

# Overview of Formative Assessment

---

## Margaret Heritage KSDE Formative Assessment Professional Learning

Topeka, KS  
August 1, 2016

# Overview

- What is formative assessment (and why should we care about it?)
- Formative assessment in a comprehensive assessment system
- A feedback loop
- Expertise in formative assessment
- Classroom considerations

# **What is Formative Assessment (And Why Should We Care About It)?**

# What is formative assessment?

Formative assessment is the term used to describe a type of assessment where the focus is on **informing** learning, rather than measuring it or summing it up.

Assessment which focuses on the learning **as it is taking place**

Purpose is to **move learning forward** from its **current status**



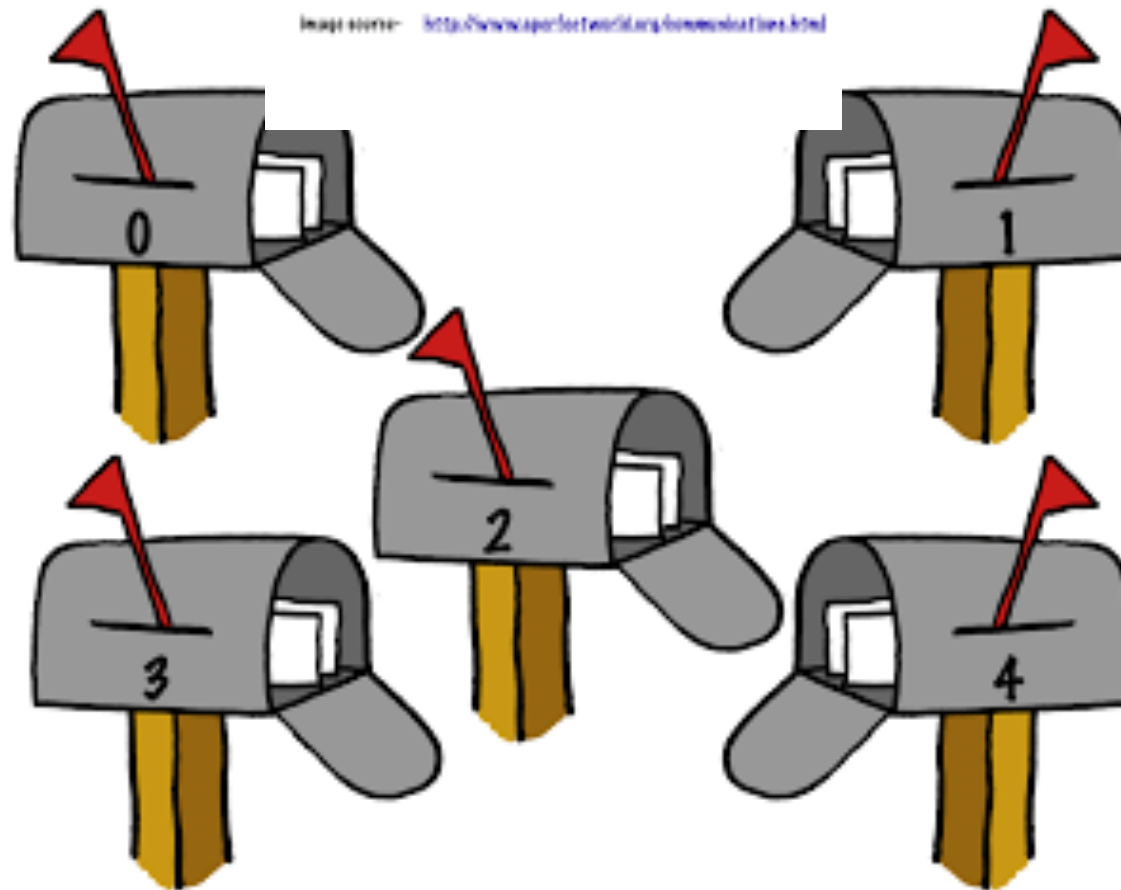
# Jerome Bruner



Good teaching is  
forever being on  
the cutting edge of  
a child's  
competence.

# From Delivering Instruction

---



# To Supporting Learning



*Heritage, 2013; Heritage, Walqui & Linquanti, 2013, 2015*



*Charlie Chew*  
*Principal Master Teacher*  
*Singapore*



“I don’t teach physics; I teach my pupils to learn physics.”

*Charlie Chew*

*Principal Master Teacher*

*Singapore*



**Use and connect mathematical representations****Teacher and student actions****What are *teachers* doing?**

Selecting tasks that allow students to decide which representations to use in making sense of the problems.

Allocating substantial instructional time for students to use, discuss, and make connections among representations.

Introducing forms of representations that can be useful to students.

Asking students to make math drawings or use other visual supports to explain and justify their reasoning.

Focusing students' attention on the structure or essential features of mathematical ideas that appear, regardless of the representation.

Designing ways to elicit and assess students' abilities to use representations meaningfully to solve problems.

**What are *students* doing?**

Using multiple forms of representations to make sense of and understand mathematics.

