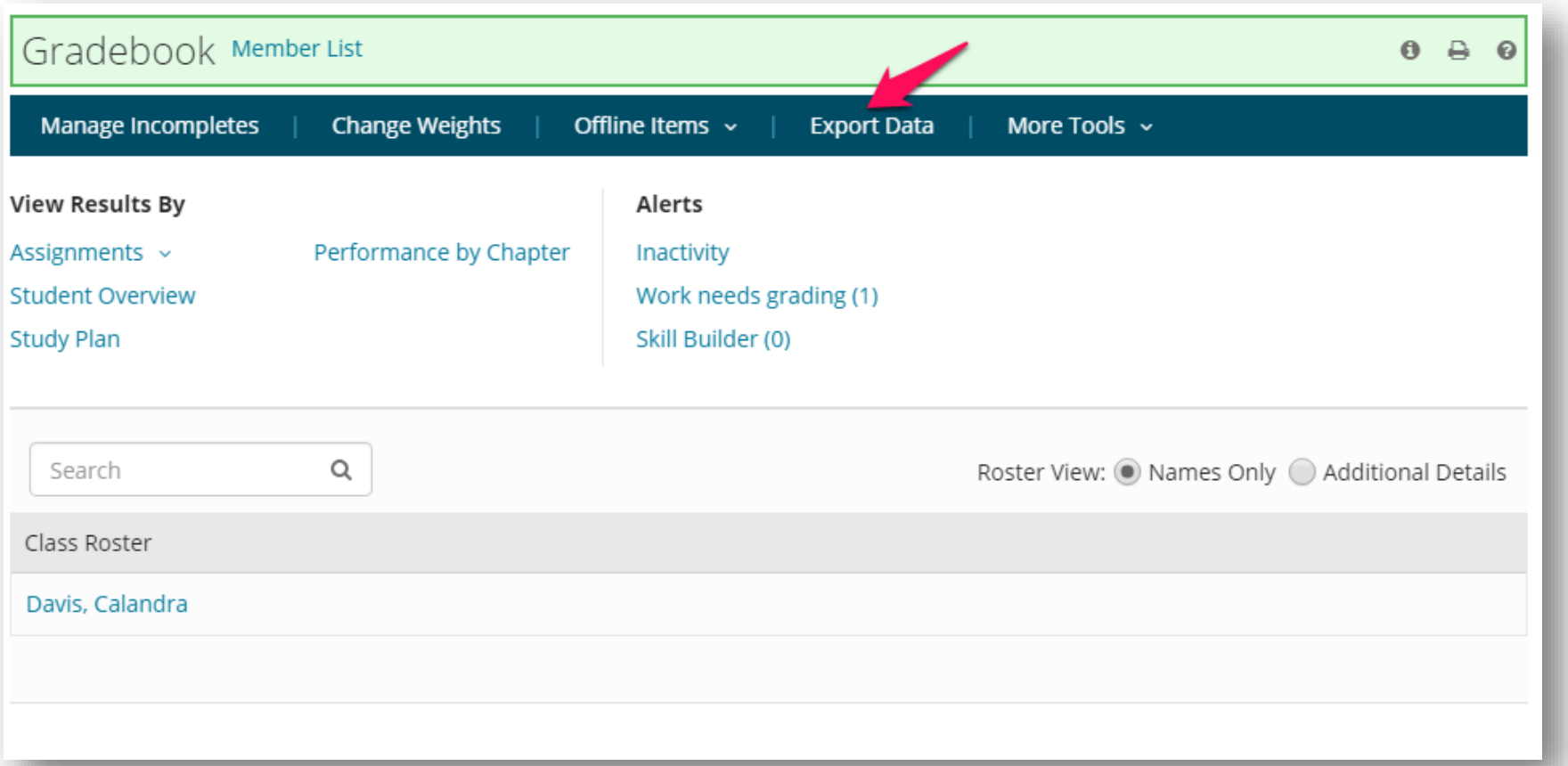




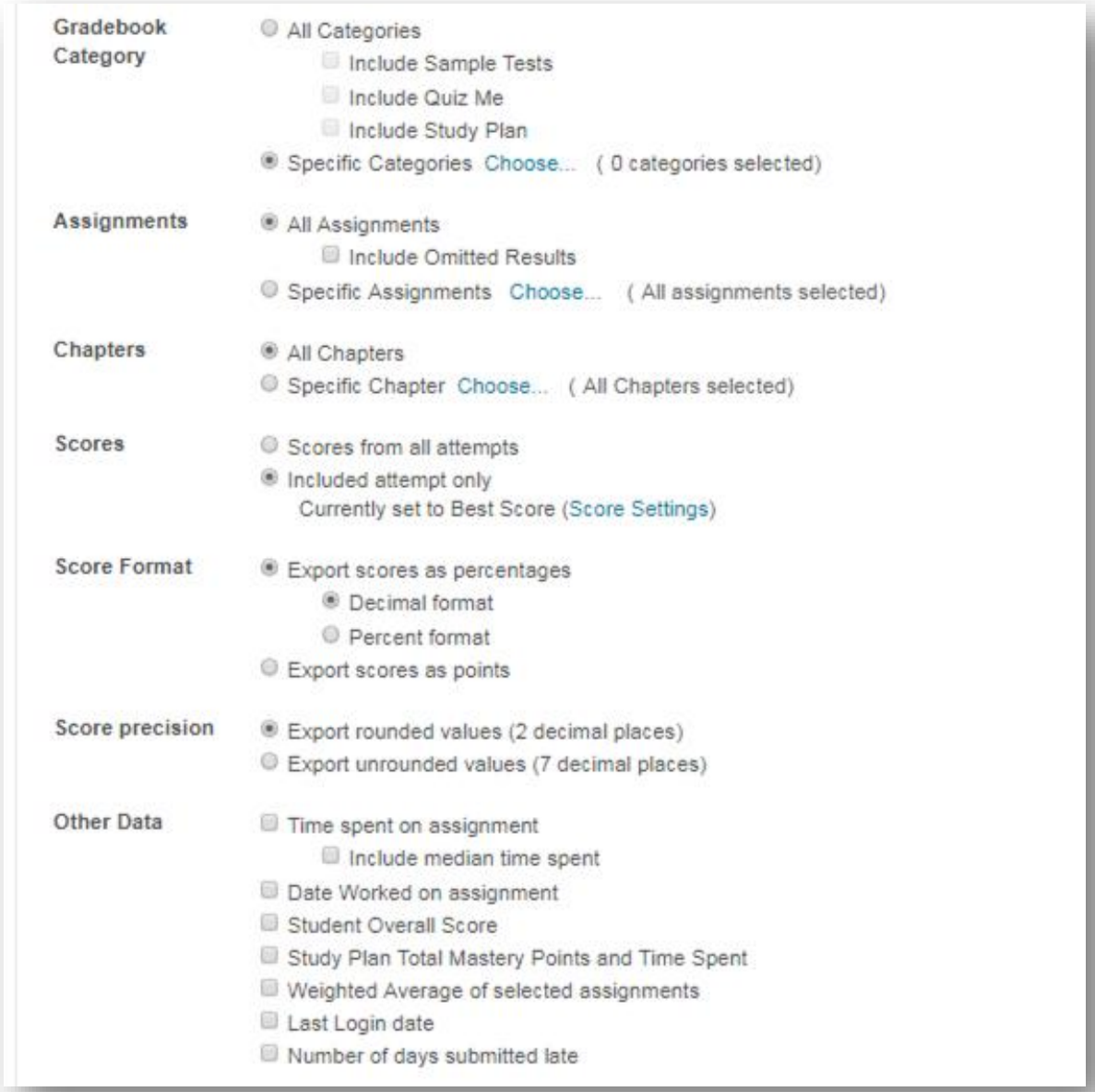


Pearson

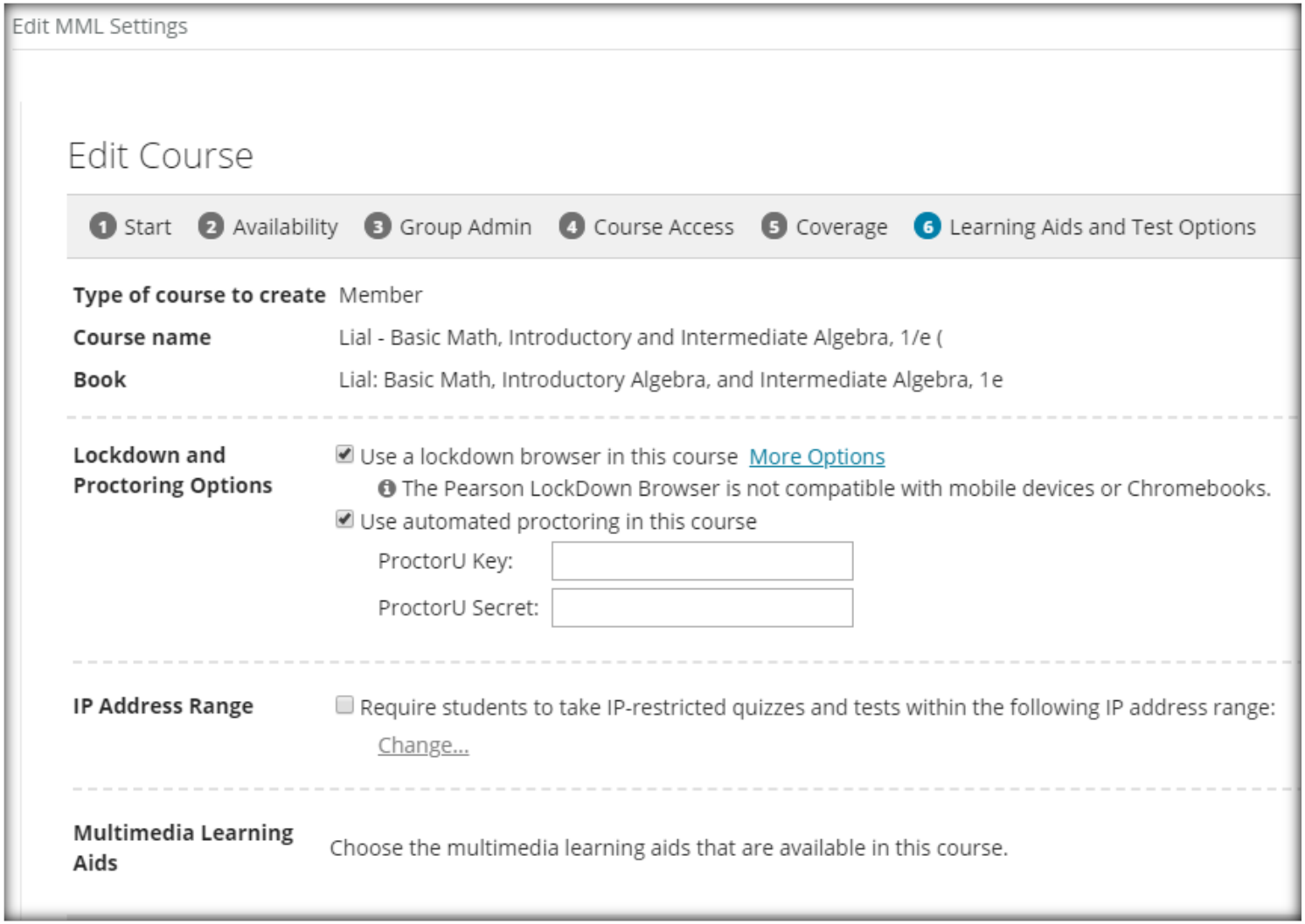
