

Developing a Theory of Action for Your Balanced Assessment System: How to Develop One and What To Do With It

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CCSSO Balanced Assessment SCASS

January 28, 2021

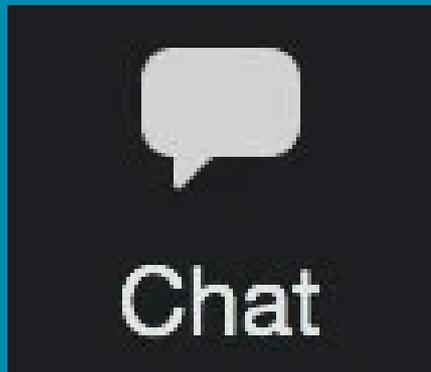


Session Objectives

1. Deepen **understanding of theories of action** in the context of balanced assessment systems
2. Make explicit some **key design decisions** that go into constructing and using theories of action for balanced assessment systems
3. **Illustrate those decisions** and their implications through examples
4. Help the Balanced Assessment Systems SCASS and individual members **move forward** in establishing tools, supports, and theories of action

Session Agenda

1. A Reintroduction to Balanced Assessment Systems (BAS) and Theories of Action (ToA)
2. Development of ToA
 - How to write a ToA: structure and process
 - How to use a ToA
3. Example Use Cases:
 - Using interims for summative in accountability
 - Clarifying instructional uses
4. Reconsidering Balanced Assessment Systems and Theories of Action



⌘ Please use the chat to pose questions as we go along

⌘ We'll do our best to address questions:

- At the end of each section, or
- In a written follow up after the meeting



A Reintroduction to Balanced Assessment Systems and Theory of Action

1. A Reintroduction BAS & TOA
2. ToA Development
3. Example Use Cases
4. Reconsidering BAS and ToA

Section Agenda

Balanced Assessment System

- Definition
- Description & Components
- Criteria
- Barriers

Theory of Action

- Definition
- Description & Components

Section Agenda

Balanced Assessment System

- **Definition**
- Description & Components
- Criteria
- Barriers

Theory of Action

- **Definition**
- Description & Components

Current Definitions

Balanced Assessment System

Definitions: many, varied, useful, but **not unified yet**

⌘ Working towards: informed, hopefully *common* definition for “Balanced Assessment Systems”

Revising the Definition of Formative Assessment

By the Formative Assessment for Students and Teachers (FAST)
State Collaborative on Assessment and Student Standards (SCASS)

The FAST SCASS thanks Caroline Wylie for her advice on the preparation of this paper

Theory of Action

Definition: Agreement that a ToA describes *how* a goal (outcome) is intended to be achieved; important for informing balanced assessment systems



Definition: Balanced Assessment System



Definition: Theory of Action

A theory of action outlines the **components of the system**, while clearly specifying the **connections among these components**. Most importantly, a theory of action must specify the **hypothesized mechanisms or processes for bringing about intended goals**...the theory of action should describe how the **particular clear goals** will be achieved as a result of the proposed...system(s).

-*Marion, Lyons & D'Brot (2016)*

Section Agenda

Balanced Assessment System

- Definition
- **Description & Components**
- Criteria
- Barriers

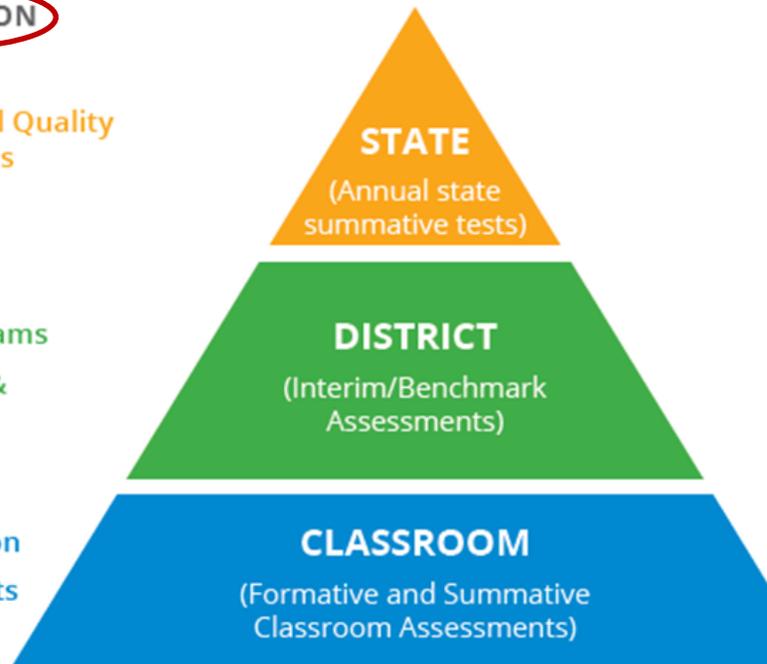
Theory of Action

- Definition
- **Description & Components**

What is a Balanced Assessment System ?

MAIN PURPOSES AND USES OF ASSESSMENT INFORMATION

- Evaluate Learning, School Quality (Accountability), & Policies
- Predict Learning
- Evaluate Curricula/Programs
- Inform student services & placement decisions
- Monitor/Adjust Instruction
- Inform Parents & Students about Learning Progress



- There are multiple layers of an assessment system.
- The purposes and uses of assessment information differ at each layer.
- It is important to guard against practices that might have a negative impact on classroom instruction (e.g., teaching to the test, over-testing, narrowing of the curriculum, etc.).

What is a **Balanced Assessment System** ?

Multiple assessments with potentially **different designs**, sponsored by different people, who are at **different levels of control**

• Evaluate Learning, School Quality (Accountability), & Policies

• The purposes and uses of assessment information

Coordinated by a **common theory of learning**

• Monitor/Adjust Instruction

CLASSROOM

• impact on classroom instruction (e.g., teaching to the test, over-testing)

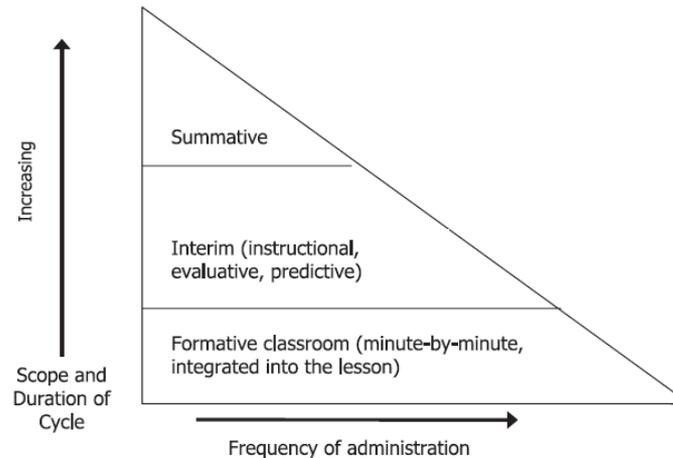
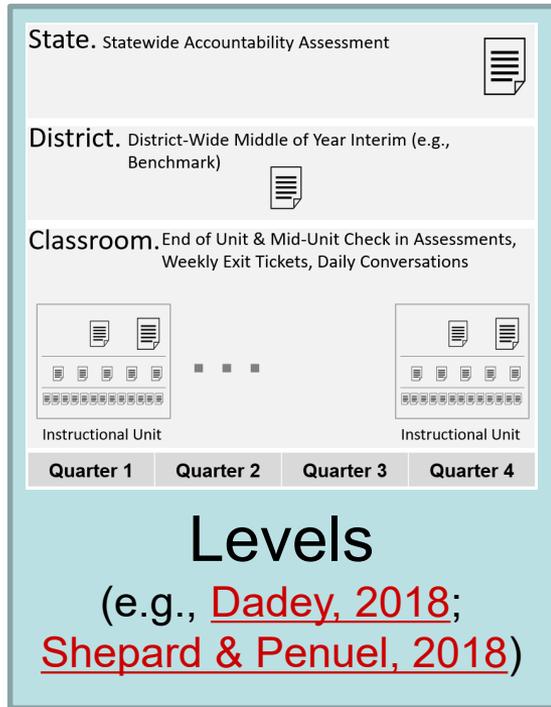
Working together to meet a **specific use or uses.**

What is being balanced?

