NAIS Thrive 2025: February 28, 2025

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The Connection Between Classroom Instruction and Academic Growth

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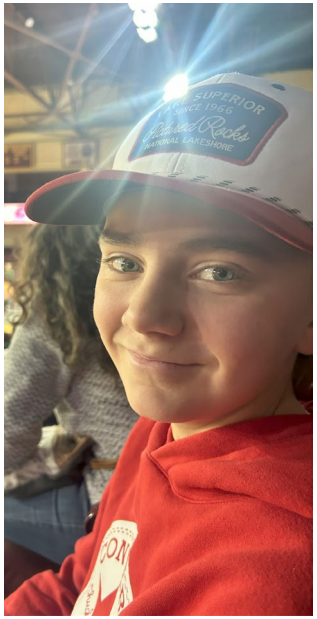
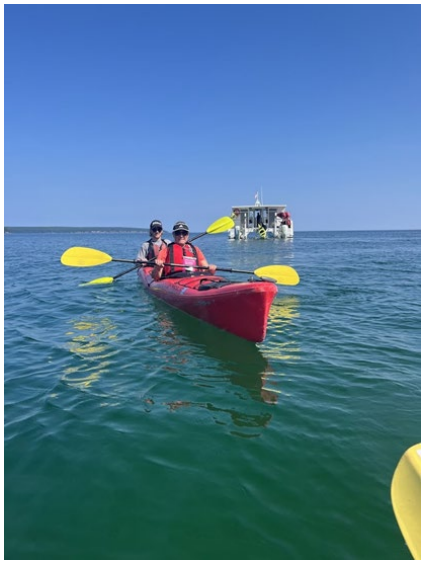
Who Am I?





Learning Objectives

Learners will…

- Explore research that connects student engagement strategies to academic outcomes.
- Understand which classroom components are connected to educational outcomes.
- Examine evidence supporting the importance of quality instruction with a focus on engagement.
- Begin to think about how to conduct similar action research in their own setting OR enhance engagement strategies.

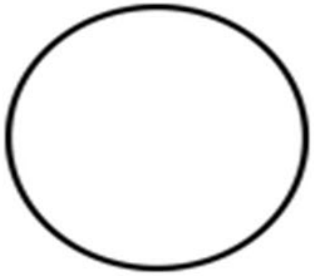
Agenda

- What tool did we use for observation? Why? (15 min)
- Describe Antecedents of Student Engagement (ASE). (15 min)
- Research design. Practical research possibilities. (15 min)
- Use of findings and practice some ASE. (20 min)
- Implications for the future. How can you use this learning? (10 min)

Triangle-Square-Circle

3 significant ideas that I **took away** from the lesson...

What concepts from the lesson are **squared away** in my mind?



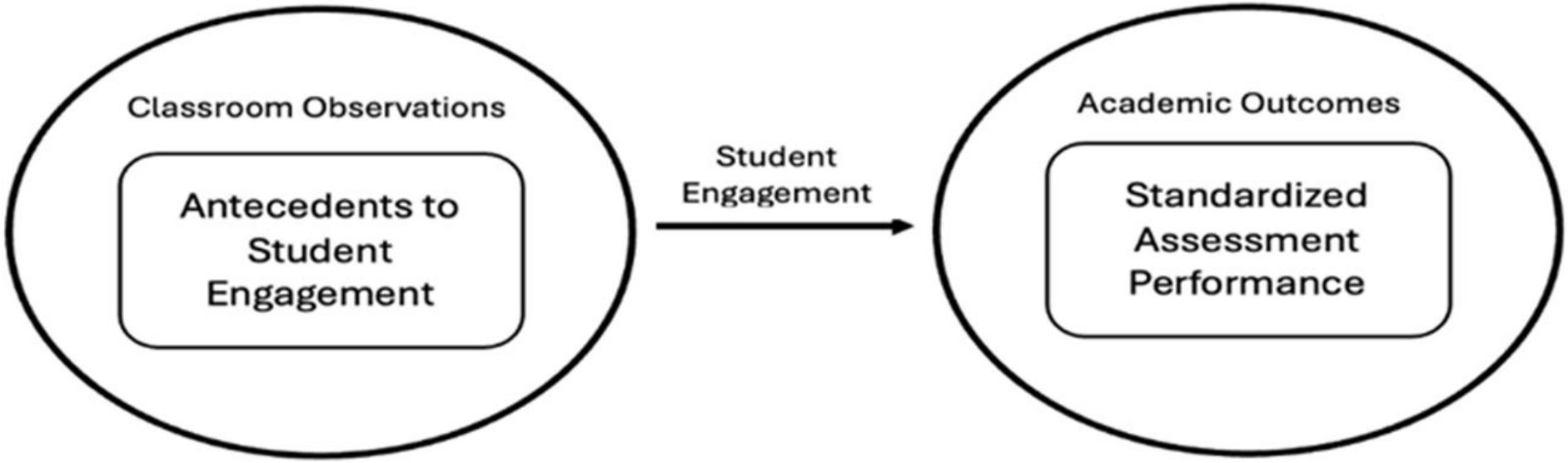
What **one or two questions** are still circling in my head?

Introduction

- School quality and evaluation has extended beyond standardized tests.
- Measures of instructional quality are more important than ever.
- Qualitative measures are not often connected to quantitative measures.
- Let's do that!

> The songwriting process is like planting a seed; every chord, every lyric, every note nurtures its growth until is blossoms into a masterpiece.

