

Closing Learning Gaps with an AI Inquiry Cycle

Jamiylah Jones, Ed.D.

Founder and CEO, Creative Transformations

Scan for slides
and free resources



A TWO WEEK INVESTIGATION

Is the water in our community safe to drink?

To answer it, students work across every subject:

SCIENCE

Run the tests

MATH

Analyze the data

LANGUAGE ARTS

Write the findings

SOCIAL STUDIES

Research the history

PUBLIC SPEAKING

Present to the town

You record the scores.

And then we almost stop.

The instinct is to act.

The discipline is to understand first.

We are not short of data. We are short of explanation.

WHAT DATA GIVES US

Who is struggling

A score. A level. A name on a list.

WHAT IT WITHHOLDS

How and why they struggle

Which skill students are struggling with, and why.

WHAT WE STILL NEED

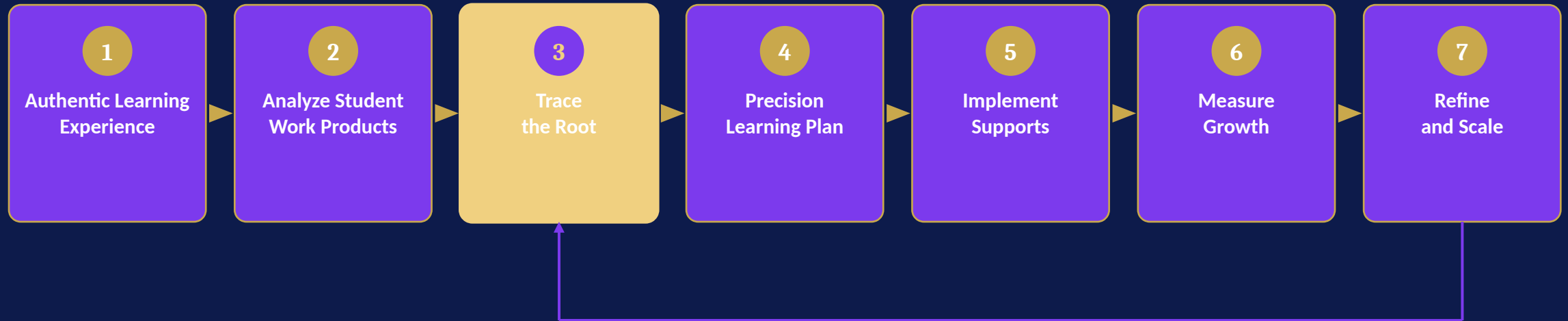
How to intervene

The intervention that closes the gap.

Data tells us who is struggling. It never tells us how, why, or how to intervene.

The AI Inquiry Cycle

Seven steps. One loop.



● Start with real work.

A task worth studying gives evidence worth studying.

● AI enters at three, not one.

First you gather evidence. Then you invite a thinking partner.

● The plan names people, not just problems.

Who teaches what, and when.

● It loops back, it does not stop.

If growth does not come, you return to the root.

The Seven Inquiry Questions (1 to 4)



What learning experience will produce evidence worth studying?

Give students work that reveals thinking. A rich task shows you how they reason, not just what they recall.



What is this student work telling us?

Study the work before grading it. Name what you see, plainly, before you explain why.



Why might these students be struggling?

Trace the symptom back to its root. This is the first place AI helps, and where literacy and numeracy surface.



What is the most precise intervention?

Match the intervention to the root, and name who is best positioned to deliver it.

The Seven Inquiry Questions (5 to 7)



How do we put that intervention into action?

Keep the intervention tied to the diagnosis, and make sure every teacher who works with the student knows the root.



What changed?

Collect new student work and measure it against the skill. Has the gap closed, or is the skill more developed than before?



What do we do next?

If the data shows the gap closing, scale the intervention. If it does not, trace again. The root may have been misidentified.

1

QUESTION ONE

What learning experience will produce evidence worth studying?

One task. Five products. Every one a window.

The question is not whether they can think in the abstract. It is whether they could produce what each subject asked for.



Where a student could not produce the product, the block is almost always literacy or numeracy.

2

QUESTION TWO

What is this student work telling us?

Two students. The same task.

The question was simple: is the water safe? Explain how you know.

STUDENT ONE | the writing

"First we filled the bottles. Then we tested the water. We wrote down what we found. Everyone worked hard and it was a fun project. I learned a lot about water."