Some Different Focal Areas for Creating a “Balanced” Assessment System

What	Current	Move Balance Towards
Layer	State	International, national, state, district, school, classroom, student
Assessment types and information	State summative for individual students, student groups, and schools	District summative, classroom summative, classroom formative, etc.
Performance aspect	Proficiency status, annual growth	Mastery of competencies, within-year growth, diagnoses of weaknesses, etc.
Academic content areas	ELA, math, science	Social studies, art, music, health, CTE, etc.
Whole Child	Academic content areas	Socio-emotional, collaborative problem solving, multicultural, attendance, etc.
Format/Construct	Thin performance, e.g., multiple choice	Thick performance, “deeper learning”
Quality/access	Lower quality commercial or local assessments	Higher quality assessments provided or identified by state
Control	External/top-down	Internal, e.g., student choice/voice
Commonality	Common, highly standardized	More flexible, more individualized
Theory of action	Accountability	Instruction, curriculum, etc.
Focus for reform	Assessments	Curriculum, school structures, etc.

Conceptualizing the Components of a **BAS**



Type or Tier
(e.g., [Perie, Marion & Gong, 2009](#); [Sigman & Mancuso, 2017](#))

- Monitoring
- Classroom
- OTL

Purpose
(e.g., [NRC, 2014](#))

To a large degree, these conceptualizations (or others!) shape how we design systems as well as ToAs.

Regardless of how the system is conceptualized, the “overall” theory of action can and must connect all of the parts together for it to be truly balanced.



Example Levels of Assessment

Intended Use

State. Statewide Accountability Assessment



ESSA School Identification & Support

District. District-Wide Middle of Year Interim (e.g., Benchmark)



District Resource Allocation

Classroom. End of Unit & Mid-Unit Check in Assessments, Weekly Exit Tickets, Daily Conversations



Formative Assessment Cycle for Tailored Instruction

Instructional Unit

Instructional Unit

Quarter 1

Quarter 2

Quarter 3

Quarter 4

Example Levels of Assessment

Intended Use

State. Statewide Accountability Assessment



ESSA School Identification & Support

District. District-Wide Middle of Year Interim (e.g.,

benchmark)

Which levels are part of our balanced assessment system?

District Resource Allocation

Classroom. End of Unit & Mid-Unit Check in Assessments,

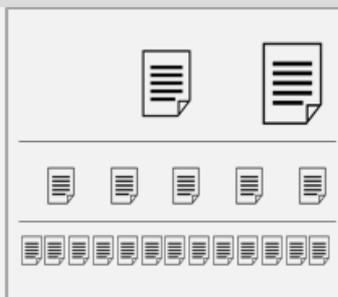
Weekly Exit Tickets, Daily Conversations

assessment system?

Formative Assessment Cycle for Tailored Instruction



Instructional Unit



Instructional Unit

Quarter 1

Quarter 2

Quarter 3

Quarter 4

Example Levels of Assessment

Intended Use

State. Statewide Accountability Assessment



ESSA School Identification & Support

District. District-Wide Middle of Year Interim (e.g., Benchmark)

Defining our balanced assessment across all of these levels has implications for the ToA.

The “overall” ToA must work across levels to meet intended uses

Instruction



Instructional Unit



Instructional Unit

Quarter 1

Quarter 2

Quarter 3

Quarter 4



Intended Use

ESSA School
Identification &
Support

The “overall”
ToA must
work across
levels to meet
intended uses

Instruction

⌘ **Unbalanced systems are usually a result of unbalanced theories of action**

- Theories of action for separate parts of the system are separated from one another, or at worst at odds with one another

⌘ For example:

- Accountability based systems of school identification and support are completely divorced from the day-to-day formative assessment practices that are used to determine instructional next steps

⌘ Goal: ensure that the “smaller” theories to work together

- In addition, the “overall” ToA may be one part of a larger system of reform (i.e., a larger ToA)



Some Implications

- ⌘ Each assessment within a system typically has its own **ToA “baggage,”** which can be explicit or implicit
 - Each level generally has pre-existing assessments that need to be considered – we never start from a blank assessment slate.
- ⌘ Assessment systems and theories of action are **interconnected**
 - Making a decision about one has implications for the other. Iteration is often needed.
- ⌘ A system of assessments might be of high quality, but if it does not **fit the overall theory of action,** then the system’s use will likely not result in the intended outcomes.

Definition: Theory of Action

A theory of action outlines the **components of the system**, while clearly specifying the **connections among these components**. Most importantly, a theory of action must specify the **hypothesized mechanisms or processes for bringing about intended goals**...the theory of action should describe how the **particular clear goals** will be achieved as a result of the proposed...system(s).

-*Marion, Lyons & D'Brot (2016)*

What is a Theory of Action ?

A **logical argument** that connects the **goals** of a system to its **component parts**

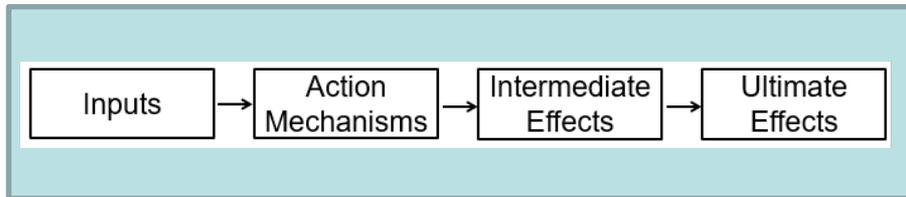


By describing the **actions and conditions** that lead to the goals



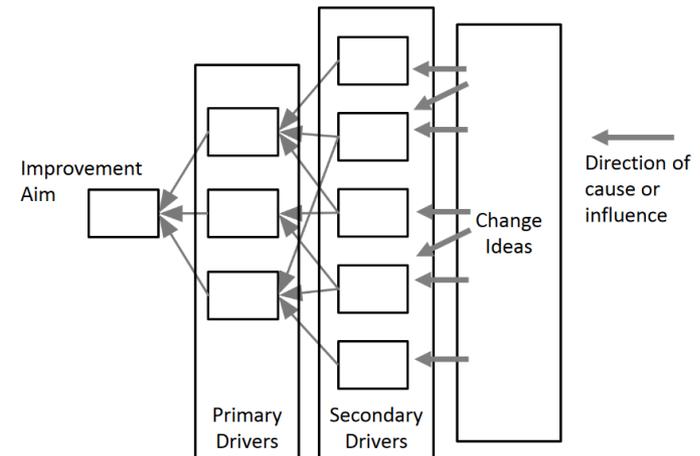
as well as the **rationales, assumptions** and **evidence** that support and justify the connections within the system

Conceptualizing the Components of a ToA



Logic Model

(e.g., [Frechtling, 2007](#),
[W.K. Kellogg Foundation, 1998](#))



Driver Diagram

(e.g., [Bennett & Provost, 2015](#))

Like with BAS, these conceptualizations (or others!) shape how we design our ToA. And the design of ToA influences our BAS.

We present theories of action graphically. Others use formats like tables (e.g., [SCILLSS, 2017, p. 5](#)). There is no *one* correct format and each application is tailored by the developer.

Example Levels of Assessment

Intended Use

State. Statewide Accountability Assessment



ESSA School Identification & Support

District. District-Wide Middle of Year Interim (e.g., Benchmark)



District Resource Allocation

Classroom. End of Unit & Mid-Unit Check in Assessments, Weekly Exit Tickets, Daily Conversations