Teaching is Like a Song: Conceptual Model



Descriptive Statistics

	SAMPLE	PORTFOLIO	STATE
% FRPL	70%	74%	54%
Student of Color	67%	63%	37%
ELL	13%	11%	7%

- Number of Schools In Study= 24
- Number of Students= 5,763
- Includes Grades 3-8 (distributed evenly)
- 2 Years of Data

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Classroom Observation Continuum of Progress

School:	**Grade/Subject:**	**Start Time of Observation:** **End Time of Observation:**
Reviewer:	**Room Number:**	**Part(s) of Lesson Observed:** B M E All
Date:	**Number of Adults:**	**Brief Description of Lesson:**
Mission, Vision, Values Evident:	**Number of Students:**	

Overall Rating Per Element

Below Expectations (B), Approaching Expectations (A), Meets Expectations (M), or Exceeds Expectations (E)

Element	Rating	Notes
Learning Environment	B A M E	
Cognitive Challenge	B A M E	
Student Engagement	B A M E	
Research-Based Strategies	B A M E	
Assessment & Adjustment	B A M E	

Educational Review Protocol

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Learning Environment

Learning Environment	Below Expectations ☐	Approaching Expectations	Meets Expectations ☐	Exceeds Expectations ☐
Key Question *How does the teacher ensure a safe and respectful environment conducive to learning?*	☐ Teacher has little or no established classroom management structures and lacks control of the classroom environment.	☐	☐ Teacher has established many **classroom management structures** and exhibits consistent control of the classroom environment.	☐ Teacher has implemented highly effective classroom management structures which systematically demonstrate high expectations and scholarly behavior as the norm.
Observable Evidence *"Classroom management structures" examples include, but are not limited to proximity, circulating, time use, rules, attention signals, routines, norms, contracts and behavior charts.* *"Rapport" evidence includes but is not limited to respectful tone of voice, affirming words and body language, pleasant and positive interactions, a sense of community, synergy and safety.* *"Resources" include but are not limited to staff, furniture, literature books, technology, manipulatives, textbooks, and anchor charts on walls.*	☐ Teacher and students do not demonstrate mutual respect and rapport.	☐	☐ Teacher and students consistently demonstrate mutual **respect** and **rapport** which conveys a sense of community.	☐ Teacher and students constantly demonstrate mutual respect and rapport which conveys a sense of safety and community.
	☐ Student behaviors are inappropriate and disrupt instruction and learning.	☐	☐ **Student behaviors** are appropriate with limited to no disruption to instruction and learning.	☐ Student behaviors are consistently appropriate with no disruption to instruction and learning.
	☐ Teacher utilizes little or no accountability measures for behavior.	☐	☐ If needed, the teacher utilizes consistent **accountability measures** for behavior.	☐ If needed, the teacher utilizes strategic and seamless accountability measures for behavior that do not disrupt the flow of the lesson.
	☐ Teacher does not utilize time appropriately (e.g., excessive time is spent on non-instructional activities).	☐	☐ Teacher consistently **utilizes time** appropriately (e.g., minimal, if any, instructional time is lost).	☐ Teacher strategically utilizes instructional time with emphasis on rigorous pacing.
	☐ Teacher does not ensure provision of necessary instructional resources.	☐	☐ Teacher provides the appropriate **instructional resources.**	☐ Teacher provides ample and innovative instructional resources.

Meets Expectations ☐

- ☐ Teacher has established many **classroom management structures** and exhibits consistent control of the classroom environment.
- ☐ Teacher and students consistently demonstrate mutual **respect** and **rapport** which conveys a sense of community.
- ☐ **Student behaviors** are appropriate with limited to no disruption to instruction and learning.
- ☐ If needed, the teacher utilizes consistent **accountability measures** for behavior.
- ☐ Teacher consistently **utilizes time** appropriately (e.g., minimal, if any, instructional time is lost).
- ☐ Teacher provides the appropriate **instructional resources.**

Learning En

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Cognitive Challenge	Below Expectations ☐	Ap	Meets Expectations ☐	ets Expectations ☐	Exceeds Expectations ☐
Key Question *How does the teacher ensure higher-order thinking and application of the learning?*	☐ Teacher does not utilize strategies that promote higher-order student thinking.	☐ Te pr th	☐ Teacher consistently utilizes **strategies** to promote higher-order student thinking through a scaffolded progression.	consistently utilizes **gies** to promote higher-order hinking through a scaffolded ion.	☐ Teacher systematically utilizes strategies to promote higher-order student thinking through a scaffolded progression and customization.
Observable Evidence *"Higher-order questions" include but are not limited to those which challenge students to explain their thinking, infer, back up a position, or foster deeper levels of thinking in accordance to the taxonomies.*	☐ Learning tasks do not require students to apply content skills and/or skills are at the lowest level of the cognitive domains (e.g., knowledge).	☐ L st sk cc ar	☐ **Learning tasks** consistently allow students to apply content skills and primarily require students to perform at the mid-levels of the cognitive domains (e.g., application and analysis).	**ing tasks** consistently allow to apply content skills and y require students to perform id-levels of the cognitive (e.g., application and).	☐ Learning tasks consistently allow students to apply content skills and predominately require students to perform at the highest levels of the cognitive domains (e.g., synthesis and evaluation).
"Strategies" include but are not limited to using advanced organizers, generating and testing hypotheses, identifying similarities and differences, providing feedback, nonlinguistic representations, summarizing, note taking, etc.	☐ Teacher does not pose questions that deepen academic understanding.	☐ Te de m	☐ Teacher poses many **academic questions** that deepen academic understanding and encourage elaboration on content or examination of reasoning (i.e., open-ended questions).	poses many **academic ons** that deepen academic nding and encourage ion on content or examination ning (i.e., open-ended s).	☐ Teacher and students pose strategic academic questions that deepen academic understanding through metacognition, analytic reasoning, critical thinking, problem solving and/or tactical thinking.
"Rigorous tasks" include but are not limited to analyzing, creating, inventing, citing evidence, researching, debating, error analysis, self-reflection, defending a claim, writing, etc.	☐ Students are not encouraged to engage in academic discussions or make connections to prior learning.	☐ St to m le	☐ Students are consistently encouraged to engage in substantive **academic discussions** and **make connections** to prior or future learning.	are consistently encouraged e in substantive **academic sions** and **make ctions** to prior or future .	☐ Students are constantly encouraged to engage in deep academic discussions, pose insightful questions, elaborate on content, and make connections that demonstrate the transference of skills to new constructs.