THE TEACHER NOTICES

They never actually answered the question.

STUDENT TWO | the math

"The safe limit is 5. We took three readings: 4.6, 5.2, and 4.9. I added them and got 14.7, then divided by 3 for an average of 4.9. Since 4.9 is close to 5, the water is basically safe. And 5.2 has more digits so it is the highest, but it is only a little over, so it is probably fine."

THE TEACHER NOTICES

The reasoning is confused, but where exactly?

We can see something is wrong. Naming the exact root is the hard part. That is where AI helps.

3

QUESTION THREE | TRACE THE ROOT

Why might these students be struggling?

Give AI the work. Not the child.

WHAT GOES IN

- The assignment
- The rubric
- The student work product

WHAT NEVER GOES IN

- Educational history
- Cumulative records
- Confidential information

The prior performance data never goes in the prompt. It goes in me.

The analysis prompt | literacy

FOR THE WRITING — copy this, fill the four inputs

TASK: [paste or upload]

RUBRIC OR CRITERIA: [paste or upload]

WHAT THE STUDENT SHOULD DEMONSTRATE: [paste or upload]

STUDENT WORK: [paste or upload]

Compare the student work against the task, the criteria, and what the student was expected to demonstrate. Identify the specific literacy skills the student did and did not demonstrate. Name the two most likely root causes for the gap, and tell me where you are uncertain. Do not recommend fixes yet.

The rubric and the objective tell AI what good looks like. Without them, it is guessing.

The analysis prompt | numeracy

FOR THE MATH — copy this, fill the four inputs

TASK: [paste or upload]

RUBRIC OR CRITERIA: [paste or upload]

WHAT THE STUDENT SHOULD DEMONSTRATE: [paste or upload]

STUDENT WORK: [paste or upload]

Compare the student work against the task, the criteria, and what the student was expected to demonstrate. Walk through the student's reasoning step by step and mark each point where it breaks down. For each break, name the underlying numeracy concept the student has not grasped, and rank them from most to least foundational. Tell me where you are uncertain. Do not recommend fixes yet.

We ask AI to find the root and flag uncertainty. We never ask it to decide. That stays with us.

What AI surfaced

The teacher saw a problem. AI traced it to a specific, teachable root.

STUDENT ONE | literacy

AI proposes the root:

The student does not distinguish recounting an experience from making an argument. They can describe, but not claim and support.

AI flags uncertainty:

Whether they were never taught argument structure, or know it and did not apply it here.

STUDENT TWO | numeracy

AI proposes the root:

The student treats a limit as an approximation, not a fixed threshold. The place-value error is a second, separate gap.

AI flags uncertainty:

Which gap to teach first. That decision needs a teacher who knows this student.

AI proposes and flags what it cannot know. The teacher decides. That is the whole method.

4

QUESTION FOUR | PRECISION LEARNING PLAN

What is the best intervention?

The intervention plan prompt

One prompt. The diagnosed root goes in. A complete, teachable plan comes out.

COPY THIS. FILL THE THREE INPUTS.

THE ROOT: [the diagnosed root cause]

THE STUDENT WORK: [the original work sample]

THE CONTEXT: [grade, timeframe, and which teachers work with this student]

Using the diagnosed root, build a complete intervention plan. Return it in six labeled sections:

- 1. THE INTERVENTION** how every teacher who works with this student reinforces the same root.
- 2. THE TIMELINE** when each support happens, in small steps inside existing lessons.
- 3. THE BENCHMARKS** what the student should be able to do at each checkpoint.
- 4. THE MONITORING** what work to collect and when, to know whether the gap is closing.
- 5. THE MATERIALS** the mini-lesson, practice, and home support, ready to use.
- 6. THE ASSESSMENT** for each intervention, the observable evidence that shows it worked.

The assessment is built in, so every support has a way to prove it moved the skill.

Student One | the plan

Root: the student can describe what happened, but cannot yet make a claim and support it.

WHAT AI PROPOSED, WITH A BUILT-IN CHECK

INTERVENTION

Claim-and-evidence mini-lesson

Sentence-starter scaffolds

Cross-subject reinforcement

WHO

ELA teacher

Every writing teacher

Science and social studies

HOW WE CHECK IT WORKED

Student states a claim with evidence in a short writing sample. Yes or no.

Student uses the claim structure without the scaffold within two weeks.

Teachers spot one clear claim in the student's work in their subject.