Instructional Unit



Instructional Unit

Formative Assessment Cycle for Tailored Instruction

Quarter 1

Quarter 2

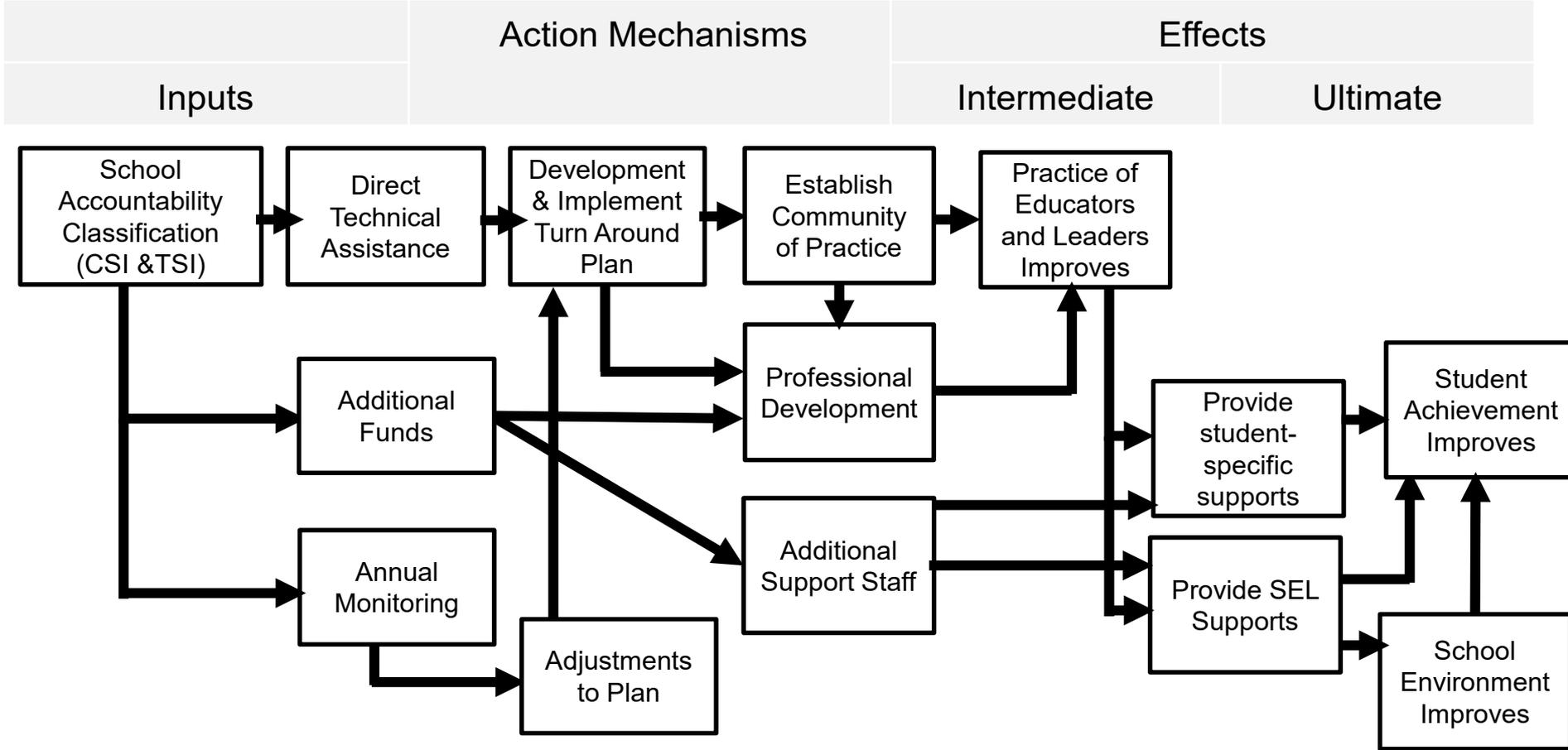
Quarter 3

Quarter 4

A naïve, over simplification of a hypothetical state plan

ESSA School Identification & Support

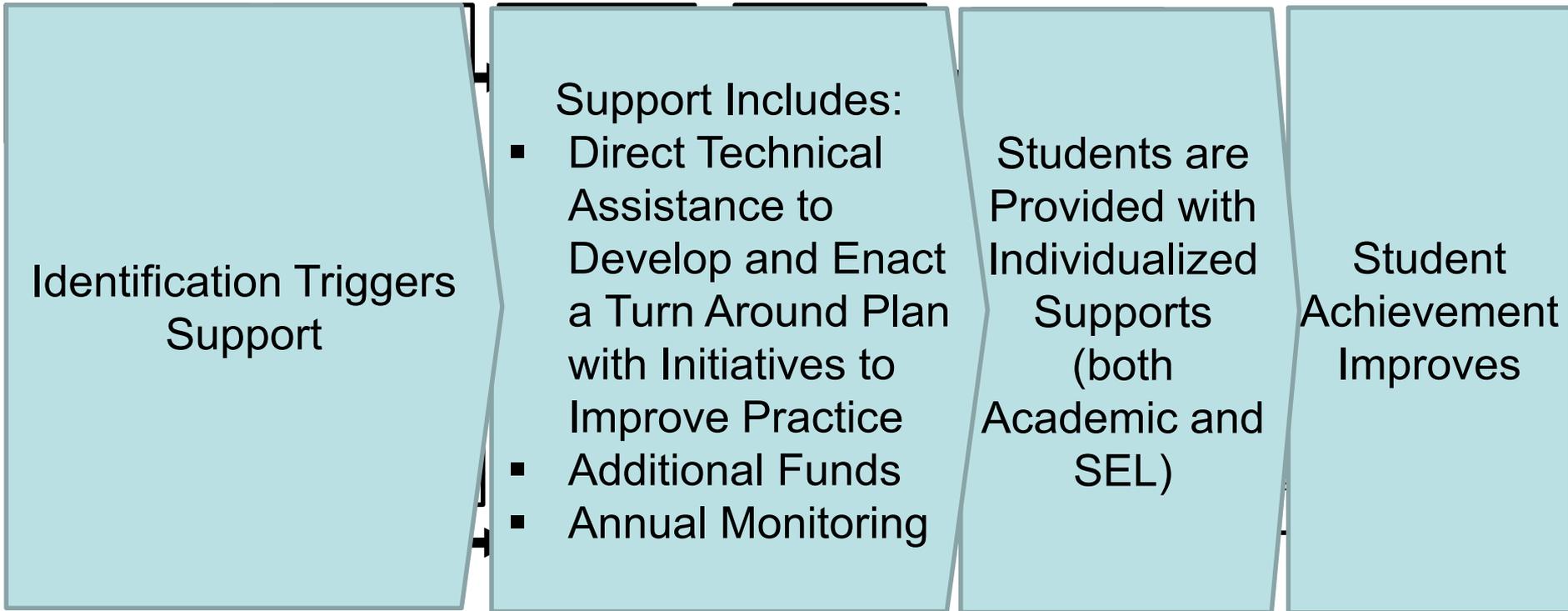
A fully developed ToA would elaborate each box and connection, as well as provide rationales, assumptions, and evidence.



ESSA School Identification & Support

A naïve, over simplification of a hypothetical state plan, redux.

	Action Mechanisms	Effects	
Inputs		Intermediate	Ultimate





Levels

State.

Statewide
Accountability
Assessment

ESSA School
Identification &
Support

District.

District-Wide
Middle of Year
Interim

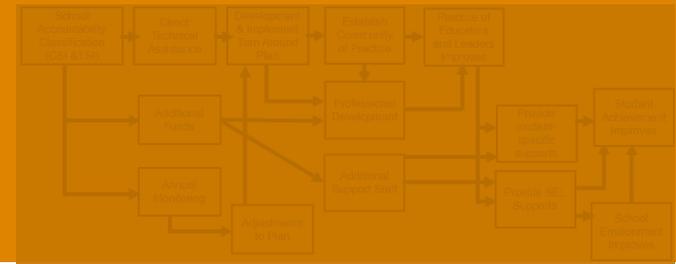
District Resource
Allocation

Classroom.

End of Unit &
Mid-Unit Check
in Assessments,
Weekly Exit
Tickets, Daily
Conversations

Formative Assessment
Cycle for Tailored
Instruction

ToAs



Overall Theory of
Action

How do we ensure that all of our “small” ToAs work together? (i.e., function as a single large ToA?)



Levels

ToAs

State.

Statewide
Accountability
Assessment

District.

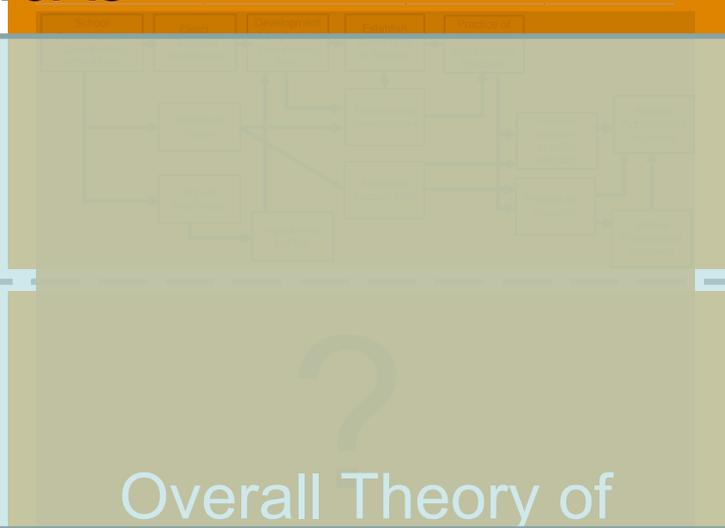
District-Wide
Middle of Year
Interim

Many states have provided interims in the hopes of building greater connections across the state and district levels (see [Dadey, 2019](#))

Classroom.