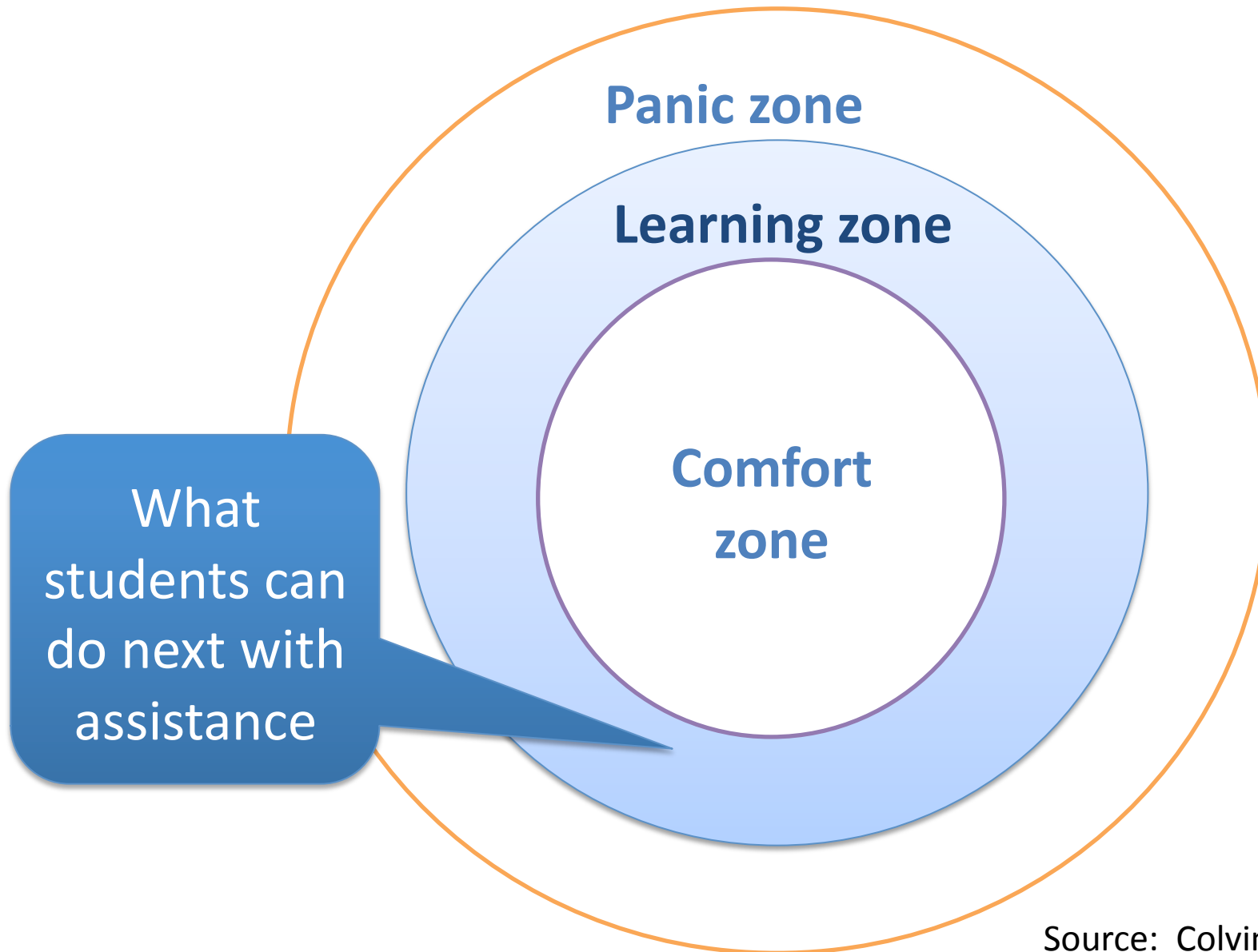
Describing and justifying their mathematical understanding and reasoning with drawings, diagrams, and other representations.

Making choices about which forms of representations to use as tools for solving problems.

Sketching diagrams to make sense of problem situations.

Contextualizing mathematical ideas by connecting them to real-world situations.

Considering the advantages or suitability of using various representations when solving problems.