Cognitive C

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Student Engagement

Student Engagement	Below Expectations ☐	Meets Expectations ☐	Expectations ☐	Exceeds Expectations ☐
Key Question *How does the teacher integrate strategies and activities to actively engage students and enhance the learning?*	☐ Instruction is primarily teacher-centered and provides little to no opportunities for students to demonstrate learning.	☐ Instruction is primarily **student-centered** with ample opportunities for students to demonstrate learning.	primarily **student-** ith ample opportunities demonstrate learning.	☐ Instruction is fully student-centered with innovative opportunities for students to demonstrate learning.
Observable Evidence *"Engaging activities" evidence include but are not limited to rigorous tasks, peer-to-peer discussions, hands-on activities, student inquiry, debate, student enthusiasm, academic games, competition, project-based learning (PBL), reflection and closure.* *Examples of dis-engagement include but are not limited to silence, no peer-to-peer talk or interactions, heads-down, worksheets, teacher-directed lesson, no student voice, no hands-on materials, off-task student behaviors, mere compliance, unequal participation and down time with no academic focus.*	☐ Teacher provides little or no opportunities for students to discuss content, collaborate with peers or self-reflect on the learning thus fostering an environment of passive learners.	☐ Teacher provides many opportunities for students to discuss content, collaborate with peers or self-reflect on the learning thus fostering an environment of **active learners.**	ides many opportunities discuss content, ith peers or self-reflect g thus fostering an of **active learners.**	☐ Teacher provides numerous strategic opportunities for students to discuss content, initiate inquiry, make contributions, challenge thinking and explore the content thus fostering an environment of active, self-directed learners.
	☐ The pace of the lesson is not appropriate (e.g., rushed or dragged out).	☐ The **pace** of the lesson is appropriate for student learning.	the lesson is appropriate rning.	☐ The pace of the lesson is consistently appropriate, student-driven and rigorous to advance student learning.
	☐ Teacher does not connect the learning objective / purpose to prior knowledge or the real world.	☐ Teacher consistently connects the learning objective / purpose to **prior knowledge or the real world.**	istently connects the ctive / purpose to **prior** **or the real world.**	☐ Teacher and students systematically connect the learning objective / purpose to prior knowledge, personal lives or the real world throughout the lesson.
	☐ Instructional activities and assignments are not aligned to the objective and do not substantiate the purpose of the learning.	☐ Instructional **activities** and assignments are **aligned to the objective** and substantiate the purpose of the learning.	**activities** and **re aligned to the** nd substantiate the e learning.	☐ Instructional activities and assignments are fully aligned to the objective and deepen understanding and synthesis of material through thoughtful reflection to consolidate the learning.

Student En

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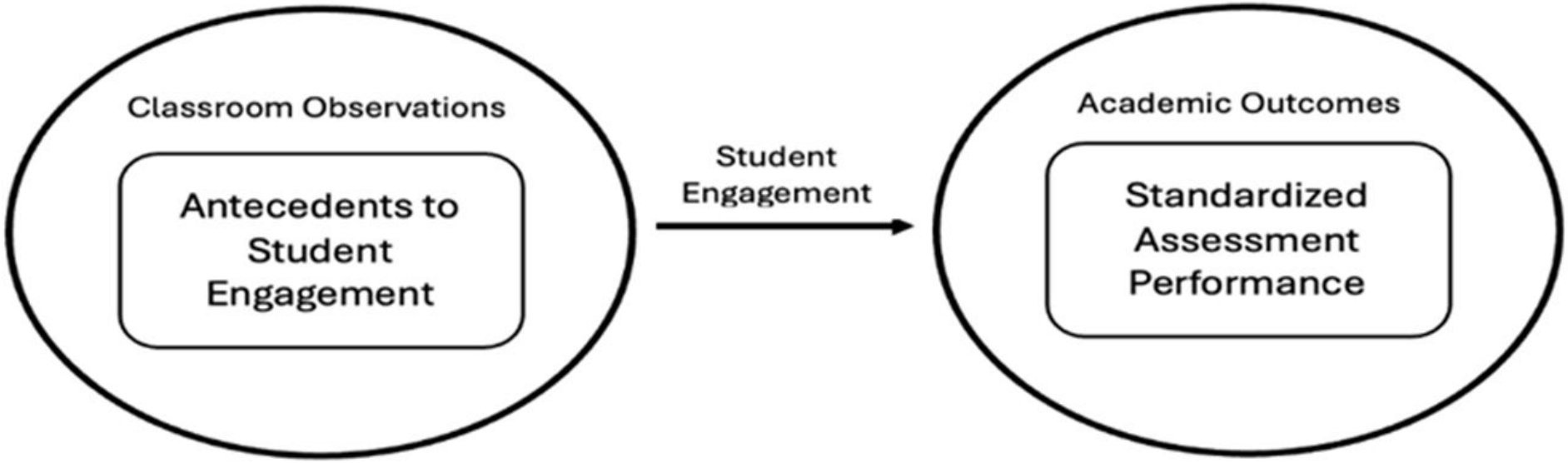
Principal Component Analysis: Two Areas of Focus

- Learning Environment
  - Accountability
  - Classroom Management
  - Creating Respect & Rapport
  - Use of Class Time
- Antecedents to Student Engagement

Teaching is Like a Song: Conceptual Model



Student Engagement

Engagement comprises three distinct types (Irvine, 2020; Maamin et al., 2022):

- Emotional engagement refers to students' reactions to other students and adults that lead to responses such as boredom, happiness, or anxiety.
- Cognitive engagement is a student's investment in learning complex ideas and concepts (Fredricks et al., 2004; Lei et al., 2018).
- Behavioral engagement is the level to which students participate in learning activities and the effort put forth while learning.

