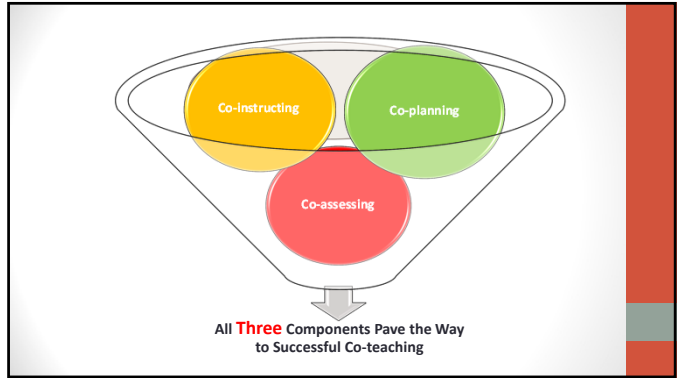


Reaching All Students with Effective Inclusive Practices

Improving Student Outcomes through Co-teaching in Mathematics

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Framing The Learning

Essential Question

How can effective co-teaching in the mathematics classroom positively impact student success?

Objective

Describe effective co-teaching practices that are used to differentiate instruction and increase student achievement for diverse learners in the MATH classroom.

Math Classrooms look & sound like-

Direct Instruction ▾

Let's Review

Algebraically proving an identity:

Change look

if $x=4$, this is worth 18

if $x=4$, this is worth 18

Representations, problem solving & critical thinking, communication & student discourse, reasoning and proof

Activator: Plickers

What does **effective** and **high-yield** co-teaching in a Mathematics Classroom look like?

- Teacher A** leads the class period, and **Teacher B** interjects from time to time.
- Teacher B** leads the class period, and **Teacher A** circulates around the room checking on specific students.
- Teacher A** leads the lesson and **Teacher B** makes copies.
- Teacher A** and **Teacher B** are actively engaged in the teaching and learning process during the entire lesson; collecting data and using data to differentiate instruction for students with flexible groupings throughout the class period.

Meaningful Collaboration Depends on:

Learning Specialist

- *Adaptation/Modification (IEP or WIDA)
- *Motivation Strategies
- *Language Acquisition
- *Differentiation
- *Reading Interventions
- *Data Collection
- *Brain/Processing Breaks

Content Expert

- *Curriculum Sequence
- *Instructional Objectives
- *Curriculum Pacing
- *Content Depth
- *How Concepts relate
- *Data Collection
- *Brain/Processing Breaks

Co-Teaching

Enhanced Content Access to rigorous instruction Support for all

The Five Co-teaching Models

One Lead/One Support
(One Lead/One Collect Data)

Alternative Teaching

Teaming

Station Teaching

Parallel Teaching

Friend & Cook

Timed Pair Share

How have you used stations in your co-taught classroom?
or
What is an upcoming concept in which you can use Station Co-teaching to reach all Learners?

Independently think for 20 seconds

Partner A talks for 15 sec – Partner B Supports

Partner B talks for 14 sec – Partner A Supports

What to Say to Support:

Tell me more about that...

What happened next...

What is one thing you still wonder?

That sounds interesting

*** Station Teaching ***

Station Teaching

Prescribe and plan stations based on learning needs (readiness, interest, and multiple intelligence).

Teachers may differentiate station work by:

- Designating some stations as reteach/reinforce and others as extensions or enrichment, based on assessment data.
- Designing tasks of different levels of challenge or complexity.
- Utilizing different instructional resources related to readiness needs or prior knowledge (C-R-A; multimedia- learnzillion.com, kinesthetic, etc.).

Alternative Teaching

Alternative Teaching

Teachers may differentiate :

- By having one teacher works with a small group of students while the other works with the larger group.
- Based on data- the small group is used for re-teaching, review, extension or enrichment activities.

Tier Instruction by:

Level (accessible readings/materials)
Structure (clearly defined vs. fuzzy problems)
Complexity (concrete vs. abstract)

**Teachers should alternate roles so that they are not associated with a particular role.*

Station Teaching In Action

Example One

After CRA pre-assessment on math concept, teachers plan and divide each station according to readiness level. Each station has materials and sample questions.