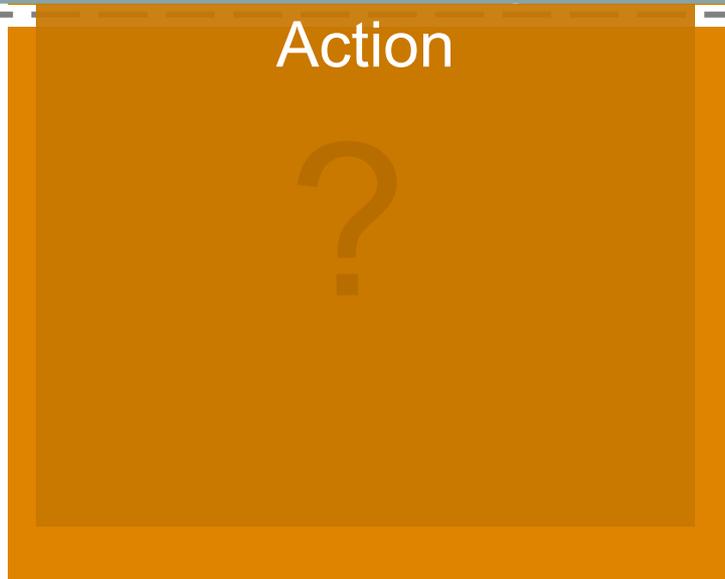
End of Unit &
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Cycle for Tailored
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Overall Theory of

Action



How do we ensure that all of our “small” ToAs work together? (i.e., function as a single large ToA?)



Section Agenda

Balanced Assessment System

- Definition
- Description & Components
- **Criteria**
- **Barriers**

Theory of Action

- Definition
- Description & Components



Characteristics/Criteria of Balanced Assessment Systems

- ⌘ Comprehensiveness
- ⌘ Coherence
- ⌘ Continuity
- ⌘ Efficiency
- ⌘ Usefulness

See [NRC, 2001](#) for the original criteria; see Chattergoon, 2016 and [Chattergoon & Marion, 2016](#) for an updated set of criteria, which includes efficiency and usefulness.

Barriers to Balanced Assessment Systems

- ⌘ Politics and policy
- ⌘ Commercialization and proliferation of assessments
- ⌘ Lack of assessment literacy
- ⌘ Insufficient attention placed on curriculum

See [Marion et al. \(2019a\)](#) and for even more detail, see [Marion et al. \(2019b\)](#)



Takeaways

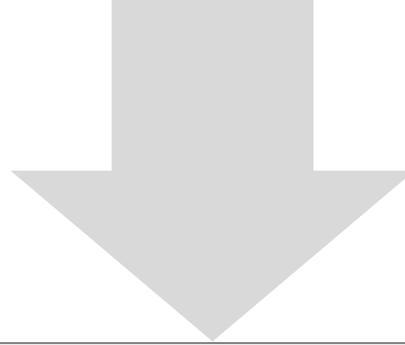
BAS and ToA :

1. Are **interconnected**, requiring iterative development.
2. Have **components** that can be defined in varying ways, each of which has implications for development.
 - Inclusion or exclusion of a particular component does not automatically make an assessment system balanced
3. Must address **pre-existing** assessments and their supporting theories of action.
4. Must be organized under a **single “large” or overall ToA.**
 - Connecting disparate components (e.g., classroom and state) is very challenging.

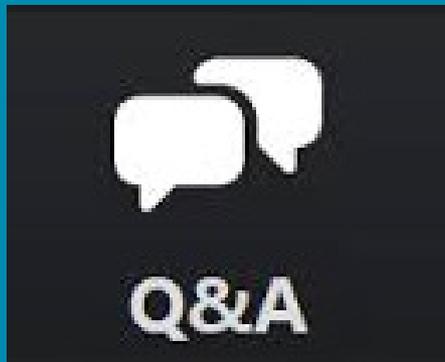
Looking to the Next Section

The development of a **balanced assessment system** starts with the development of a *draft* overall **theory of action**, and

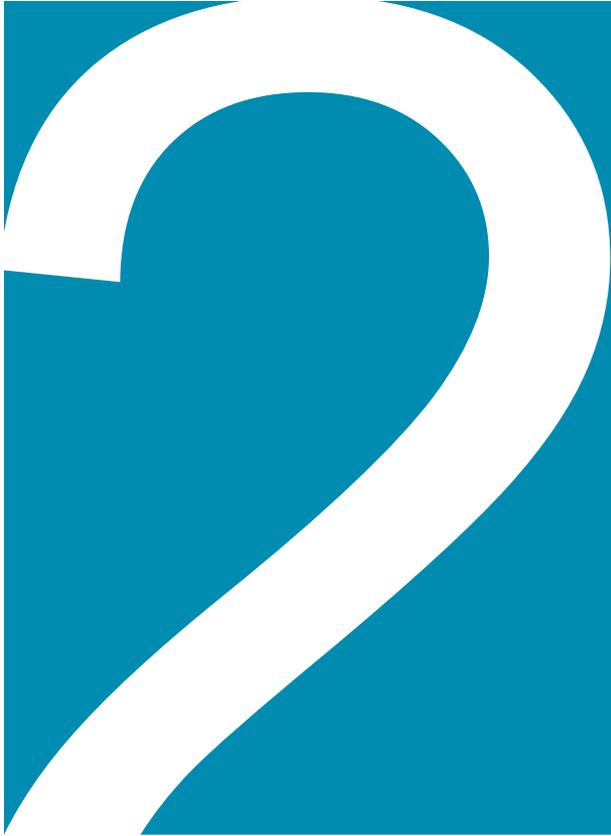
Developing a **theory of action** starts with clearly identifying the **problem(s) to be solved.**



- ⌘ As part of a formal framework or process, like *Root Cause Analysis*
- ⌘ As part of a large design framework, like *Human Centered Design* or the *Job to Be Done Framework*
- ⌘ Or through a more “heuristic” problem solving approach, which asks:
 - How do we get from “what is” to “what is desired”



Any questions? We'll take a few minutes to address them.



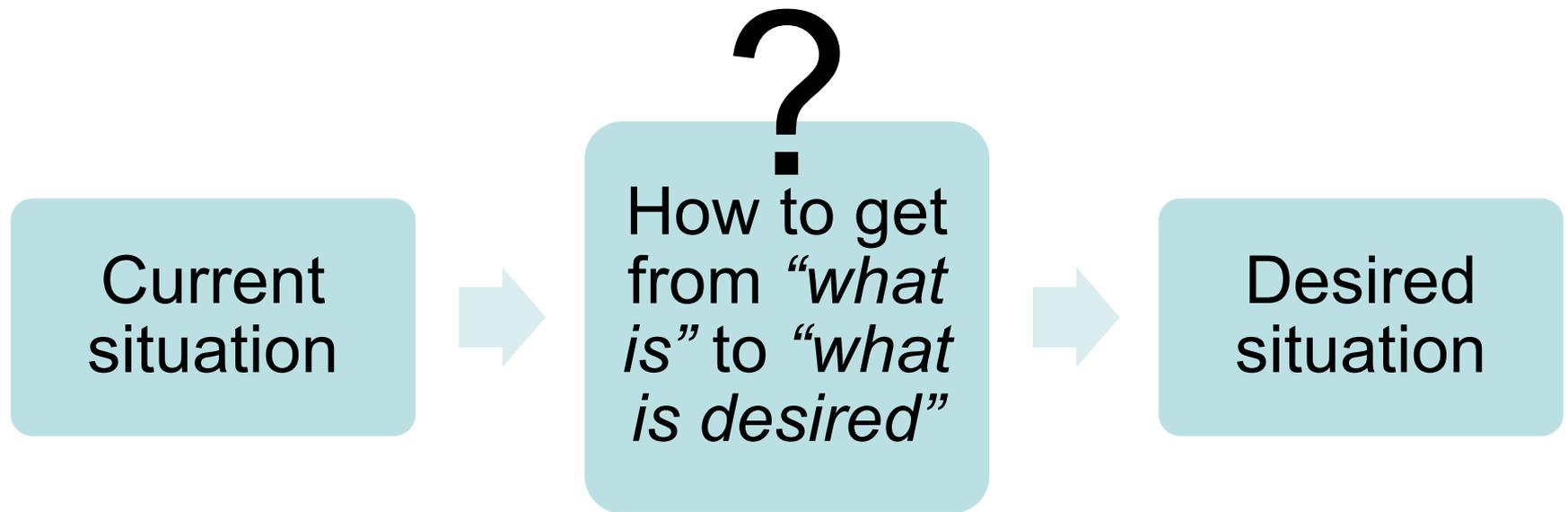
Developing a Theory of Action

1. A Reintroduction BAS & TOA
2. ToA Development
3. Example Use Cases
4. Reconsidering BAS and ToA

Our main points

- ⌘ A **problem-solving framework** is useful for developing a theory of action and associated balanced assessment systems
- ⌘ There are **many dimensions** along which assessment systems may be balanced
- ⌘ The dimensions you choose and where you decide the relationships are balanced appropriately depend upon your theory of action: what you want to do and how you think that can best be achieved
- ⌘ A complex system consisting of multiple nested parts may require **multiple theories of action**