Student Engagement

If educators pay attention to specific strategies for engagement, student attitudes toward instruction will improve, leading to better educational outcomes (Irvine, 2020).

A student's time engaged academically strongly predicts academic achievement (Gettinger & Walter, 2012).

Students must actively engage in the classroom setting to see achievement results (Guo et al., 2011).

Antecedents to Student Engagement (ASE)

Instructional design is important to engagement by using a variety of teaching methods and matching instruction to student ability levels. (Gettinger & Walter, 2012).

Engagement is increased by using interactive teaching, facilitating active student responses, and providing frequent feedback. Instructional design, including research-based teaching methods and matching instruction to student ability, also promotes engagement (Danielson, 2022; Hattie, 1992; Marzano, 2011).

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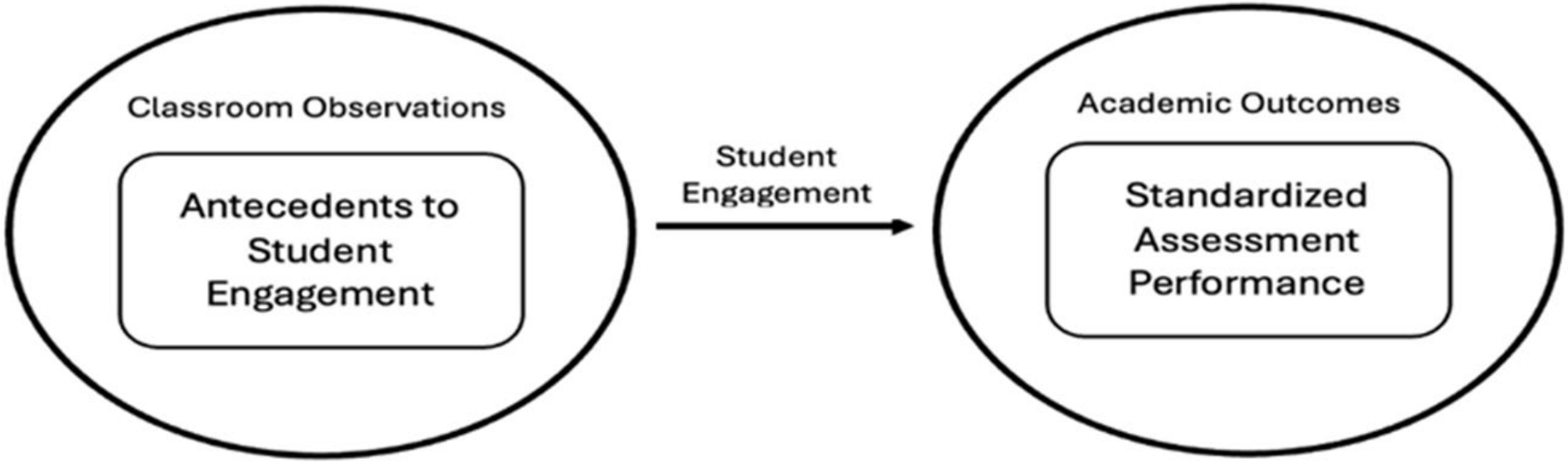
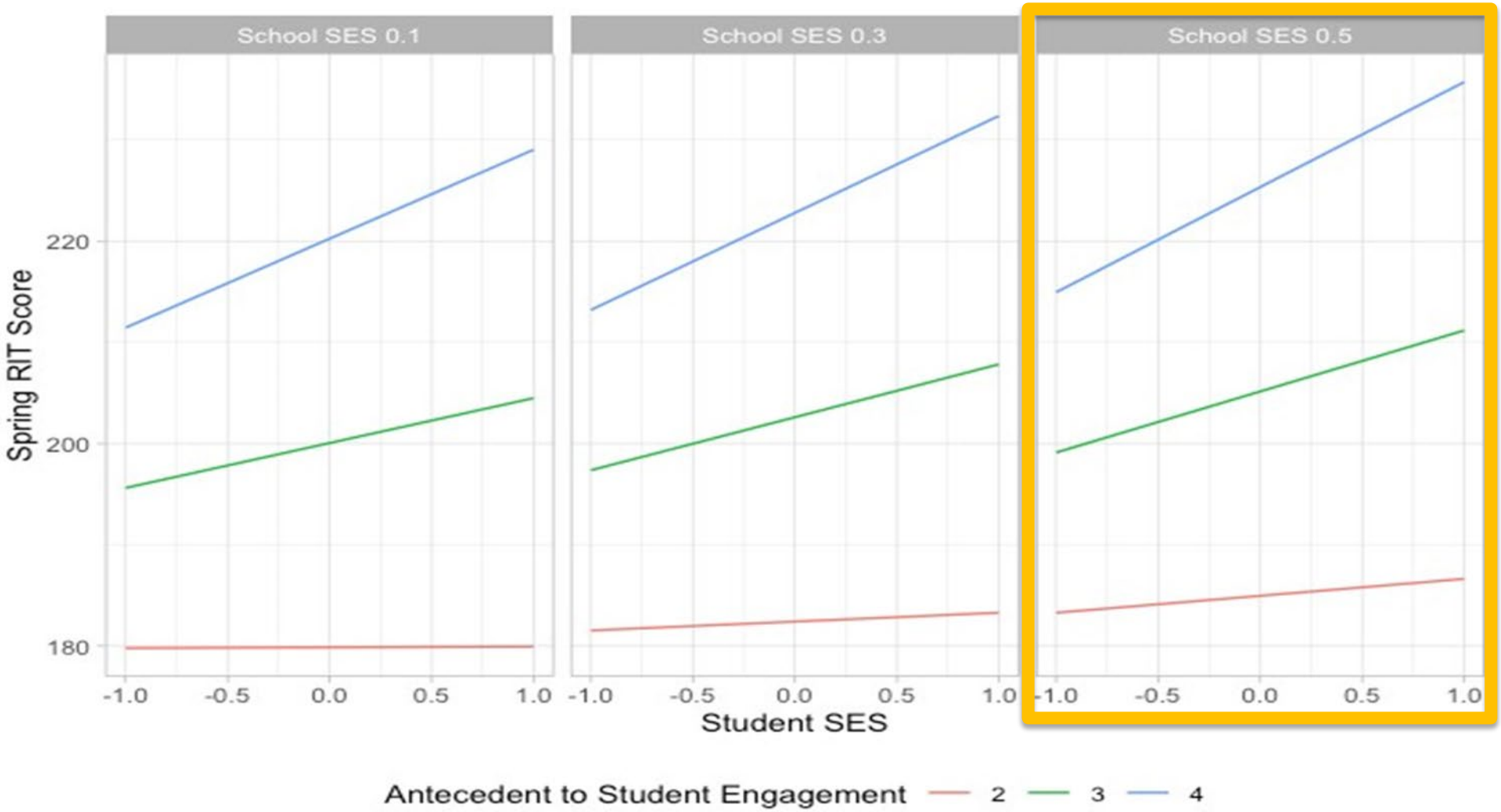
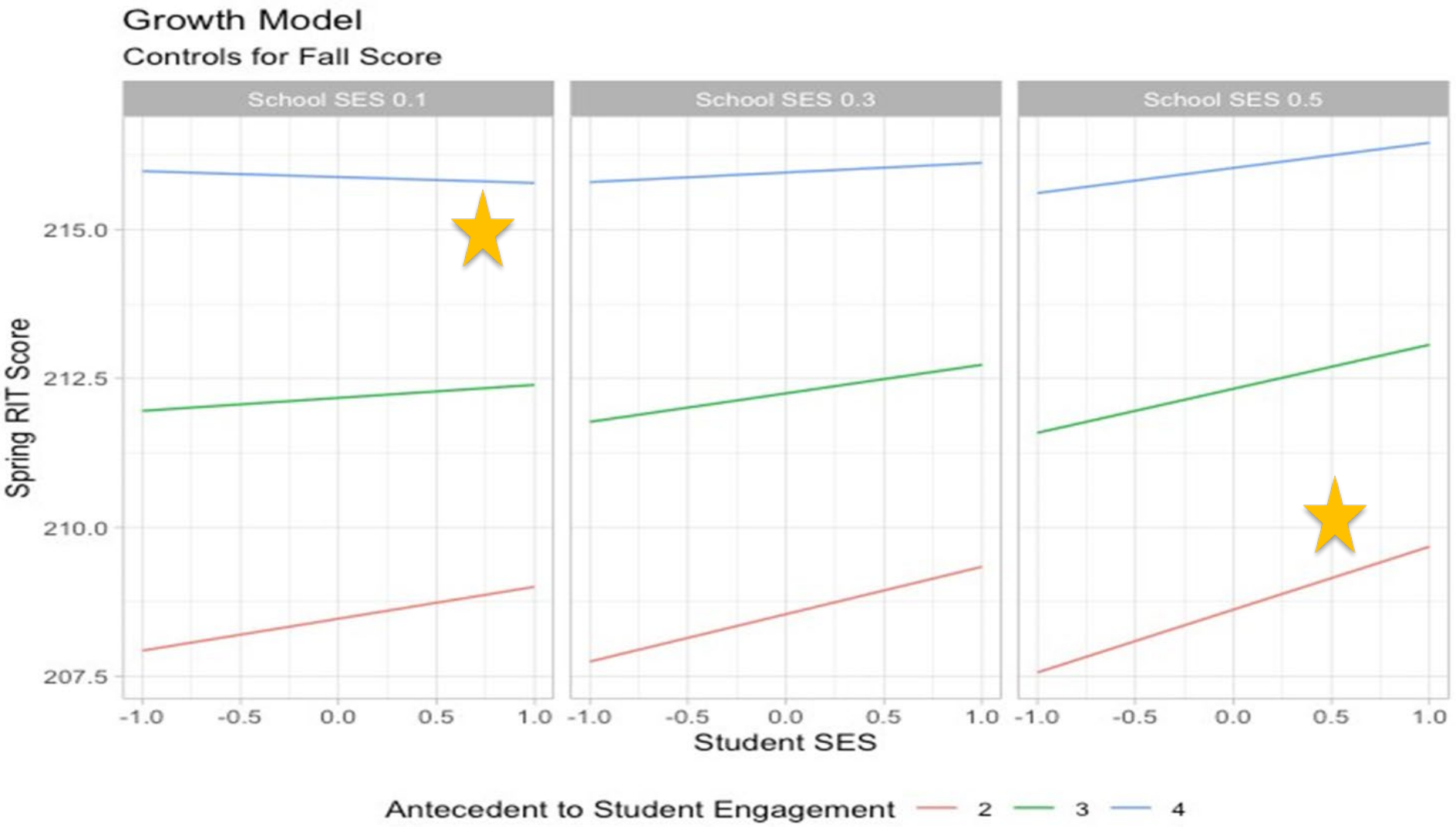


Antecedents to Student Engagement

Student Centered	Active Learners	Pace	Prior Knowledge to the Real World	Academic Questions	Academic Discussions	Interventions and Supports	Scaffolding
Observed instruction was primarily student-centered, with opportunities for students to demonstrate learning.	The teacher provides opportunities for students to discuss content, collaborate with other students, or reflect on their own learning.	The observer judged that the pace of the lesson was appropriate for student learning.	The teacher must consistently connect the learning objective to a student's prior knowledge of the real world.	The teacher must pose academic questions that deepen academic understanding and encourage elaboration on content or examination of reasoning.	Students should be consistently encouraged to engage in substantive academic discussions and make connections to prior or future learning.	The teacher provides specific interventions or additional supports within general instruction.	The teacher provides intentional scaffolding at a deliberate pace to progress students toward independence (I do, We do, You do).