Quick/ Advanced Export



Advanced Export



proctorU New

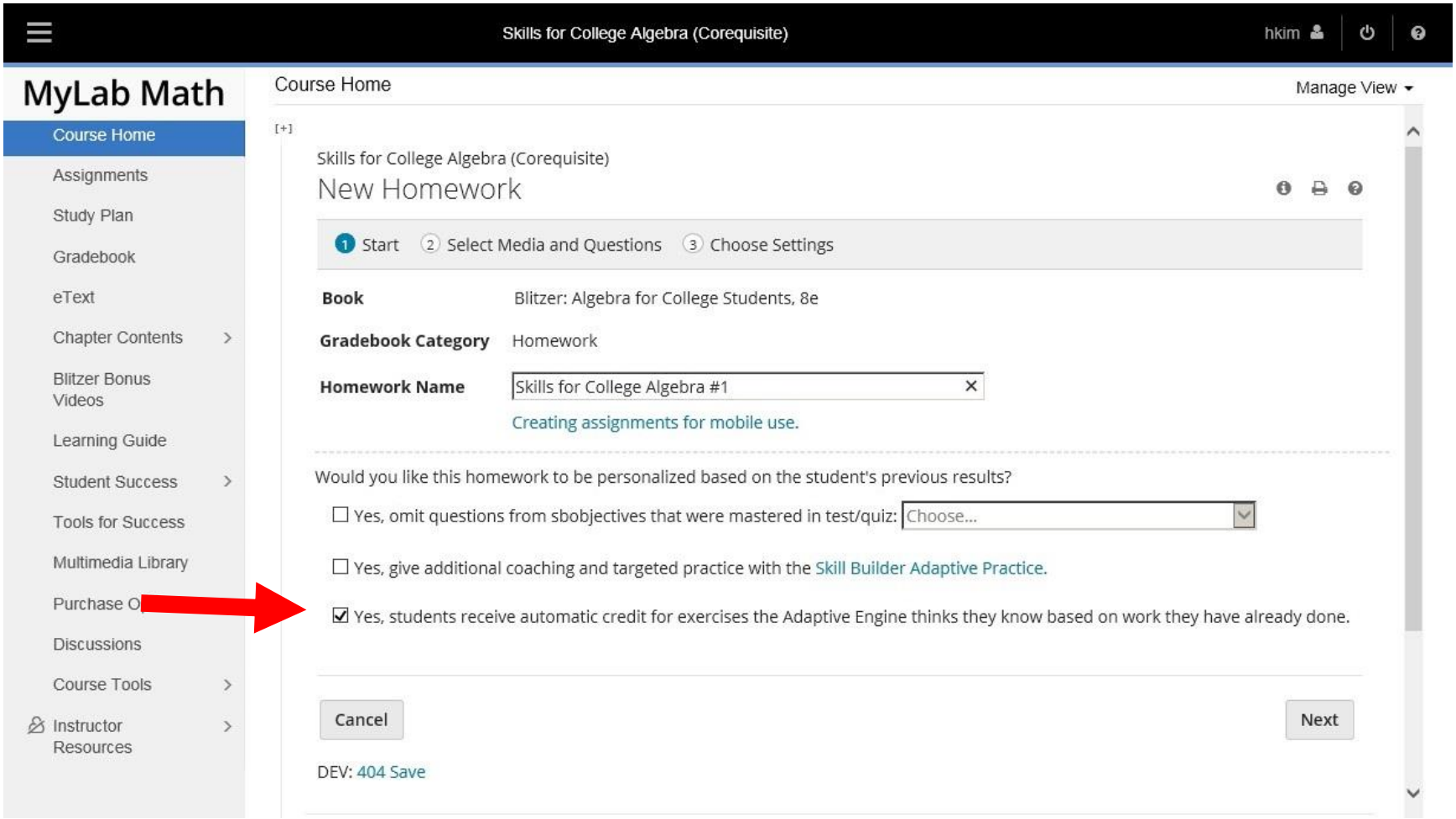


Coming Soon

Adaptive Homework

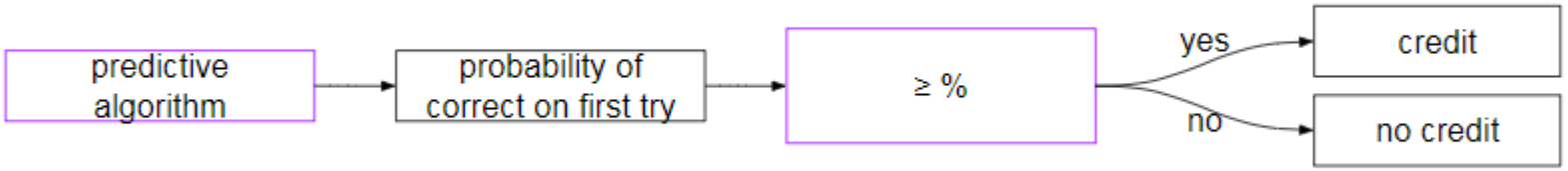
Allowing instructors to **control** what topics students encounter in their course, but using **adaptivity** to personalize assignments to focus students on just the review topics *they* need to learn.