Source: Colvin, 2009

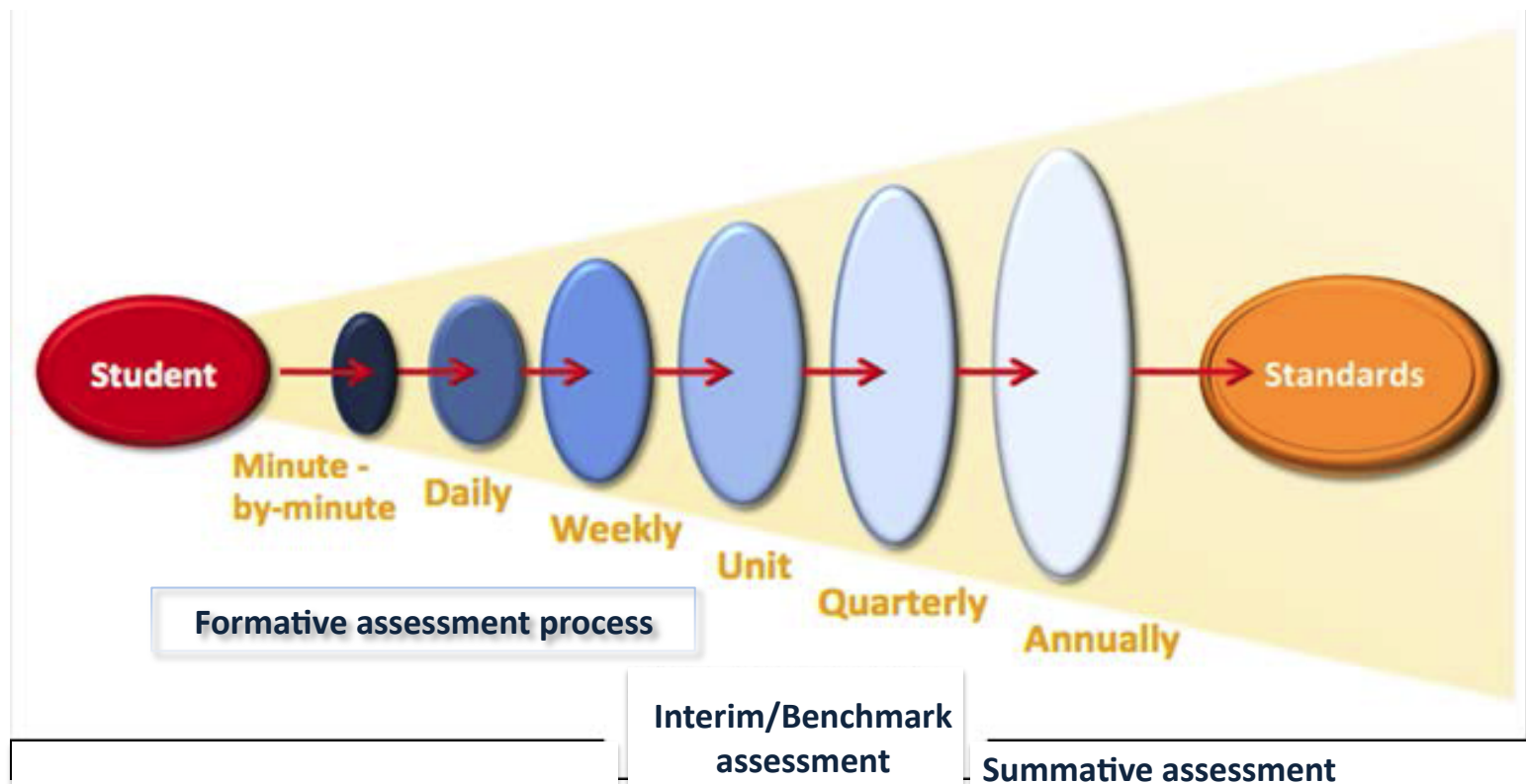
# **Formative Assessment in a Comprehensive Assessment System**



# One Size Does Not Fit All



# Assessment in the System



(CDE ELA/ELD Curriculum Framework, 2014, adapted from Herman & Heritage, 2007)

Formative assessment is not a measure of achievement; it is a cause of achievement.