Achievement Model




Growth Model
Controls for Fall Score
School SES 0.1
School SES 0.3
School SES 0.5
Spring RIT Score
215.0
212.5
210.0
207.5
-1.0
-0.5
0.0
0.5
1.0
Student SES
Antecedent to Student Engagement
2
3
4

Triangle-Square-Circle

3 significant ideas that I took away from the lesson...

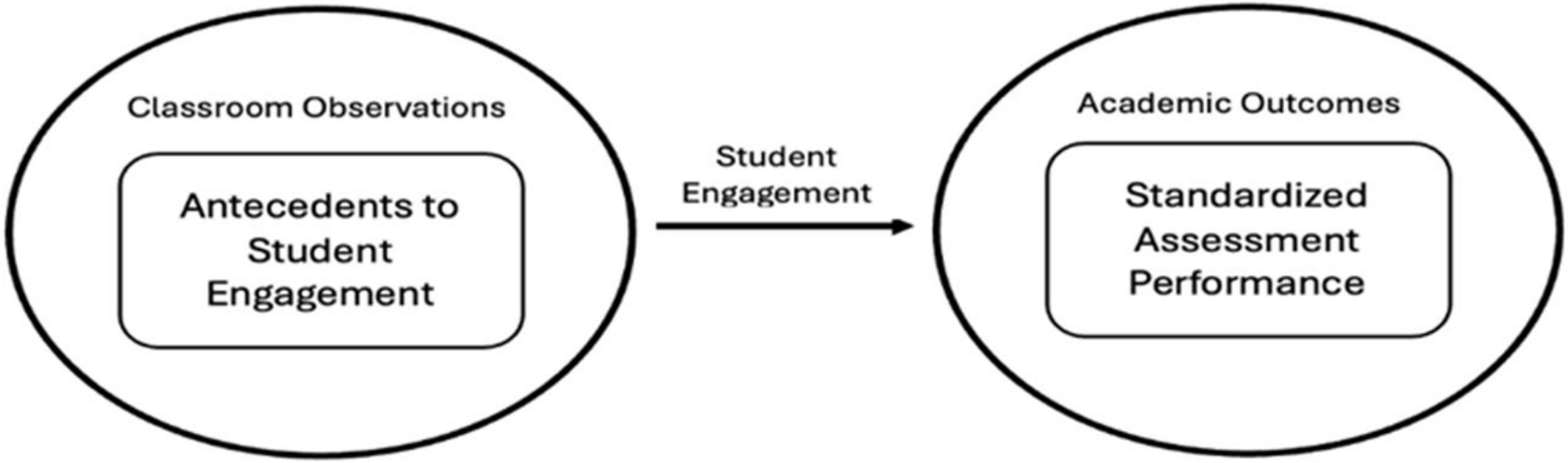
In pairs, students share with a partner for a predetermined time while the partner listens. Then partners switch roles.

Examples:

- What is the key thing that you learned?
- What is one literary technique you plan to use in your writing and how will you use it?

What one or two questions are still circling in my head?

Teaching is Like a Song: Conceptual Model



Discussion & Summary

- Our work demonstrates that these Antecedents to Student Engagement are positively associated with strong student outcomes as measured by standardized tests. This validates the focus on student engagement overall.

- We have shown that student growth associated with student engagement antecedents impacts all students regardless of socioeconomic status.

- To close achievement gaps, educators and policymakers must focus on those factors that benefit all students. The Antecedents to Student Engagement that we have outlined appear to do just that.

How could this be a part of your future work?

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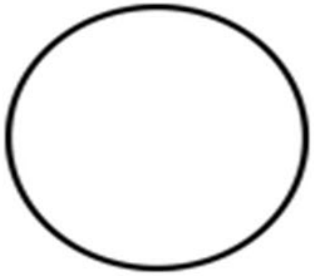
Triangle-Square-Circle

3 significant ideas that I **took away** from the lesson...

What concepts from the lesson are **squared away** in my mind?



What **one or two questions** are still circling in my head?