Station 1: Teacher A works with “concrete –level” group to build understanding.

Station 2 & Station 3: Teacher B rotates between Station 2: “Representational” & Station 3: “Abstract.”

Resources: Hands On Learning Book & Manipulatives for targeted concept

Example Two

After planning, teachers design stations to account for students interest and learning styles.

Station One: Students work on a Learnzillion activity with a partner & complete criteria for success checklist.

Station Two: Teacher A re-teaches and reviews key concept using NCTM Illuminations interactives/gizmos, etc.

Station Three: Teacher B provides cumulative practice problem review.

Resources: Computers/ipads for Independent Station

Alternative Teaching in Action

Example One:

Teachers are reviewing warm-up data and notice a few students did not grasp the concept. During a quick side-bar conversation, the team decides that one teacher will pull a few students to the side table for 8 minutes...

Teacher A will select students & re-teach the concept (differently) – with manipulatives, a self-monitoring checklist to analyze errors, whiteboards, etc.

Teacher B will lead whole class in next activity

Example Two:

Teachers are planning for the next unit and the General Educator mentions that students generally struggle with this topic. The team analyze the “task” and decide to pre-teach some key vocabulary/processes to specific students tomorrow to help new info stick...


Teacher B will greet the students at the door and during the warm-up will pre-teach the concept with vocabulary/learning strategies at the side of the classroom

Teacher A will lead HW /warm-up

Note: Teachers can accommodate students that need acceleration and extension in the same manner as up top.

Parallel Co-teaching

Parallel Teaching




Best Used When

- Diverse Levels of Readiness
- Content is Non-Hierarchical
- Chunking concepts will help with understanding and digger deeper
- Dividing class into smaller groups to facilitate a learning activity
- Teaching different strategies to solve similar problems and then have students teach each other (substitution vs. elimination)
- Accommodating different learning styles while covering the same content

**Best Practices:
Parallel Co-teaching**

- *Heterogeneous & flexible groupings
- *Same content- Split the class
- *Flip teachers or students to add novelty to maximize student response rate
- *Individualize and target students needs

BASE Unit Co-Planning Framework



BASE

Big Ideas

Analyze areas of difficulty (vocabulary, math skills, etc.)

Strategies and supports (differentiation and scaffolding via multiple means of representation & alternative teaching)

Evaluating the process (Analyze data & Adjusting Instruction: pre-teaching or re-teaching)

Hawbaker et al. 2001

Processing Break

With a partner, create an image that represents a key-take away for using
“Alternative” or “Parallel Co-teaching.”

Stick the image on a piece of paper.

“Show Me the Wikki Image”

Co-Planning Tips

- Co-plan & communicate virtually (google docs, planbook.edu, post-it note reflections, etc.)
- Schedule regular planning meetings - Avoid "fitting it in"
- Set a time limit for planning
- Focus first on planning the lesson; then set time aside for student specific issues
- Come to the table with ideas
- Guide the session with the following fundamental issues:
 - *What are the content goals?
 - * Who are the learners? Where do we anticipate difficulty?
 - * How can we teach the goals/objectives most effectively?

BASE Co-Planning Framework

B.A.S.E Co-teaching Planning Guide

Big Ideas (Essential Questions, Enduring Understandings, Content & Language Objectives, Key Vocabulary)			
Week One	Week Two	Week Three	Week Four
Transfer Task and/or Summative Assessment			
↓			
Analyzing Areas of Difficulty/Misconceptions			
↓			
creating Strategies and Supports <i>Differentiation/scaffolding & Co-teaching Models that will support & engage all learners</i>			
↓			
Evaluating <i>Analyze assessment data and strategies used</i>			

Based on (Hawbaker, R. W. et al. "Building a Strong A.S.E. of Support for All Students Through Co-planning." Teaching Exceptional Children, 43.4, 2011).

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I provide coaching & professional development sessions on differentiation, engagement, co-teaching, technology integration, literacy across curriculum... and many more topics.