FAST SCASS, 2016

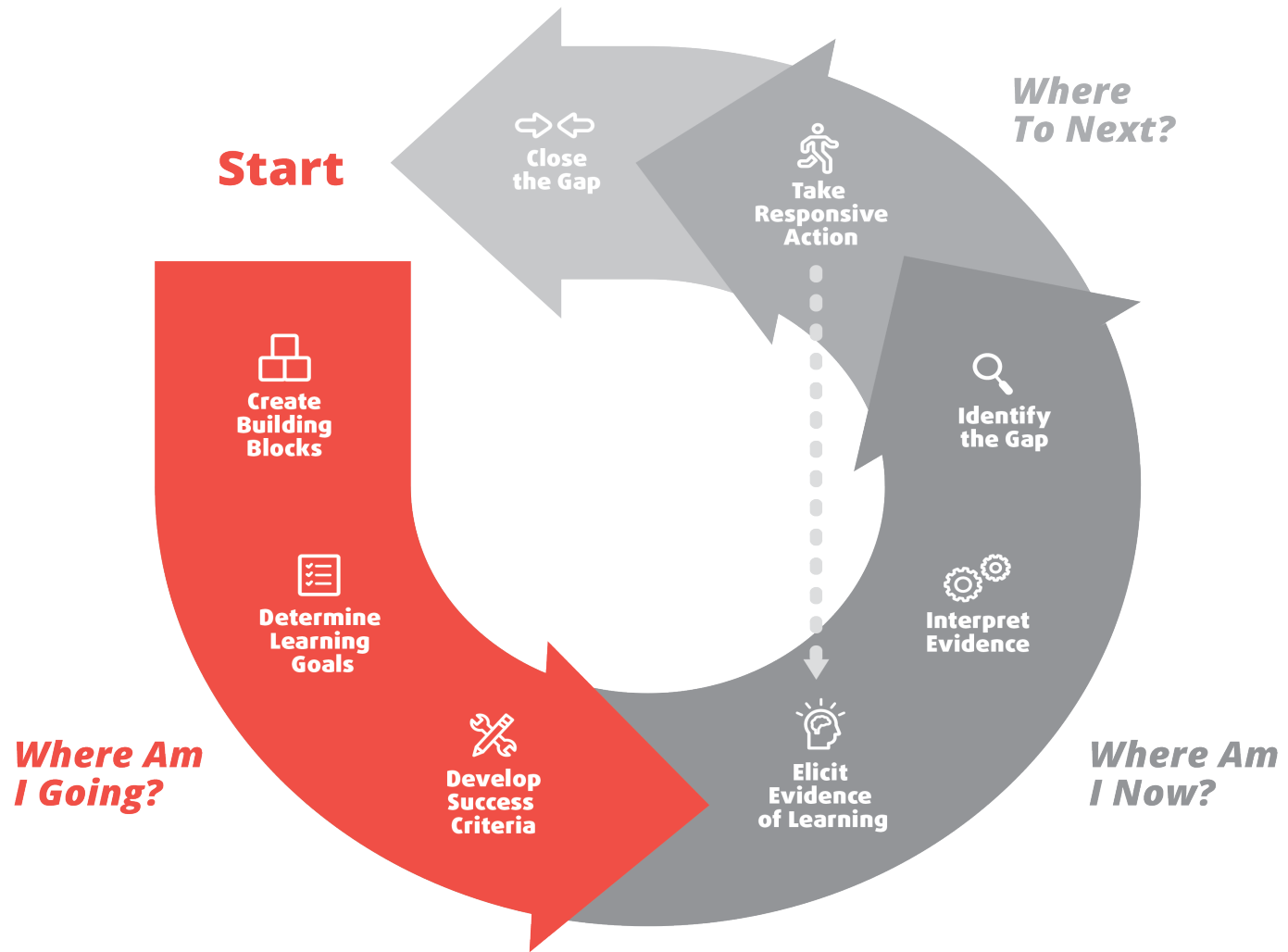
# **A Feedback Loop**

# Guiding Questions

- Where am I going?
- Where am I now?
- Where to next?



# Where Am I Going?



# Sharon's Learning Goals & Success Criteria

---

## Learning Goals

Understand the structure of a coordinate grid



Relate the procedure of plotting points in quadrants to the structure of a coordinate grid



## Success Criteria

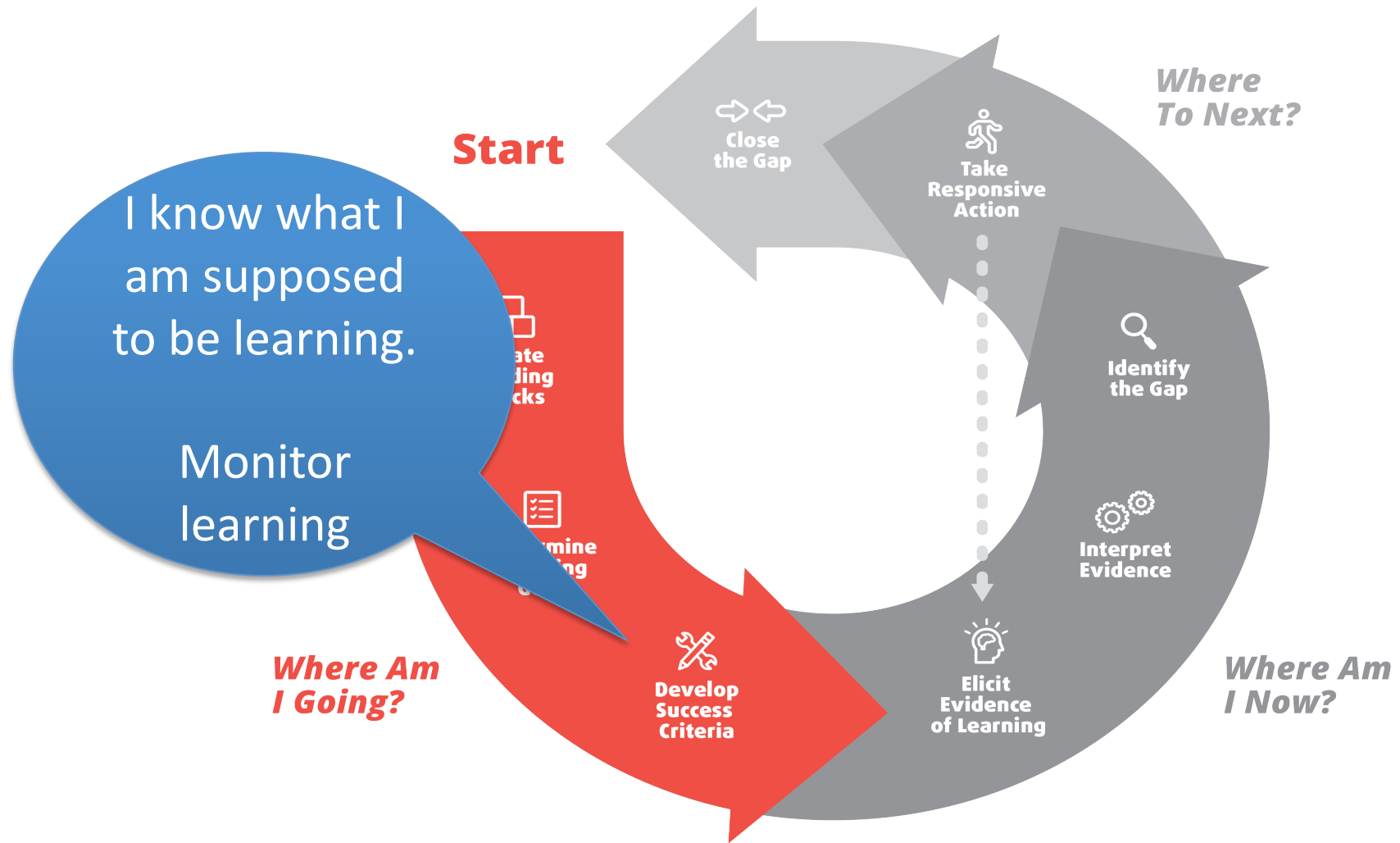
I can talk & write about plotting points on a coordinate grid using correct vocabulary