Every intervention carries its own check. If it worked, the evidence is observable.

Student One | the mini-lesson and support

THE 15-MINUTE MINI-LESSON

Model Show two responses side by side, one that retells, one that makes a claim.

Guided Write one claim with one piece of evidence together.

Independent Students revise their own retell into a claim.

Check (the assessment) Collect the independent sentence. Did they state a claim with evidence, yes or no? That is the record of progress.

HOME AND CROSS-SUBJECT SUPPORT

At home What is your claim, and what is your reason? No worksheet needed.

In science The lab writeup asks for a claim about the results.

In social studies State your position replaces describe what happened.

The check is the assessment. It becomes the fresh work we feed back to AI to measure growth.

Student Two | the plan

Root: the student treats a limit as an approximation, and misreads decimal place value.

WHAT AI PROPOSED, WITH A BUILT-IN CHECK		
INTERVENTION	WHO	HOW WE CHECK IT WORKED
Number-line and threshold mini-lesson	Math teacher	Student correctly judges three readings as over or under a limit. Yes or no.
Place-value comparison practice	Math teacher	Student picks the larger decimal in five of five pairs.
Cross-subject reinforcement	Science and data classes	Student compares a reading to its limit correctly in a science task.

Every intervention carries its own check. If it worked, the evidence is observable.

Student Two | the mini-lesson and support

THE 15-MINUTE MINI-LESSON

Model Place 4.6, 4.9, and 5.2 on a number line against a limit of 5. Show which cross.

Guided Judge three readings as pass or fail against the limit. No averaging.

Independent Students compare decimal pairs and mark which is larger.

Check (the assessment) Collect the independent comparisons. Did they judge over or under the limit correctly, yes or no? That is the record of progress.

HOME AND CROSS-SUBJECT SUPPORT

At home Which is more, and how do you know? Compare two prices or measurements.

In science Every measurement gets checked against its safe range.

Across subjects Is this over or under the line? becomes routine.

The check is the assessment. It becomes the fresh work we feed back to AI to measure growth.

5

QUESTION FIVE | IMPLEMENT SUPPORTS

How do we put that intervention into action?

Ways to deliver the intervention

The same root can be addressed different ways. Match the method to the student's need and the time you have.

LOWER TEACHER TIME

Self-guided materials

Worksheets with highlighted worked examples, spelled-out steps, and clear procedures the student can follow on their own.

Digital platforms

Short video explanations with visuals, like Khan Academy, with built-in assessments. Those results become fresh data you feed back into the re-assessment prompt.

HIGHER TEACHER TIME

One-on-one conferring

A targeted conference with the student, high-impact for a specific misconception.

Small-group instruction

Pull the few students who share the same root and teach them together.

*Low-touch options widen your reach. High-touch options go deeper. **The best plans mix both.***

But I still have my own content to teach.

The most common objection. Plan for it before it is asked.



It lives inside the lesson, not beside it

The prerequisite is taught through the content you are already teaching, not as a separate class.



Ten minutes, not a unit

Each teacher's action is small by design. The plan spreads the load so no one loses a period.



The AI did the planning

The time cost is in the teaching, not the preparation. The prompts already built the materials.

6

QUESTION SIX | MEASURE GROWTH

What changed?

The re-assessment prompt

The intervention ran. Now we feed the new work back to AI and measure growth against the root.

COPY THIS. FILL THE FOUR INPUTS.

THE ROOT: [the original diagnosis]

THE ORIGINAL WORK: [the first work sample]

THE NEW WORK: [the work collected after the intervention]

THE BENCHMARK: [what growth should look like]

Compare the new work to the original against the root. Has the specific skill grown? Rate the growth against the benchmark. Tell me what evidence shows it, where the student still falls short, and whether to scale, continue, or re-trace.

We measured the root going in. Now we measure the same root coming out. That closes the loop.

What changed?

We measure the skill, not just the score.

FOR ONE STUDENT

Did the student improve in the skill we targeted?

Return to fresh work. Look for the specific skill, not a general grade.

FOR A GROUP

Did the group of students needing that support get smaller?

The pattern shrinks when the intervention works. That is the signal.

Growth is the goal, not activity.

7

QUESTION SEVEN | REFINE AND SCALE

What do we do next?

What if the benchmark isn't met in time?

This is rarely failure. It usually means one of these, and each points to a different fix.