Problem-solving framework for ToA



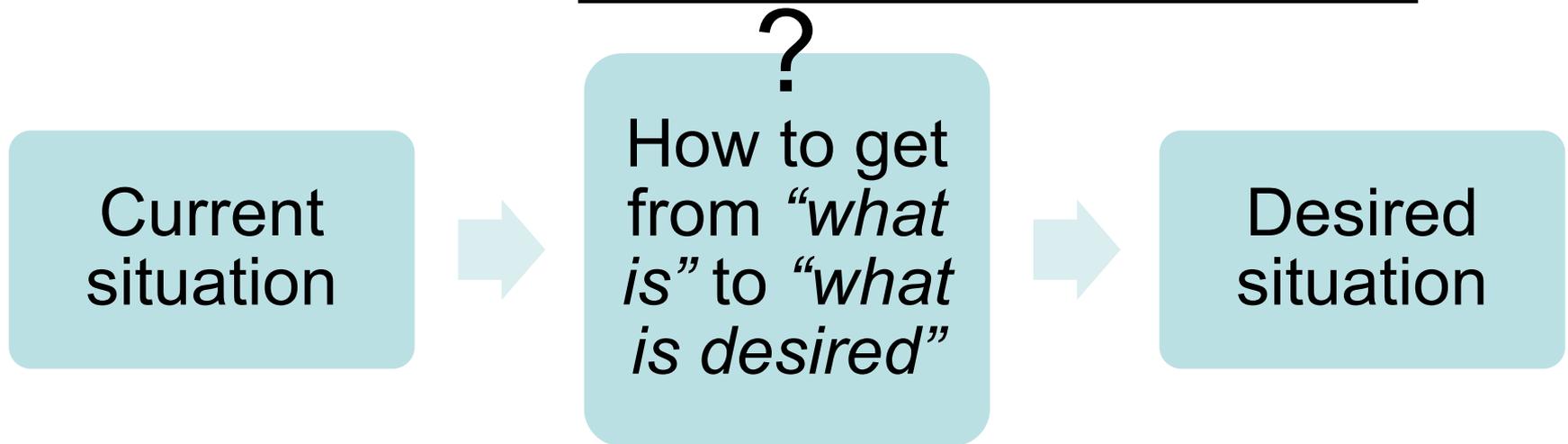
This is the problem to be solved.
Your “theory” of action is your best hypothesis of
how to solve that problem



Self-Reflection Part I: My Theory of Action

What is your theory of action, in brief?

“To achieve _____,
the state should do _____.”

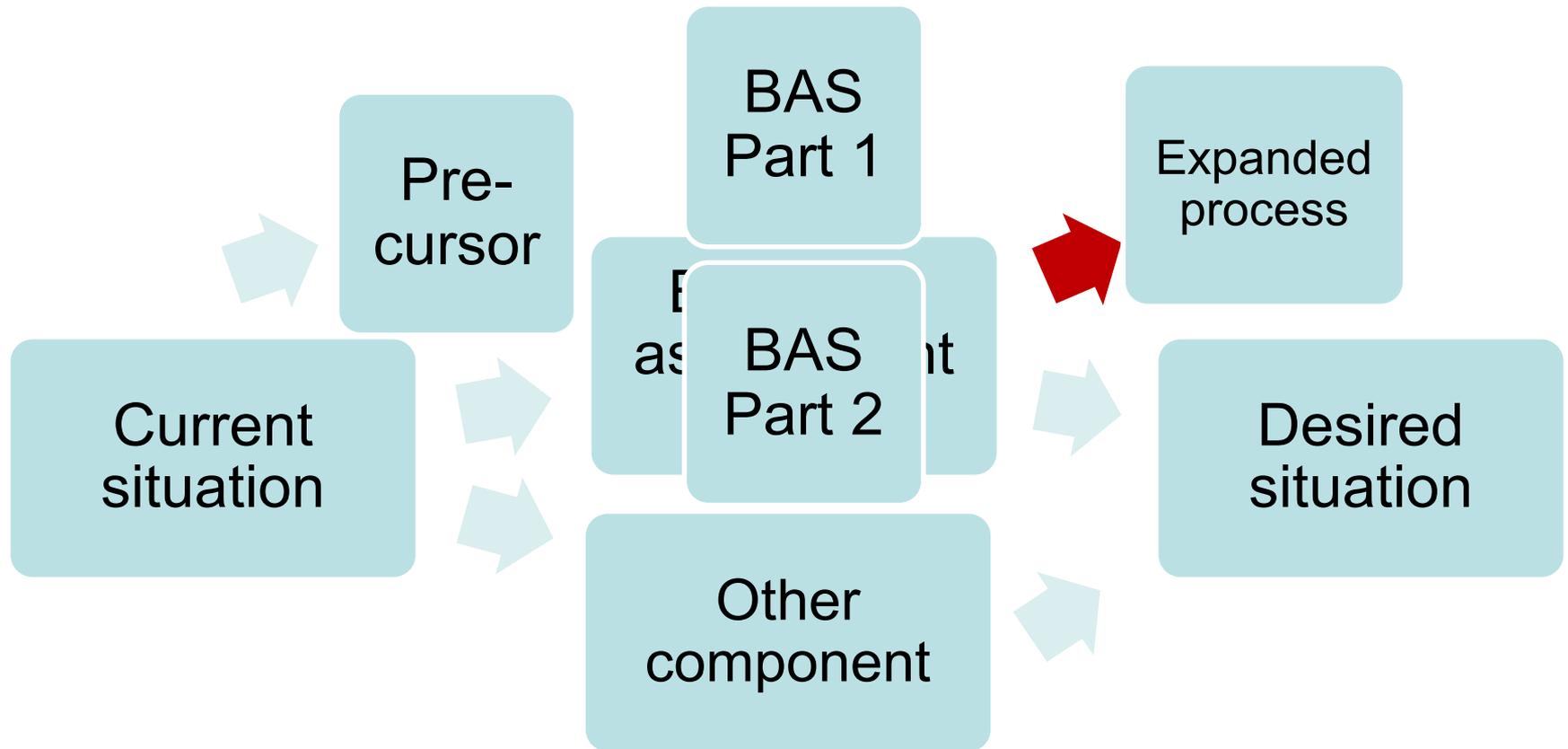


A balanced assessment system, consisting of _____ will help by

”

.”

Elaborate your theory of action



Developing a theory of action: structure

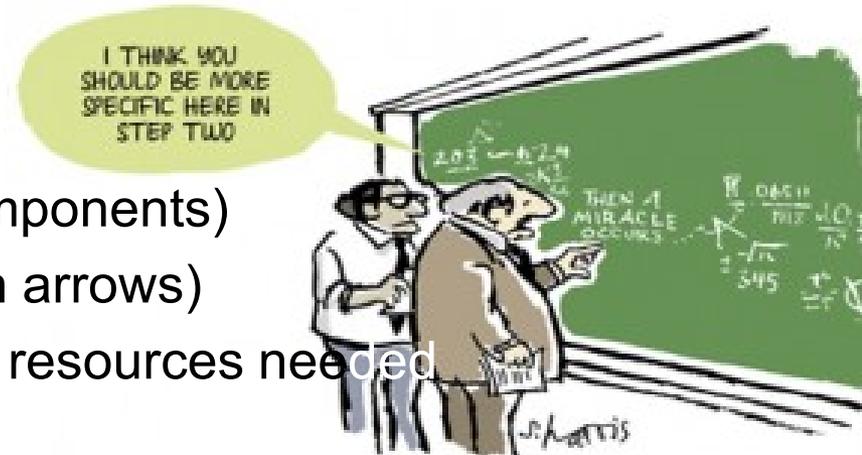
⌘ Start with “big picture” “elevator speech” of the system

⌘ Fill in

- Add more parts of the system
- Break parts into smaller parts (components)
- Break steps into small steps (often arrows)
- Add important details: who, when, resources needed

