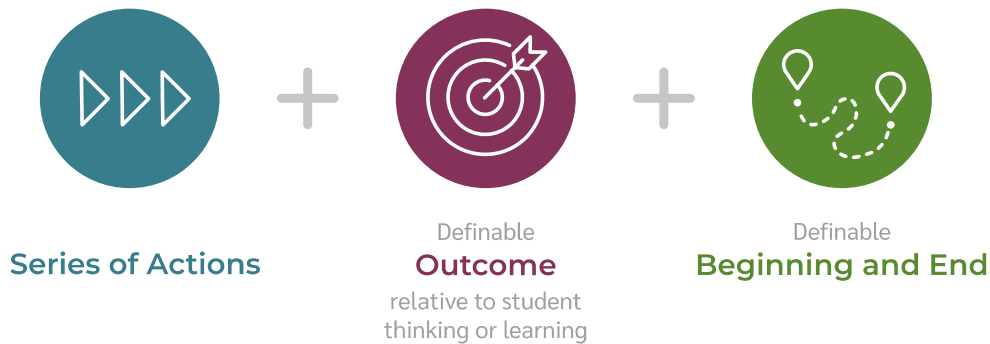# Defining an Instructional Strategy

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The term "instructional strategy" is ubiquitous in its use but infrequently defined in an operational manner. For teachers to conduct experimental research on instructional strategies, they must first operationally describe what they mean by the term.

What Creates an Instructional Strategy?

Series of Actions
$+$
Definable
Outcome
relative to student thinking or learning
$+$
Definable
Beginning and End

A viable starting place is to define an instructional strategy as a series of actions with a definable outcome relative to student thinking or learning and a definable beginning and end. With this definition as a context for researching a specific instructional strategy, teachers might also make a number of distinctions regarding the strategy they have selected for study.

Useful distinctions to this end include:

- whether the strategy involves **steps or heuristics** to be taught to students;
- the **process** the teacher will use to facilitate the effectiveness of the strategy;
- the **intended outcomes** of the strategy and how those outcomes can be assessed;
- **moderating or mediating variables** relative to the effects of the strategies:
- the **duration** of time within which the strategy will be used; and
- the **teacher's perceived level of competence** relative to using the strategy.

Useful Distinctions for a Series of Actions

Steps or Heuristics for Students

The series of actions involved in an instructional strategy can manifest in at least two forms: steps and heuristics. In general, steps are concrete actions executed sequentially, whereas heuristics are rules to be followed that have no rigid order but might have a general flow to them.

Step-Based Instructional Strategy	Heuristic-Based Instructional Strategy
Involves three steps to be executed in **a specific order**. Example:	General rules that ***do not*** have to be executed in any specific order. Example:
KWL Strategy *(Ogle, 1986)* **STEP 1:** K stands for the question, "What do I think I know?" **STEP 2:** W stands for "What do I want to know?" **STEP 3:** L stands for "What have I learned?"	**Reading a Bar Graph** • Identify the variable represented by the horizontal axis. • Identify the variable represented by the vertical axis. • Determine the value of the bars on the horizontal axis.

The Process the Teacher Uses When Facilitating the Strategy

Another important aspect of an instructional strategy is the teacher's process when facilitating its use. Their process is related to the topic of steps and heuristics described above. However, that discussion focused on the students. Specifically, **KWL** represents the steps students are expected to use when reading expository texts. The heuristics for reading a bar graph are also to be executed by students. But a teacher will typically not simply tell students to use the KWL strategy. Rather, the teacher will involve students in activities that help enhance the effects of the strategy. This might involve facilitating what happens before, during, and after students engage in the steps or heuristics of the strategy. For example, before having students address the **K** question (What do I think I know?), the teacher might have a brief discussion of the topic to activate students' prior knowledge. After students have addressed the **W** question (What do I want to learn?), the teacher might have students compare their answers to that question. After students have read the passage and addressed the **L** question (What have I learned?), the teacher might have students compare their answers again.