I can plot and label points in each quadrant on a coordinate grid

I can create a rule about coordinate for each quadrant



# Where Am I Going?



# Where Am I Now?



# Planned Evidence Gathering

---

## Start of Lesson



**Strategy:**  
*Vocabulary “Whip Around” to elicit prior knowledge and see how students understand the concept*

**Opening Question:**  
*What comes to mind when you think of coordinate graphing?*

**Success Criteria:**  
*Targeted vocabulary use: origin, x-axis, y-axis, coordinates, quadrant (SC1)*

## Middle of Lesson



**Strategy:**  
*Walk coordinates to label each location on large graph (SC2).*

*Describe the process verbally using correct vocabulary (SC1)*

**Strategy**  
*Plot and label points in four quadrants to individually-design a fictional town “Robertsville” (SC1,2).*

## End of Lesson

**Strategy:**  
*Generalize quadrant locations for set of coordinates verbally and in writing-cooperative groups (SC3)*

**Strategy:**  
*Chart created rules for each quadrant & gallery walk (SC3).*

**Strategy**  
*Reflection-self assessment (SC1, SC2, SC3)*

# Eliciting Evidence

---

Key discussion questions posed by teacher during instruction:

## Start of Lesson



## Middle of Lesson



## End of Lesson

*Are we in agreement with these definitions?*

*How might we make definitions more clear?*

*Are any big ideas missing?*

*How might some of these terms go together?*

*Where should you start?*

*How would you label this point? How do you know?*

*Tell me your thinking.*

*How do you know you've plotted this point correctly?*

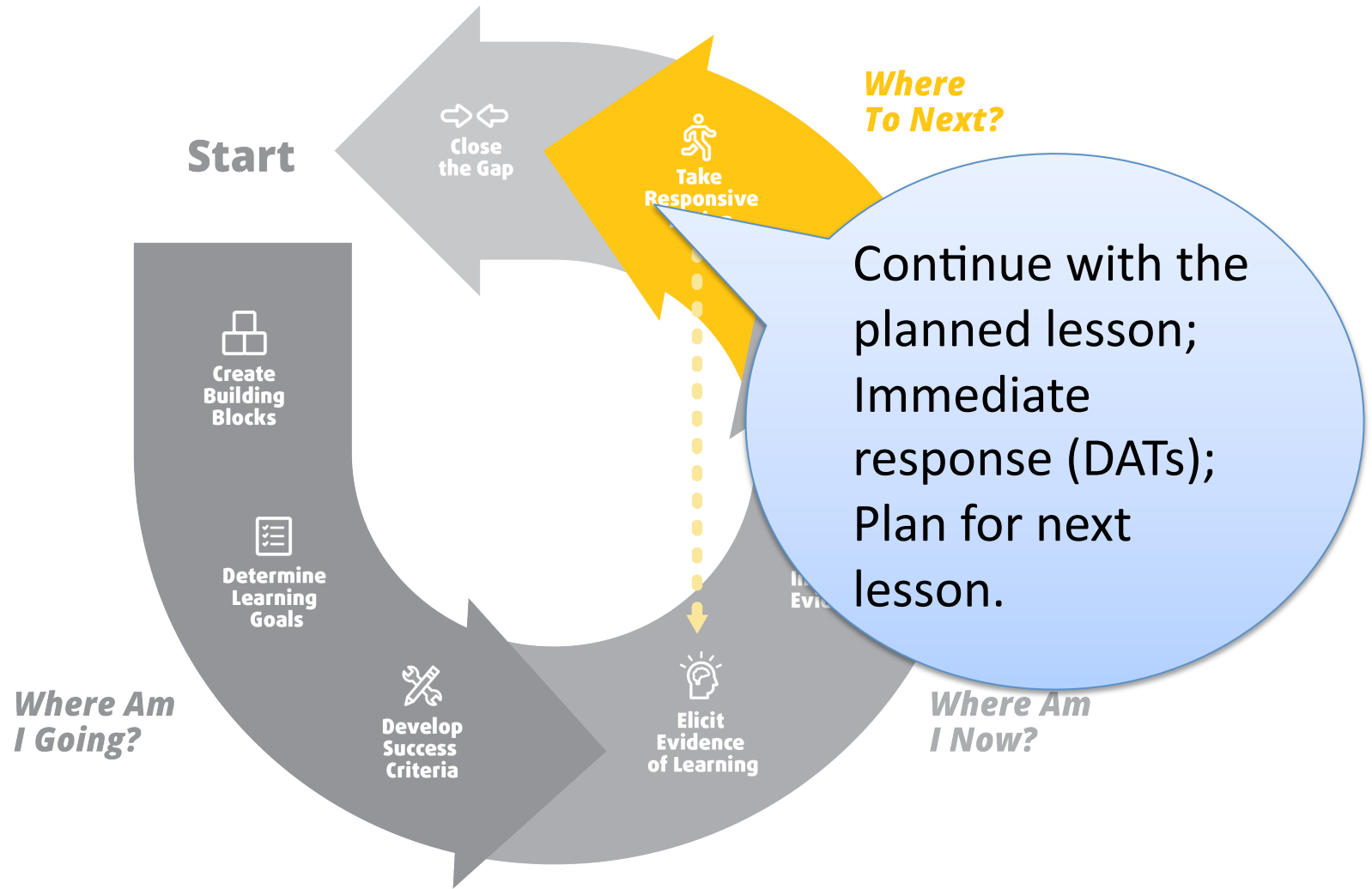
*What are you noticing about all the coordinates in this quadrant?*