Adaptive Homework



Adaptive Practice

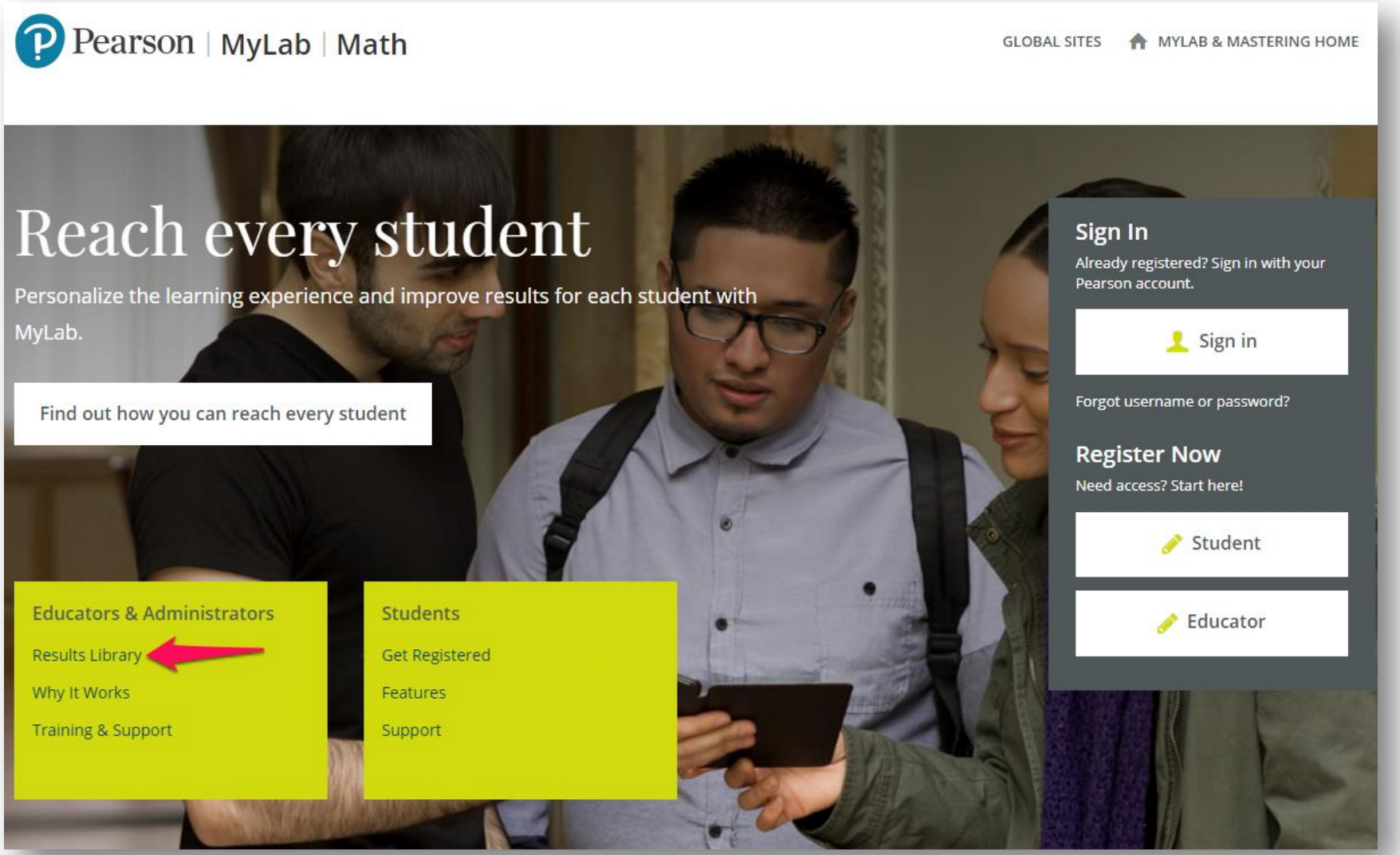
- Courses will be able to “talk to teach other”
- Students’ work activity and rules set by the system predict students’ probability of answering correctly



Corequisite Support Modules

- Lead by George Woodbury
- Standalone corequisite support courses
- Support for Precalculus/ College Algebra, Statistics, Quantiative Reasoning/ Liberal Arts

Results Library



There’s so much more to learn!

Resources:

MyMathLab.com >> Training & Support >> How Do I? Videos

calandra.davis@pearson.com

ALWAYS LEARNING