When looking at a heuristic-based strategy, such as the bar graph example previously mentioned, a teacher might use an **"I do, We do, You do"** strategy. The teacher would show students how to identify the following:

- the variable represented by the horizontal axis and the various categories the bars represent;
- the variable represented by the vertical axis and the metric used to measure the variable; and
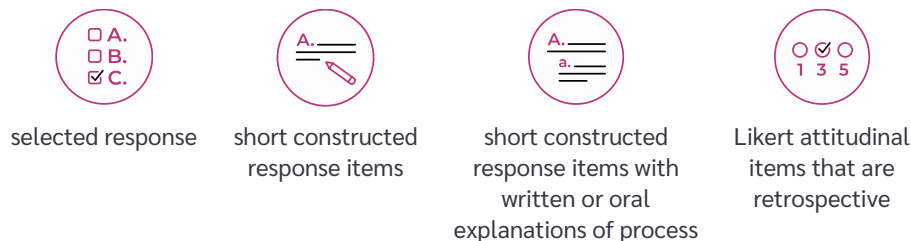- the value of the bars on the horizontal axis.

Once the teacher has shown their students how to read a bar graph, they might read another bar graph with student participation. Then the teacher might have students read bar graphs on their own. Gradual release can be an effective teaching strategy for teaching students heuristic-based instructional strategies.

Useful Distinctions for Outcomes

Strategy Outcomes and Assessments

Another important distinction regarding instructional strategies is the outcomes they are designed to manifest and the types of assessments used.

Assessment types:

selected response	short constructed response items	short constructed response items with written or oral explanations of process	Likert attitudinal items that are retrospective

Possible Outcomes	Possible Assessment Type	
The recall and understanding of specific declarative knowledge (e.g., the concept of a distribution)	selected response	short constructed response items
Execution of content-specific mental procedures (e.g., balancing an equation)	selected response	short constructed response items with written or oral explanations
Execution of a general cognitive mental procedure (e.g., error analysis)	selected response	short constructed response items with written or oral explanations
Execution of a specific metacognitive procedure (e.g., seeking accuracy)	selected response	short constructed response items with written or oral explanations
Attainment of a specific mental state (e.g., feeling accepted, feeling a sense of esteem, feeling a sense of efficacy, feeling a sense of order)		Likert attitudinal items that are retrospective

Once teachers identify an instructional strategy's desired outcomes, they should determine possible assessments for those outcomes. As indicated above, different outcomes require different types of assessments.

Moderating and Mediating Variables

Some factors discussed above can be used as moderator or mediator variables relative to the effects of the strategies that are the subject of study. This can be done when using meta-analytic procedures to aggregate effect sizes. When findings from multiple studies on a specific strategy are aggregated, the effects of variables such as duration of strategy use, type of outcomes, and teacher's perceived competence can be accounted for relative to the overall effect of the strategy.

Useful Distinctions for Beginning and End

Duration

Instructional strategies vary in terms of their duration. At one end of the continuum would be strategies that could manifest their effects in a single class period.

BEGINNING

Duration	Action Number	Action Example
DAY ONE	ACTION 1	K A teacher will prompt their students to respond to the question, "What do I think I know?"
	ACTION 2	W A teacher will prompt their students to respond to the question, "What do I want to know?"
	ACTION 3	The students will read the chapter.
	ACTION 4	L The teacher will prompt their students to respond to the question, "What have I learned?"

END

To illustrate, reconsider the **KWL strategy**. A teacher might begin a lesson with the **K** (What do I think I know?) component of the strategy and the **W** component (What do I want to know?) before reading a chapter in a textbook. After students had read the chapter, the teacher would help students execute the L component (What have I learned?) of the strategy.

A reasonable hypothesis might be that students would understand the content of the passage from the textbook better having used the strategy than they would if they had not used the

strategy. Very commonly, strategies that have a single lesson duration are employed over a number of lessons. For example, a teacher might use the KWL strategy when appropriate across an entire unit of instruction and then examine students' understanding of the content at the end of the unit. As previously described, the KWL strategy and the strategy for reading a bar graph can be executed from beginning to end in a single class period.