*How are the coordinates alike? Different?*

*How might you develop a rule for all the coordinates in this quadrant?*

*How can you organize the coordinates in Quadrant 1 so you can analyze them? (a list, chart, table...)*

# Where To Next?



# Deliberate Acts of Teaching

- *Modeling*
- *Explaining*
- *Questioning*
- *Prompting*
- *Telling*
- *Feedback*

# What Works Best? (Hattie, 2009)

<u>Influence</u>	<u>Effect size</u>
<b>Feedback</b>	<b>0.73</b>
Teacher–student relationships	0.72
Not-labelling students	0.61
Challenging Goals	0.56
Peer-tutoring	0.55
Teacher expectations	0.43
<hr/>	
Frequent testing	0.34
Homework	0.29
Class size	0.21
Ability grouping	0.12

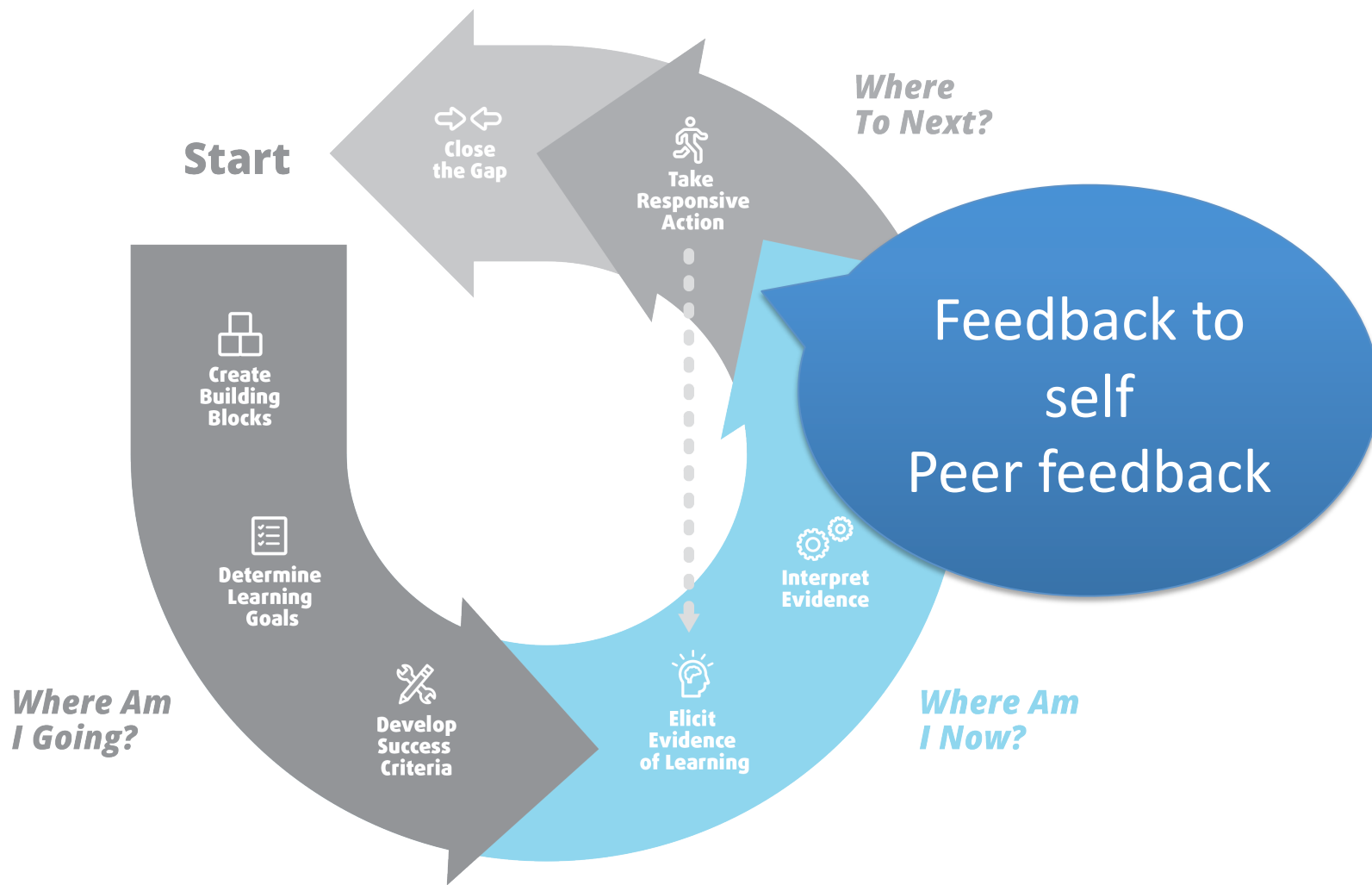
# Feedback Should...