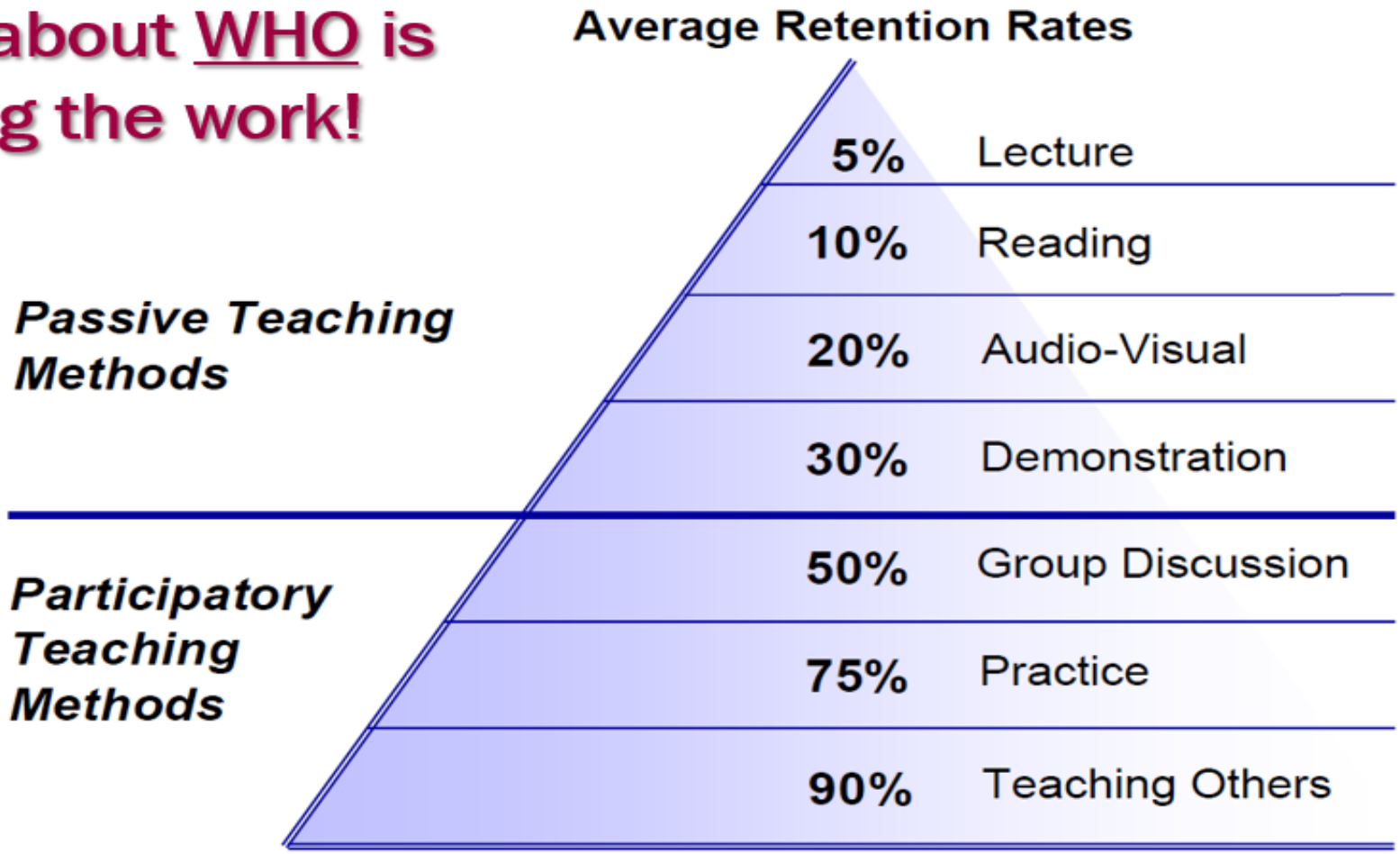
Learning Environments	Cognitive Challenge	Student Engagement
School1	School2	School2
School2	School1	School5
School3	School3	School1
School4	School5	School3
School5	School4	School4
School6	School7	School6
School7	School20	School10
School8	School13	School7
School9	School18	School8
School10	School11	School9
School11	School6	School18
School12	School10	School11
School13	School15	School13
School14	School9	School15
School15	School8	School12
School16	School12	School20
School17	School22	School21
School18	School16	School16
School19	School21	School14
School20	School14	School17
School21	School17	School22
School22	School19	School19
	<30 Growth, <30 Meeting Norm	
	≥44 Growth, <30 Meeting Norm	
	≥44 Growth, ≥44 Meeting Norm	

Antecedents to Student Engagement

Student Centered	Active Learners	Pace	Prior Knowledge to the Real World	Academic Questions	Academic Discussions	Interventions and Supports	Scaffolding
Observed instruction was primarily student-centered, with opportunities for students to demonstrate learning.	The teacher provides opportunities for students to discuss content, collaborate with other students, or reflect on their own learning.	The observer judged that the pace of the lesson was appropriate for student learning.	The teacher must consistently connect the learning objective to a student's prior knowledge of the real world.	The teacher must pose academic questions that deepen academic understanding and encourage elaboration on content or examination of reasoning.	Students should be consistently encouraged to engage in substantive academic discussions and make connections to prior or future learning.	The teacher provides specific interventions or additional supports within general instruction.	The teacher provides intentional scaffolding at a deliberate pace to progress students toward independence (I do, We do, You do).

The Learning Pyramid*

Think about WHO is doing the work!



*Adapted from National Training Laboratories. Bethel, Maine

Cognitive Engagement Continuum

Disengaged (complete disinterest and lack of motivation)	**Compliant** (willingness to perform at required level of behavior and cognition)	**Engaged** (active learning with cognitive challenge and piqued interest)
• Sleeping • Reading* • Doing other work • Writing notes* • Talking* • Playing around • Getting out of seat* • Using technology*	• Doing task required by teacher • Sitting quietly • Facing forward • Looking at teacher • Answering questions • Nodding	• Asking questions • Solving problems • Critically thinking • Discussing with peers • Researching/Exploring • Applying/Connecting • Analytically reasoning • Generating and testing hypothesis • Constructing/Creating • Critiquing • Responding in writing • Debating

**When not intentional for purpose of the lesson*

Teacher-Centered vs. Student-Centered Approach

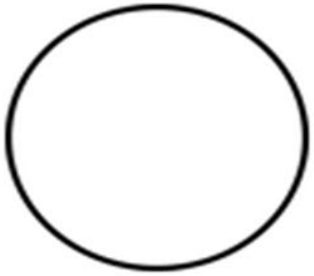
Teacher – Centered	Student - Centered
Focus is on the instructor	Focus is on both students and instructor
Instructor talks and students listen	Instructor models; students interact with instructor and each other
Students work alone	Students work in pairs, in groups or alone
Teacher monitors and corrects ever student reply	Students talk without constant instructor monitoring; instructor provides feedback and support
Instructor chooses topics	Students have some choice of topics and projects
Instructor evaluates student learning	Students evaluate their own learning; instructor also evaluates

Silent Self-Reflection: Which column do YOU fall into mostly?
Star one or two items in the "student-centered" column you aspire to improve upon.