⌘ Attend to likely challenges

- Recognize and bolster key parts
- Specify how transitions in governance will be kept aligned
- Identify things that are new, haven't been done up to now
- Identify areas where there are counter-pressures
- Identify ways unintended negative things could happen



Information Gaps and Needs

- ⌘ A theory of action is a necessary starting point to identify gaps and needs.
 - What is the role of assessment in our vision of teaching and learning?
 - What type of assessment information is needed to support that vision?
- ⌘ This becomes a point of reference by which to evaluate all future decisions



“Elevator speech” ToA: samples

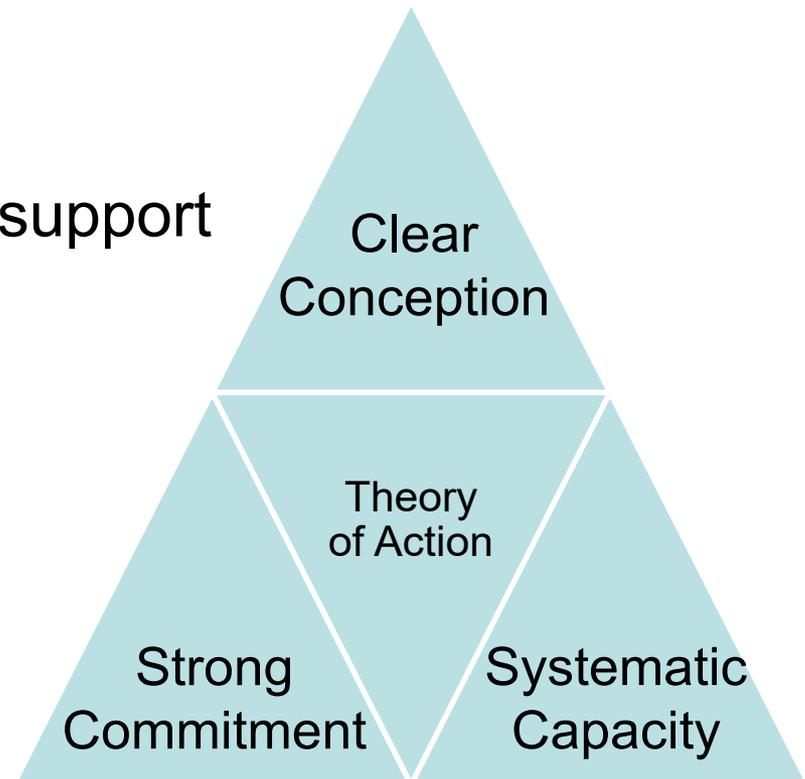
	ToA 1	ToA 2	ToA 3
Goal	To reduce gaps and ensure no child is left behind...	To reduce gaps and ensure every student is college/career ready...	To support every child pursuing her/his own dream, maximizing her/his own talents...
ToA	Schools will be held accountable that all children achieve proficiency on common standards, as measured by trustworthy assessments; schools and students that do not will receive supplemental supports	Teachers and students will be provided strong, equitable opportunities to learn, directed by instructional assessments and supports designed to prevent children falling behind	Curriculum and schooling will support students pursuing individual interests, strengths, and plans; assessments will help students demonstrate competency and move on when ready

“Elevator speech” ToA: samples

	ToA 1	ToA 2	ToA 3
Goal	To reduce gaps and ensure no child is left behind...	To reduce gaps and ensure every student is college/career ready...	To support every child pursuing her/his own dream, maximizing her/his own talents...
ToA	Schools will be held accountable that all children achieve proficiency on common standards, as measured by trustworthy assessments; schools and students that do not will receive supplemental supports	Teachers and students will be provided strong, equitable opportunities to learn, directed by instructional assessments and supports designed to prevent children falling behind	Curriculum and schooling will support students pursuing individual interests, strengths, and plans; assessments will help students demonstrate competency and move on when ready
BAS	The state summative assessment will be balanced by providing more instructionally useful information multiple times during the year	Assessments will support educator uses: diagnostic (within class period), diagnostic (across class periods), and district (comparative for program evaluation)	Assessments will support student uses: provide feedback, and demonstrate competency to external audience that opens doors to student

Developing a theory of action: process

- ⌘ Conceptual development
- ⌘ Fostering of political will and support
- ⌘ Implementation support
- ⌘ Refinement



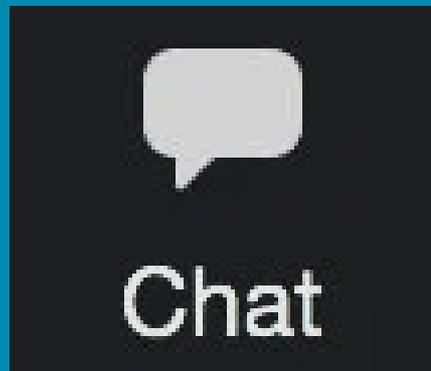
Use of a theory of action

- ⌘ **Direct development** of balanced assessment system, e.g., design of information needed to support intended inferences and actions:
 - Who is the report **about**?
 - Who is the report **for**?
 - What are they supposed to **do with the report**?
- ⌘ **Structure validation of assessments**, especially evaluation of consequential aspects
- ⌘ **Direct program evaluation of intended interventions** for improvement (formative evaluation) and decisions about adoption/retention (summative evaluation)

A Way Forward

4 Strands of Work to Facilitate and Support Progress Around Balanced Assessment Systems (Marion, et.al. 2019)

- ⌘ Conceptual – focused on clarifying the concepts and criteria defining a balanced assessment system
- ⌘ Practical – focused on determining what it takes to design and implement assessment systems in practice (e.g., partnerships, tools, resources, training)
- ⌘ Research & Evaluation – focused on establishing a clear research model to evaluate the impact of interventions
- ⌘ Policy – clarifying the role and impact of the policy context



Any questions? We'll take a few minutes to address questions from chat.



Example Use Cases

1. A Reintroduction BAS & TOA
2. ToA Development
- 3. Example Use Cases**
4. Reconsidering BAS and ToA

Example Use Case #1

Using interim assessments to provide summative scores and determinations

Context

- ⌘ An emerging area of interest has been around the use of interim assessments* to replace summative state assessment (e.g., [Gong & Dadey, 2018](#)).
- ⌘ The goal of such interest is to maintain the current theories of action that are currently supported by the state summative assessments and interim assessments.
 - Essentially, supporting multiple smaller theories of action based on the interim assessments, which ideally act as a balanced assessment system.

*Here we use the term interim broadly, to include terms like “through course”.

Example Levels of Assessment

Intended Use

State. Statewide Accountability Assessment



✓ ESSA School Identification & Support

What theories of action are the interims meant to support?

? District Resource Allocation

E.g., currently implemented, new, or both?

? ? ?
? ? ?
? ? ?
? ? ?
? ? ?
? ? ?
? ? ?

? Formative Assessment Cycle for Tailored Instruction



Instructional Unit



Instructional Unit

Quarter 1

Quarter 2

Quarter 3

Quarter 4

Example Levels of Assessment

Intended Use

State. Statewide Accountability Assessment



✓ ESSA School Identification & Support

District. District-Wide Middle of Year Interim (e.g.,

We skipped a huge step – problem definition – for the purpose of illustration.

Classroom. End of Unit & Mid-Unit Check in Assessments, Weekly Exit Tickets, Daily Conversations

Instructional Unit

Instructional Unit

✓ District Resource Allocation

✓ Mastery Checks on Prioritized Content for Tailored Instruction in Next Quarter

Cycle for Tailored Instruction

Quarter 1 Quarter 2 Quarter 3 Quarter 4

Intended Use

Resulting Questions from Defining the ToA(s)

- ⌘ Can all of these ToAs be supported?
 - Can we define them with enough detail?
 - Can we ensure that they connect well enough to function as a whole?
- ⌘ Can we develop and implement an interim assessment design that will support these theories of action*?
 - How many assessments?
 - What will each assess?
 - When will they be administered?
 - What will be reported?

✓ ESSA School Identification & Support

✓ District Resource Allocation

✓ Mastery Checks on Prioritized Content for Tailored Instruction in Next Quarter

Formative Assessment Cycle for Tailored Instruction

*Questions drawn from [Gong & Dadey, 2018](#)



⌘ How many assessments?

- Four (last will not inform quarterly instruction)

⌘ What will each assess?

- “Modular-block” design, in which large chunks of the domain are measured, divided up by the implied by pacing of popular curriculum (as opposed to “full-scope” or “modular-standards” designs)

Classroom.