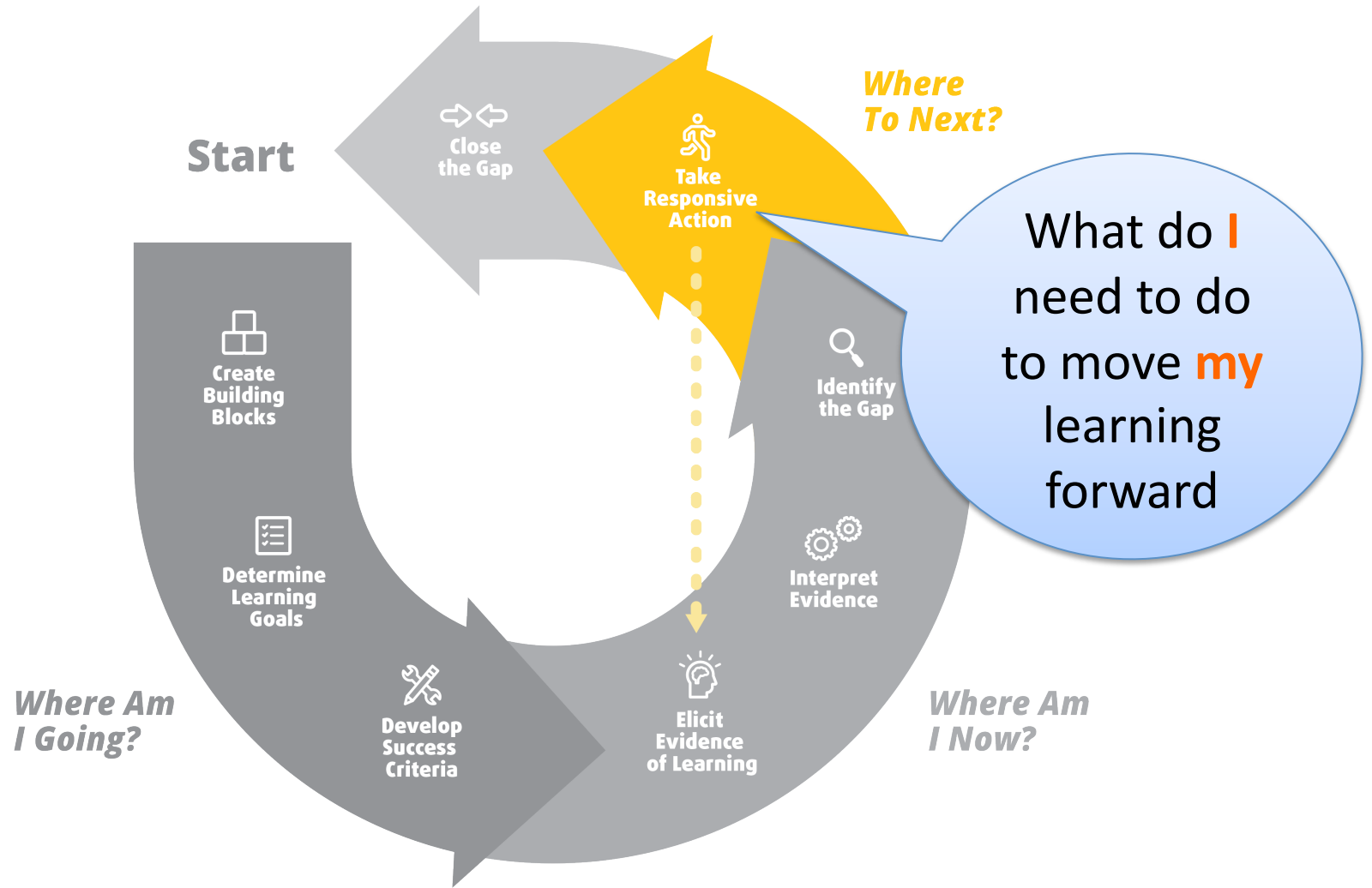
- Provide the learner with suggestions, hints or cues for how to improve rather than correct answers
- Focus on the learning and not on the individual
- Engage students' thinking



# Where Am I Now?



# Where To Next?





*Consistency of principle, not uniformity of practice.*

Harrison & Howard, 2009

# **Expertise in Formative Assessment**

# Teachers who are

## Expert in Formative Assessment

- Collect evidence of student thinking (quality of thinking)
- Interpret student responses in terms of what students are thinking
- Consider what feedback or immediate next step in instruction will move learning forward

