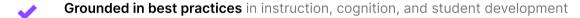
# Decoding: The science behind the scores

M2 and MirrorTalk turn complex principles from educational research into instant, actionable feedback for educators and their students.





Give educators instant, research-backed insights — without adding extra work

Here's how our scores work and what they reveal:

#### M2 feedback

M2 provides feedback on several areas of instruction including engagement, pacing, and questioning. The selection of these criteria is inspired by the work of John Hattie and Robert Marzano.

- Engagement refers to how the teacher verbally interacts with the students, and how the students respond to the teacher's interactions.
- Pacing refers to the speed at which the teacher moves through lesson content and activities, and whether that speed allows students to appropriately process new content and practice new skills.
- Questioning refers to the clarity, quality, and complexity of the questions the teacher poses to the students.

### M2 scores

After an M2 activity, teachers receive scores for engagement, pacing, and questioning. Scores are generated on a scale of 0 to 4, following the rubric below:

SCORE	MEANING
0	No evidence of effort (e.g., no attempts to engage students).
1	Minimal effort and significant gaps in execution.
2	Effort with noticeable inconsistencies or missed opportunities.
3	Strong performance with minor areas for improvement.
4	Exemplary performance exceeding expectations.



#### Reflection score

Swivl used Norman Webb's Depth of Knowledge framework to design the Reflection score.

MirrorTalk's Reflection Score operates on a 0-4 scale, where each level describes the kind of thinking demonstrated in the reflection.

SCORE MEANING

O The learner does not reflect, reflects on an irrelevant topic, or reflects in a very

minimal way.

1 The learner demonstrates thinking at the recall level, where they can identify

facts, names, places, objects, and basic ideas that are relevant to the reflection

prompts.

The learner identifies patterns in recalled information. This may include noticing

similarities and differences, making observations or categorizations, using

context clues and summarizing key information.

The learner demonstrates thinking at the abstract level, which may include

developing arguments, revising ideas, formulating a hypothesis, integrating

multiple perspectives, or evaluating a situation.

4 The learner extends their thinking by synthesizing multiple concepts, making

novel connections, applying ideas in unexpected contexts or engaging in deeper

analysis.

#### **Zone**

Swivl used the Zone of Proximal Development (ZPD) and Yerkes-Dodson Law to build the Zone score.

SCORE MEANING

**Below** Activities are not challenging enough, or the learner is notably disengaged. The

learner needs more demanding tasks or increased motivation to fully engage with

the material. This zone may result in boredom or lack of progress.

Ideal Activities are appropriately challenging and supportive for the learner's current

level. Learners are engaged and capable of their best learning and productivity.

This zone promotes growth and optimal learning experiences.

**Above** Activities are excessively challenging, or the learner is overly stressed or anxious.

The learner needs additional support, scaffolding, or stress management to effectively engage with the material. This zone may lead to frustration or

overwhelm if not addressed.

#### **Mindset**

Swivl used Carol Dweck's work on mindset to build the Mindset score.

SCORE MEANING

Fixed Demonstrates a fixed mindset, negative attitudes towards learning and

challenges.

**Neutral** Shows a mix of fixed and growth mindset characteristics.

**Growth** Demonstrates a strong growth mindset, positive attitudes towards learning and

challenges.

**Above** Overly positive attitude that may inhibit realistic self-assessment and learning.



#### Tone

Swivl used Carol Dweck's work about how one speaks influences the learning process to build the

SCORE MEANING

Uses language indicating frustration, disengagement, or pessimism. **Negative** 

Uses balanced language without strong positive or negative sentiment. Neutral

**Positive** Uses language indicating enthusiasm, engagement, and optimism.

**Above** Uses language indicating excessive positivity, in cases like sarcasm, superficiality,

or delusion.

## **Cognitive bias**

There are dozens of cognitive biases with generally agreed upon definitions, Swivl identifies and defines a cognitive bias when there is evidence of it in a reflection. Some cognitive biases more commonly occur during reflection, including:

BIAS MEANING

**Confirmation bias** The tendency to search for, interpret, and remember information in a way that

confirms one's preconceptions, while giving less consideration to information that

contradicts them.

Halo effect The tendency to allow one's overall impression of a person or entity (often based

on one positive trait) to influence judgments about unrelated characteristics,

leading to a skewed perception.

**Fundamental** 

The tendency to overemphasize personal characteristics and underestimate attribution error situational factors when explaining someone else's behavior, while often doing the

opposite for one's own behavior.

Sunk cost fallacy The tendency to continue investing in a project, decision, or course of action,

despite it no longer being beneficial, because of the time, money, or effort

already invested.

**Anchoring bias** The tendency to rely heavily on the first piece of information encountered (the

"anchor") when making decisions, even if that information is irrelevant or

insufficient.

**Recency bias** The tendency to give greater weight to recent events or information than earlier

data, even if the earlier information is more relevant or significant.

**Negativity bias** The tendency to focus on, remember, and give more importance to negative

events or information over positive ones.

In-group bias The tendency to favor and prioritize the opinions, actions, or preferences of one's

own group over those of outsiders, leading to biased decisions and actions.

Status quo bias The preference for maintaining the current state of affairs and resisting change,

even when change might be beneficial.

Overconfidence

bias

The tendency to overestimate one's knowledge, abilities, or control over situations, often leading to excessive risk-taking or flawed decision-making.

#### Lesson

Each MirrorTalk reflection comes with a Lesson, located on the front of the reflection card. Swivl used Robert Kegan's <u>Levels of Consciousness</u> and <u>Subject-Object</u> Theories to build the Lesson.

- MirrorTalk analyzes the learner's grade level and reflection to identify key challenges and growth opportunities relevant to their age and their current level of thinking (see Reflection Score).
- Based on this analysis, MirrorTalk provides a key insight to help the learner navigate their current challenge and progress their thinking to the next level.
- When the learner is reflecting on an activity with an objective, the lesson will focus on helping the learner progress their thinking related to the objective.