Triangle-Square-Circle

3 significant ideas that I **took away** from the lesson...

What concepts from the lesson are **squared away** in my mind?



What **one or two questions** are still circling in my head?

Active Learning & Collaboration

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A Baker's Dozen Activities for the Active Learning Classroom

- Cooperative learning groups
- Inquiry-oriented activities
- Teacher demonstrations
- Teacher– student joint planning
- Use of hands-on, minds-on activities
- Use of Internet resources
- Use of instructional manipulatives
- Small-group discussions
- Student-conducted demonstrations
- Student-initiated projects
- Student portfolios
- Student presentations of work
- Student self-evaluations

Kagan Strategies: The Essential 5

In pairs, students alternate generating brief oral responses.

Examples:
- List adjectives to describe the character.
- List inert elements.
- Share steps of the experiment.
- Describe an event from the story.

In pairs, students share with a partner for a predetermined time while the partner listens. Then partners switch roles.

Examples:

Students stand up, put their hand up and quickly find a partner with whom to share or discuss.

This structure is perfect for classbuilding, processing and reviewing information, energizing the class, forming random pairs or teams, lesson starts or wraps.

partners switch roles.

- Useful for any process or procedure with a definite right/wrong.
- Solve multi-step word problems in math.
  - Change each decimal into a simplified fraction.

Students stand up, put their hand up and quickly find a partner with whom to share or discuss.

This structure is perfect for classbuilding, processing and reviewing information, energizing the class, forming random pairs or teams, lesson starts or wraps.

Academic Questioning & Discussion

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Recall

Note: Any question becomes a recall question if the answer has already been explicitly provided to the student in class or in the text.

When did _____ take place?
List the _____.

Define the term _____.
What is a _____?
Who did _____?
Name _____.

Inference

Hypothesize what will happen if _____.
Predict what will happen if _____.
Apply the rule to _____.
Solve the problem _____.
Predict how the story _____ will end.
What is the main idea of the story _____?
What is the overall theme of _____?
What is the moral of the story?
Develop of plan to _____.
Propose and describe an invention that fills some need.
Write a research paper on _____.

Based on your readings, what can you conclude about _____?
What was the author's point of view?
Solve a logic puzzle.
What if _____?
What rule applies here?
What generalization can you make from this information?
Create a _____.
Design a _____.
Propose a solution to the problem of _____

Analysis

How does _____ work?
Sort these _____.
Use the table to determine _____.
Use the graph to determine _____.
Graph _____.
What caused _____?
What is another possible cause of ____?
Outline the _____.
Based on the written description, draw a diagram.
Draw your own map of _____ without tracing or copying.
Use the map to determine _____.
In what sequence did _____ happen?
Break _____ down into its component parts.
Give an example of _____.
What literary form is being used?
What technique is being used?
What information is needed?
Is the information relevant?
Into what groups can you organize these?
Draw a picture that illustrates what's described in the story _____.

What does _____ symbolize?
Find examples of [a literary device] in your readings.
Analyze the _____ in _____.
Classify these _____ according to _____.
Separate the _____ from the _____.
Translate _____.
Analyze how _____.
Explain how _____ works.
What was the author's point of view?
How did the author convey _____?
What words does the author use to paint an image of _____ in your mind?
How were _____ used to _____?
What kind of a _____ is this?
Which one doesn't belong in this group?
What is the function of _____?
What is the purpose of _____?
What is the relationship between _____ and _____?
What is the pattern?
Use manipulatives to illustrate a concept.
Build a model of _____.
Measure _____.

Can you draw a diagram it illustrate this idea?	Assess Learning
What is the most important idea discussed today?	Assess Learning
Can you think of another way to solve that problem?	responding to peers
What do you think about the idea just presented by your classmate?	responding to peers
Would you say, then, that you disagree? Explain	refine statement
When does that principle apply? Always? Certain Conditions?	refine statement
How does this principle apply to the following situation?	Applying Knowledge
Under what conditions is this equation not valid?	Applying Knowledge
Can you point us to a specific part of the novel that led you to that conclusion?	Illustrate Concepts
Can you identify a painting, or design that exemplifies that idea?	Illustrate Concepts
How do you think that this issue is viewed by those with whom you disagree?	expand perspective
How does that concept apply to this new problem?	expand perspective
What are the assumptions that informed the design of this experiment?	Investigate thought process

Scaffolding

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Triangle-Square-Circle

3 significant ideas that I **took away** from the lesson...

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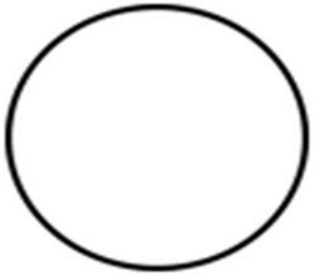

What **one or two questions** are still circling in my head?

Triangle-Square-Circle

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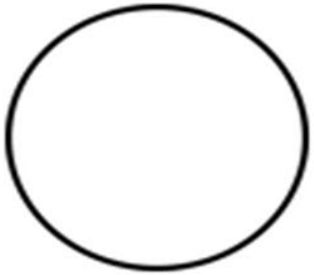

What **one or two questions** are still circling in my head?

W.O.W.
What am I Walking Out With?
(ACTION PLAN)

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