## Not expert in Formative Assessment

- Collect evidence of student performance (quantity of thinking)
- Evaluate the correctness of responses
- Re-teach topics based on percent correct

[Minstrell, Anderson, & Li (2009); Hattie (2009); Hattie & Timperley (2007); Kroog, Ruiz-Primo, & Sands (2014)]

# Teachers who are

## Expert in Formative Assessment

- Support learning as it is developing
- Actively involve students in the assessment process
- Share responsibility for learning with students

## Not expert in Formative Assessment

- Deliver instruction
- Give students test results
- Focus on instructing students

[Cowie, Harrison & Willis, 2016; Heritage, 2010, 2013)

Students actually **DO** the learning



# Students who are

## Expert in Formative Assessment

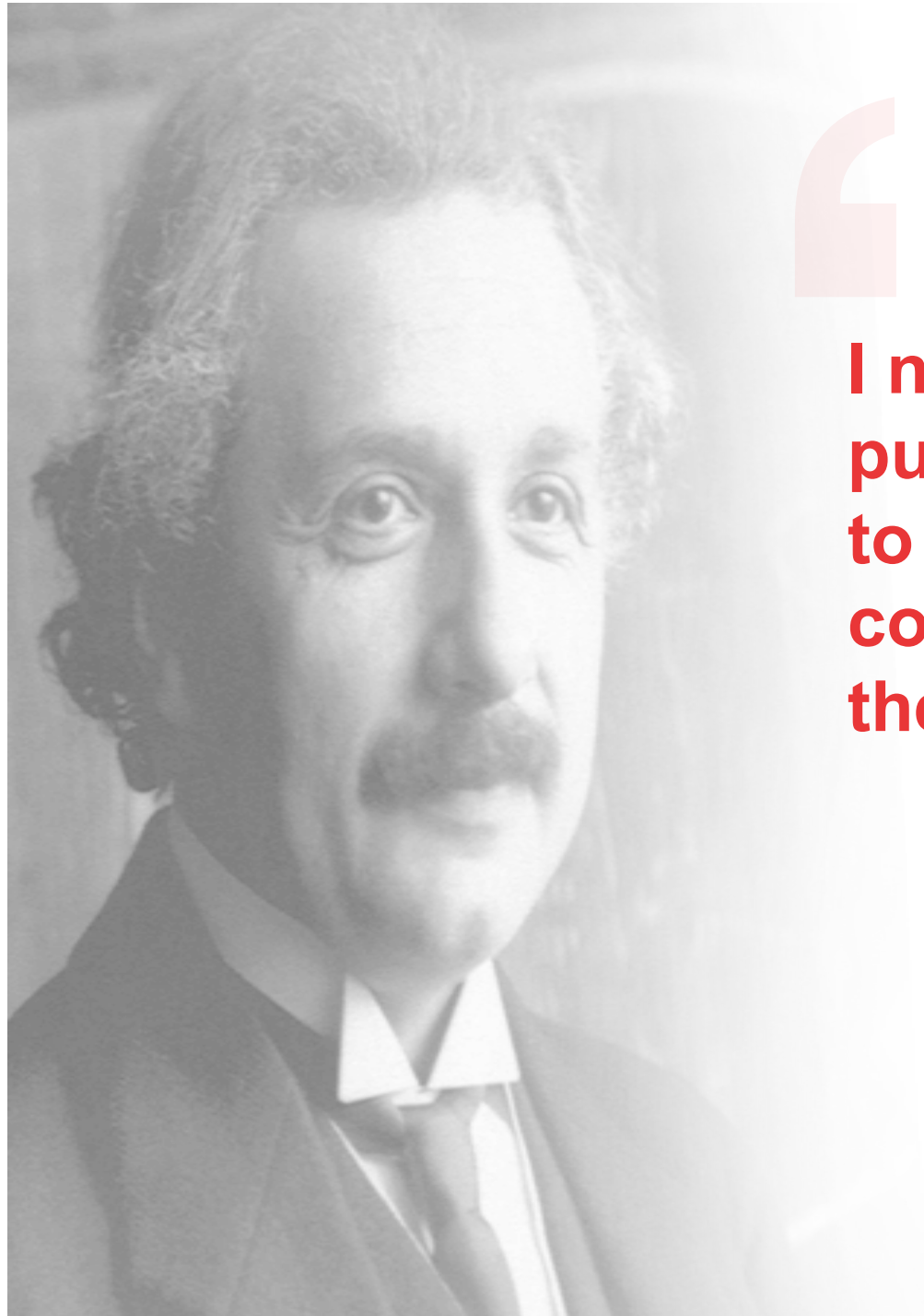
- Generate personal feedback loops
- Set goals
- Adapt learning tactics
- Make decisions about feedback use
- Provide effective feedback to peers

## Not expert in Formative Assessment

- Comply with teaching/learning directions
- Complete assignments
- Make judgments about their learning based on a grade
- Rely on grades for motivation
- Regard learning as a private activity



# **Classroom Conditions**



**I never teach my pupils. I only attempt to provide the conditions in which they can learn.**

*- Albert Einstein*