Mastery Checks on
Prioritized Content for
Tailored Instruction in
Next Quarter

⌘ When will they be administered?

- Based on school and district curricular pacing guides, with 2 weeks leeway. The order of the assessments is fixed.

⌘ What will be reported?

- Mastery of concepts or “big-ideas” from each quarter

Example Levels of Assessment

Example ToAs

State.

District.

Classroom

How do we create a single summative score to support these ToAs?

Computing such a score is easy compared to deciding what the score should mean (i.e., its interpretation) in relation to the ToAs.

✓ ESSA School Identification & Support

✓ District Resource Allocation

✓ Mastery Checks on Prioritized Content for Tailored Instruction in Next Quarter

Formative Assessment Cycle for Tailored Instruction

Instructional Unit

Instructional Unit

Quarter 1

Quarter 2

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Example Levels of Assessment

Example ToAs

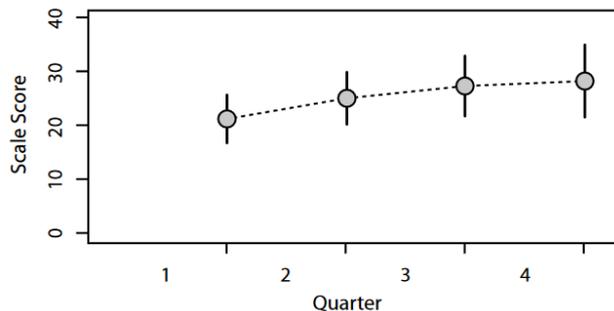
State.

District.

Classroom

How do we create a single summative score to support these ToAs?

How will performance during the year be addressed?



✓ ESSA School Identification & Support

✓ District Resource Allocation

✓ Mastery Checks on Prioritized Content for Tailored Instruction in Next Quarter

Formative Assessment Cycle for Tailored Instruction

Instructional Unit

Instructional Unit

Quarter 1

Quarter 2

Quarter 3

Quarter 4

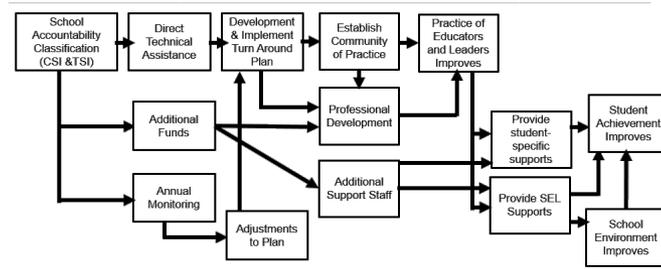
Example ToAs

✓ ESSA School Identification & Support

✓ District Resource Allocation

✓ Mastery Checks on Prioritized Content for Tailored Instruction in Next Quarter

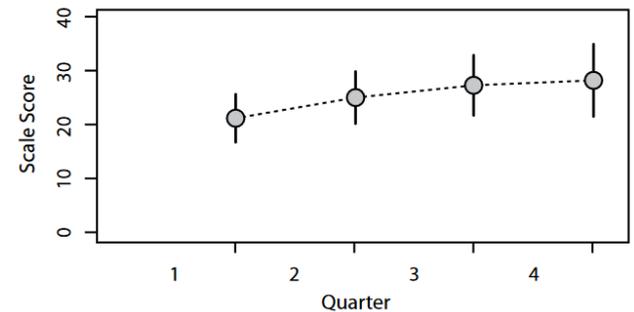
Formative Assessment Cycle for Tailored Instruction



?

?

How will performance during the year be addressed?



Example Use Case #2

Using interim assessments to inform instruction/learning

What does it take for assessments to “inform instruction”?

1. Aimed for learning
2. Matched to possible instruction
3. Timely action: When did you know? What did you do?
4. Adds value

1. Aim for learning

- ⌘ Instructional assessments are intended to foster student learning (whether shorter-cycle or longer-cycle)
- ⌘ Therefore, instructional assessments are *anti-summative*—they should not be used as summative because they are intended to change what the student knows and can do from what was demonstrated on that assessment
 - If the students don't get better after an instructional assessment, something isn't working (true for reporting “strengths/weakness” or predicting “projected end of year performance”)
 - Might have a “paced learning claim”: “the student did this well at learning at the rate under the conditions that were laid out”

2. Assessment should be matched to how varied instruction can be



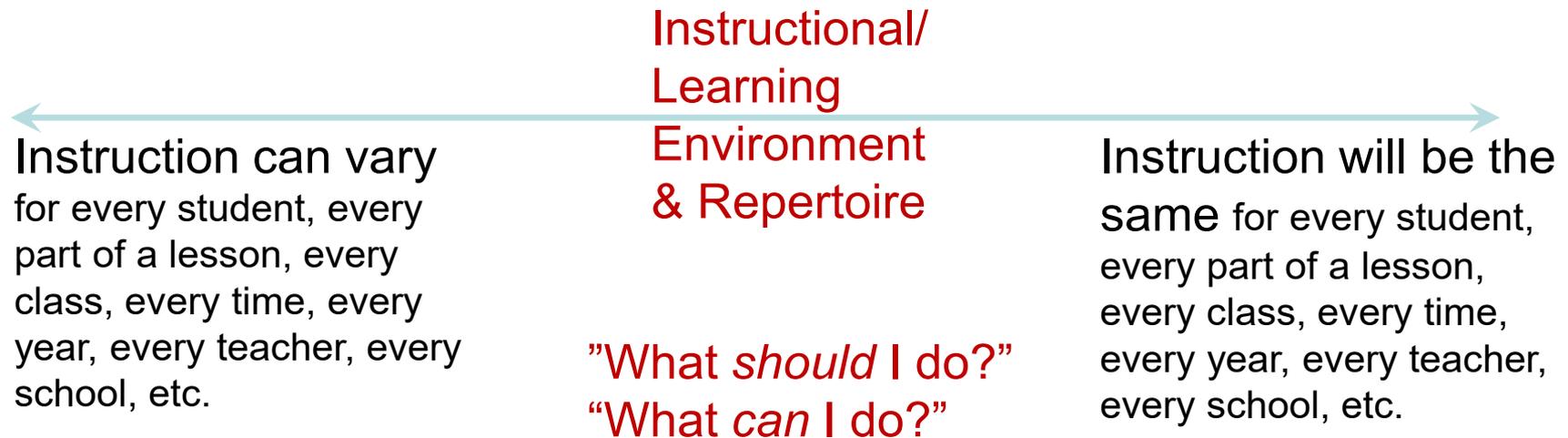
Instruction can vary for every student, every part of a lesson, every class, every time, every year, every teacher, every school, etc.

Instruction will be the **same** for every student, every part of a lesson, every class, every time, every year, every teacher, every school, etc.

2. Assessment should be matched to how varied instruction can be



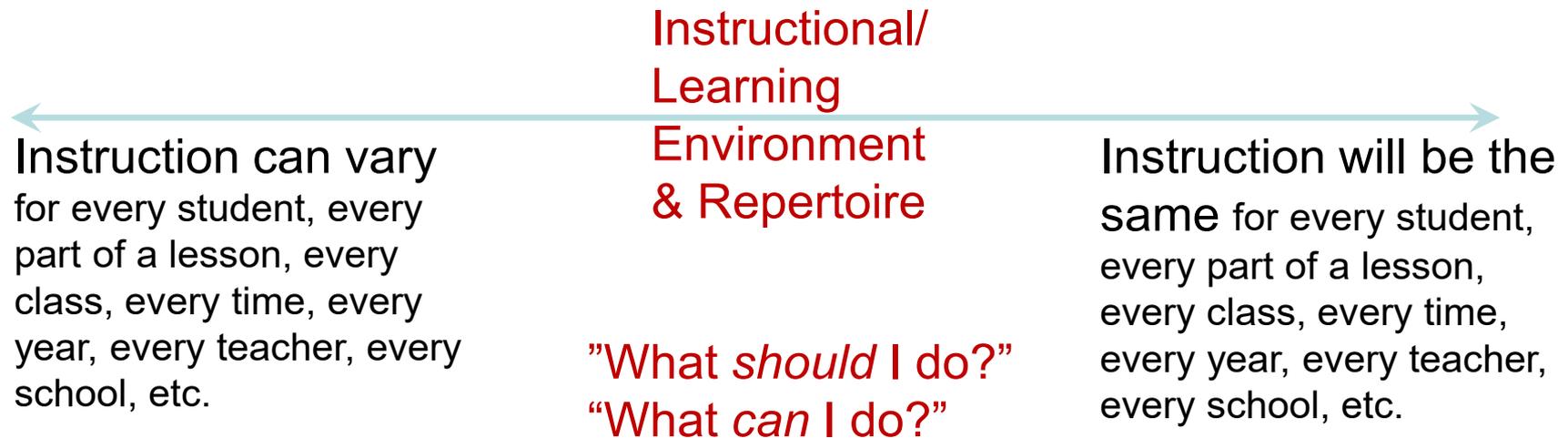
2. Assessment should be matched to how varied instruction can be