BEGINNING

Duration	Action Number	Action Example
DAY ONE	ACTION 1	Identify an issue about which people disagree
	ACTION 2	Identify the exact point of disagreement
DAYS 2-6	ACTION 3	Gather information and evidence regarding the various perspectives
DAYS 7-11	ACTION 4	Analyze the information and evidence
	ACTION 5	Determine the perspective that appears most valid or accurate
DAYS 12-14	ACTION 6	Summarize your conclusions with supporting evidence

END

There are also many strategies that require multiple class periods to complete. For example, an investigation strategy might require students to (1) identify an issue about which people disagree, (2) identify the exact point of disagreement, (3) gather information and evidence regarding the various perspectives, (4) analyze the information and evidence and determine the perspective that appears most valid or accurate, and (5) summarize your conclusions with supporting evidence. The five steps of this process might take two or more weeks to complete.

Important Factor: Teacher Self-Rating of Competence

A final factor that influences the effectiveness of a strategy is how competent a teacher feels regarding the steps or heuristics students will use and/or the facilitation process the teacher will use. There are two distinct scenarios relative to these issues. In one scenario, the steps or heuristics and the facilitation process have already been provided to teachers. In this case, a teacher can use the self-rating scale depicted in Table 1.

Table 1. Self-Rating Scale for Strategy With Well-Articulated Steps or Heuristics and Facilitation Process

Score	Description
4 Innovating	I can operate at the applying level (3) AND make adaptations to meet the specific needs of students for whom the strategy is not working.
3 Applying	I can execute the steps or heuristics and the facilitation process without significant errors or omissions AND observe the strategy's desired effects on most of my students.
2 Developing	I can execute the steps or heuristics and the facilitation process without significant errors or omissions.
1 Beginning	I can execute the steps or heuristics and the facilitation process but with significant errors and omissions.
0 Not Using	I am aware of the steps or heuristics for this strategy and the process for facilitating it but have never used them.

At the lowest level, "Not Using," the teacher is aware of the steps or heuristics and the facilitation process relative to the strategy but has not attempted to use them. At the "Beginning" level, the teacher has attempted to execute the steps or heuristics and the facilitation process but does so with significant errors or omissions. At the "Developing" level, the teacher can execute the steps or heuristics and the facilitation process without significant errors or omissions. However, at this level, the majority of students do not exhibit the desired effects of the strategy. It is at the "Applying" level that the teacher not only executes the steps or heuristics and facilitation process without significant errors or omissions, but a majority of students also exhibit the desired effects. Finally, at the "Innovating" level, the teacher can make adaptations to the strategy that meet the needs of those students for whom the strategy is not producing the desired results.

In the second scenario regarding teacher competence, the teacher has no predetermined steps or heuristics and/or no predetermined management process. In this case, a teacher can use the self-rating scale depicted in Table 2.

Table 2. Self-Rating Scale for Strategy With No Well-Articulated Steps or Heuristics and/or Facilitation Process

Score	Description
4 Innovating	I can operate at the applying level (3) AND make adaptations to meet the specific needs of students for whom the strategy is not working.
3 Applying	I can execute the steps or heuristics and the facilitation process without significant errors or omissions AND observe the strategy's desired effects on most of my students.
2 Developing	I can execute the steps or heuristics and the facilitation process without significant errors or omissions.
1 Beginning	I have created the steps or heuristics for this strategy and the facilitation process, but I make significant errors or omissions when I execute them.
0 No Process	I really don't know the steps or heuristics necessary to execute the strategy, or I don't have a facilitation process for the strategy.

At the lowest level of this scale, "No Process," the teacher is unaware of any specific steps or heuristics and/or facilitation processes relative to the strategy. Consequently, the first thing the teacher must do is articulate steps or heuristics that will be taught to students, as well as articulate a facilitation process. At the "Beginning" level, the teacher has articulated steps or heuristics along with a facilitation process but executes them with significant errors or omissions. At the "Developing" level and above, the self-reflection scale in Table 2 is like that in Table 1.

Teachers might fill out the appropriate self-rating scale before beginning a study relative to a specific instructional strategy. They should then fill it out again at the end of the study to determine their perceived growth in competence relative to the instructional strategy.

References

Ogle, D. M. (1986). K-W-L: A Teaching Model That Develops Active Reading of Expository Text. *The Reading Teacher*, *39*(6), 564–570. http://www.jstor.org/stable/20199156