- 1 **The timeline was too short.** The student is making real progress, just not finished. Extend and stay the course.
- 2 **The intervention wasn't the right fit.** Same root, but this child needed a different approach or modality.
- 3 **A prerequisite skill is missing.** There is an earlier skill underneath this one that has to come first.
- 4 **The root was misdiagnosed.** If the support was sound and nothing moved, go back to Trace the Root.
- 5 **The dosage was too light.** The right support, but not frequent or intensive enough to move the skill.
- 6 **Something outside the skill interferes.** Attendance, language, or an unmet need is blocking academic progress.
- 7 **The measure missed the growth.** The student may have grown in a way the benchmark task did not capture.

Do not defend your first answer. Diagnose why it fell short, then improve your next one.

When it is not one student.

If the same root appears beyond one child, the response changes scale.

ONE STUDENT

A precision plan

The intervention prompt you just saw.

A GROUP

A shared intervention

One plan, one team, many students.

GRADE-WIDE

A grade-level response

Common planning and aligned instruction.

DIVISION OR SCHOOL-WIDE

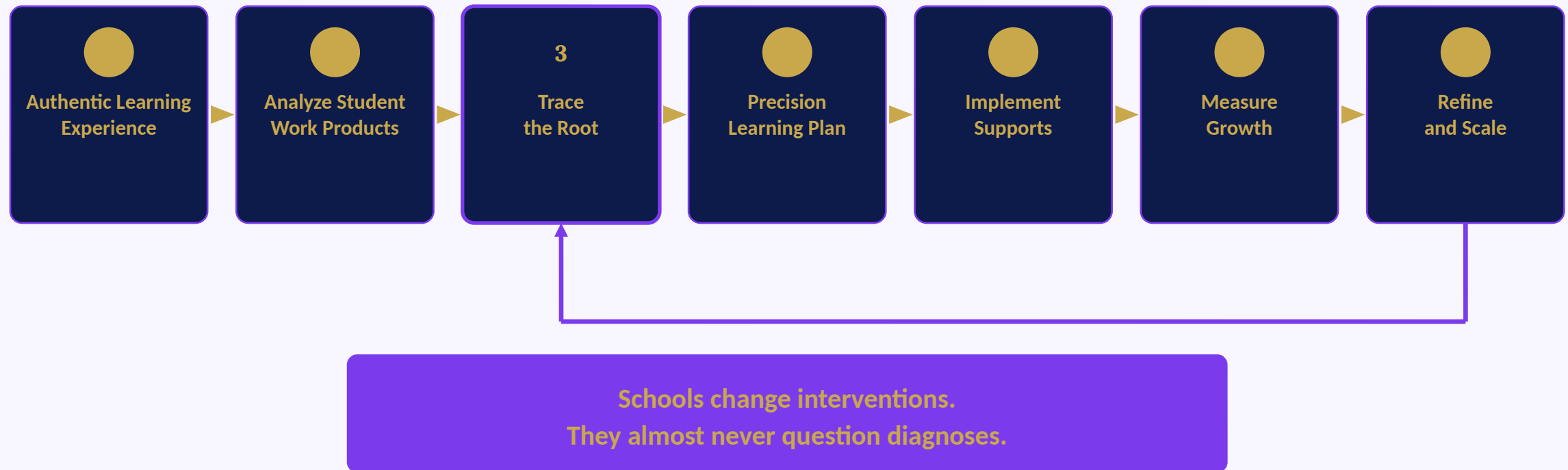
A systemic response

Curriculum, scheduling, and leadership act.

AI finds the pattern no single teacher can see. Leaders decide what the pattern requires.

That is what makes it a cycle.

Not the arrows. The discipline to return when the evidence does not improve.



**Sometimes what we call a learning deficit
is really an instructional absence.**

**The most precise response is not always another lesson.
Sometimes it is another teacher.**

Before you leave, make one commitment.

1

One class.

2

One piece of student work.

3

One colleague you will tell before Friday.

The last one is what makes it real. Everything else is intention.

Everything is in the handout.

**PASTE
QR CODE**

- The Seven Inquiry Questions
- The AI Inquiry Cycle protocol
- The sample prompts
- The planning template

The future of education will not belong
to the schools that collect the most data.

**It will belong to the schools
that understand it best.**

Thank you. | Jamiylah Jones, Ed.D. | creativetransformations.consulting

Scan for slides
and free resources