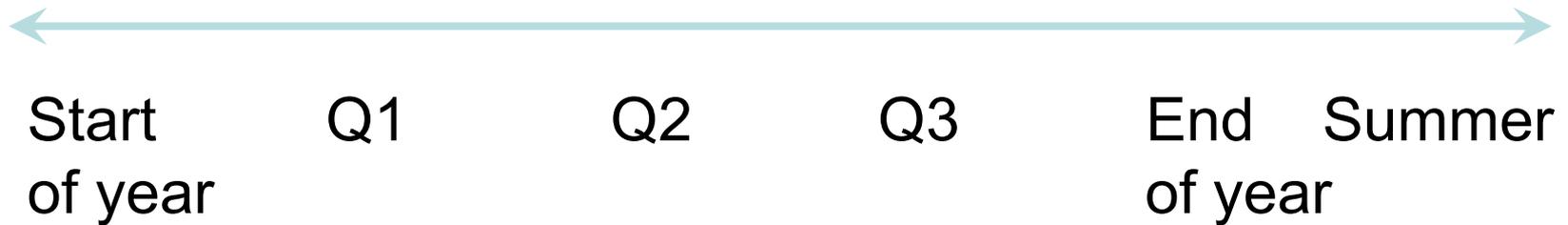
2. Assessment should be matched to how varied instruction can be

Tailored instruction requires

- Instructionally sensitive assessment AND
- Assessment-sensitive instruction

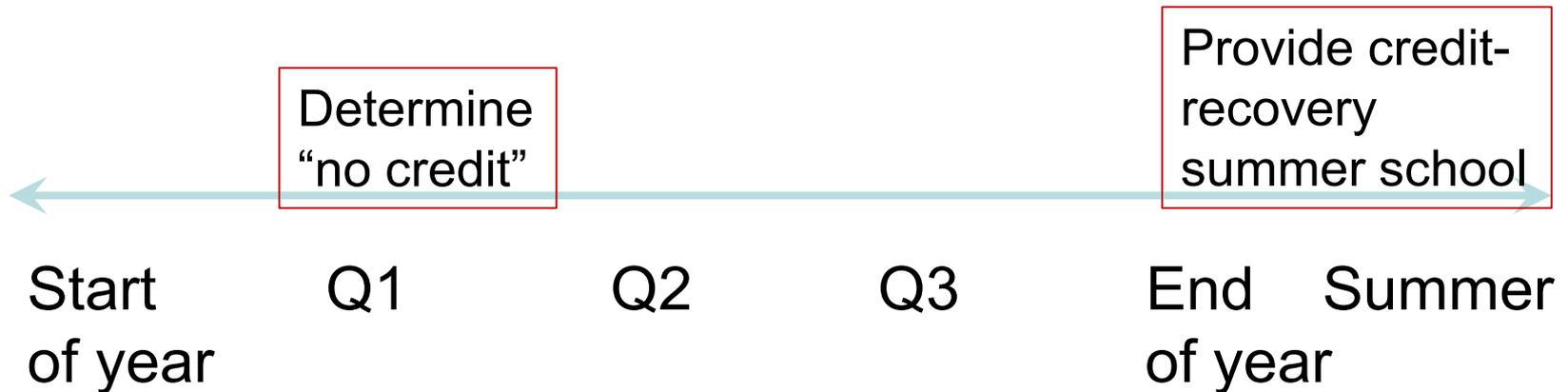


3. Timely action: When did you know? What did you do?



3. Timely action: When did you know? What did you do?

Increase high school graduation → decrease dropouts
Decrease dropouts → increase credit accumulation
Increase credit accumulation → make-up summer school

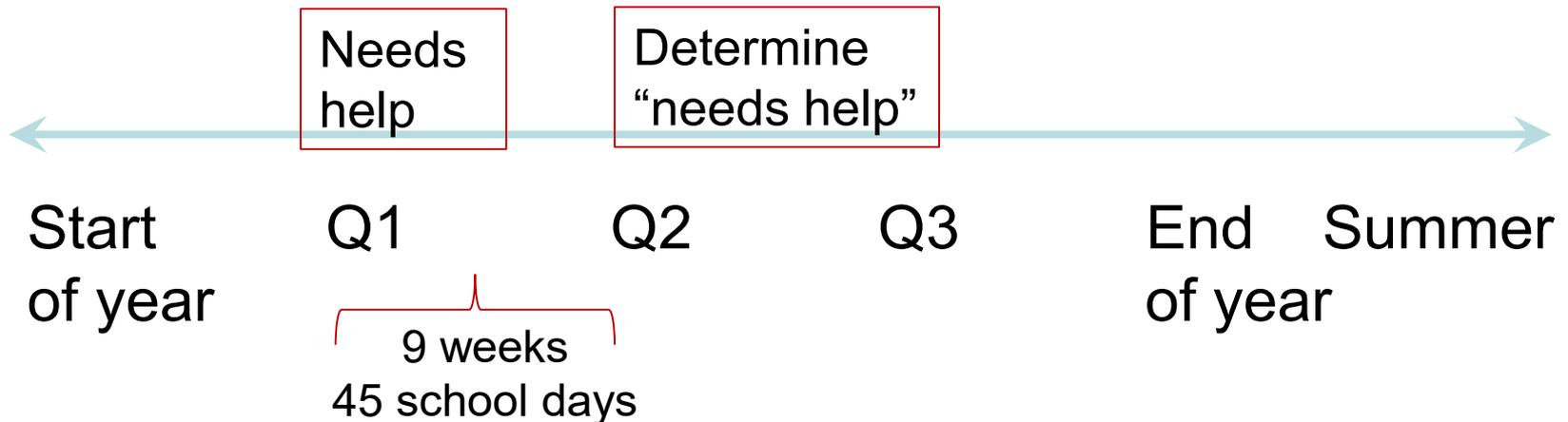


3. Timely action: When did you know? What did you do?

Increase CCR → increase EOY proficiency

Increase EOY proficiency → check interim proficiency

Low interim performance → supplemental instruction

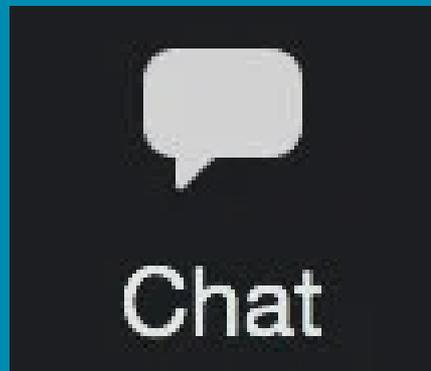


4. Assessment adds value

- ⌘ What value does *this* assessment add?
- ⌘ Does it overlap with another assessment?
- ⌘ Is it better: more accurate, more informative, more credible, cost-efficient, easier to use, etc.?
- ⌘ Where does it fit in your *system* of assessments?
- ⌘ Where does it fit in other users' systems?

Balanced assessment system to support better instruction/learning

- ⌘ Aimed at learning
- ⌘ Variable with instruction
- ⌘ Timely
- ⌘ Adds value



Any questions? We'll take a few minutes to address questions from chat.



Reconsidering Balanced Assessment Systems and Theories of Action

1. A Reintroduction BAS & TOA
2. ToA Development
3. Example Use Cases
4. Reconsidering BAS and ToA

Summary: Balancing Assessment Systems and Theories of Action

- ⌘ The state's theory of action should propose clearly how a problem will be solved, and how the balanced assessment system will help
- ⌘ The theory(s) of action and balanced assessment system should be developed together, iteratively
 - Attend to process that develops the conceptual clarity of the theory(ies) of action, the capacity to implement, and the commitment to sustainably put into action, evaluate, and refine
- ⌘ Spanning very different purposes and governance (e.g., state, district, classroom) are current challenges being worked on for theories of action and balanced assessment systems



Self-Reflection Part II

- ⌘ What would you like to do next to develop your theory of action for balanced assessment systems?
- ⌘ What do you think would be helpful to most states and the field?
- ⌘ What could the Balanced Assessment Systems SCASS do to help?
 - What would you make high priority? Medium priority? Lower priority?