



## Evaluation AND Feedback

Words with Meanings

SAAAPM  
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Virtual

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I have **no disclosures** to make & **no conflicts** of interest to reveal

Caveats:

I will **leave out much** material germane to feedback

I will **simplify** the results of studies

### Objectives:

Attendees will be able to:

- Define and differentially use the terms Evaluation and Feedback
- Describe how evaluation can interfere with motivation to learn and how task-relevant feedback can help.
- Discuss how Evaluation and Feedback form a Gordian Knot
- Describe one way to cut the Gordian Knot of Evaluation and Feedback

## Evaluation & Feedback

**A judgment**  
(BORM, ABA, ACGME,  
the Public)

**Information** delivered with  
the sole aim of **improving**  
performance

## Evaluation & Feedback

“...is the systematic collection  
of information for the purpose  
of making decisions”

...is used for growth and  
professional development

## Evaluation & Feedback

**We need both:**

### Evaluation

Assure the public that we are graduating competent anesthesiologists  
Assure the State Medical Boards that we are ....  
Assure the American Board of Anesthesiology that we are....  
= Standard monitoring

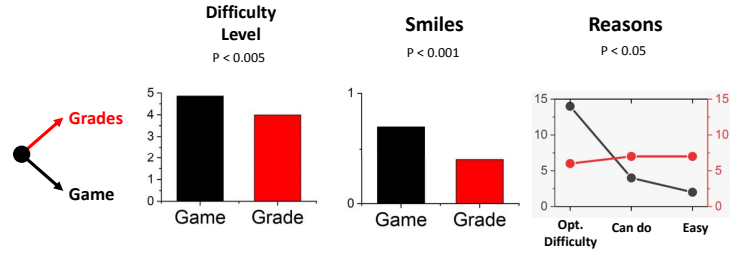
### Feedback

We want our trainees to improve each day throughout training and  
subsequently throughout their careers. Feedback is a tool to achieve  
this goal of improvement.  
= Growth

Evaluation *per se* does not lead to growth or improvement. Indeed, some studies have found that evaluation, in the form of **grades**, reduce interest and performance compared to comments or feedback.

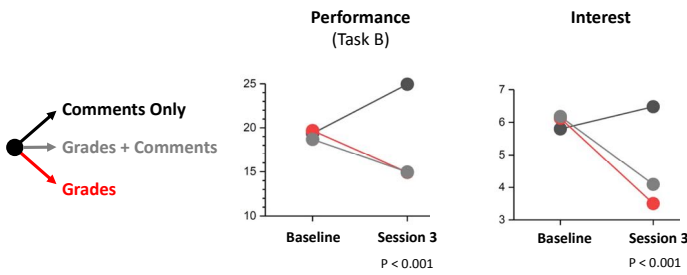


**Free Choice Paradigm with Kids**  
Anagrams: Easy ↔ Difficult



Arter, S. Child Dev. 49, 788 (1978) 6<sup>th</sup> Graders, Randomized, N = 40, USA

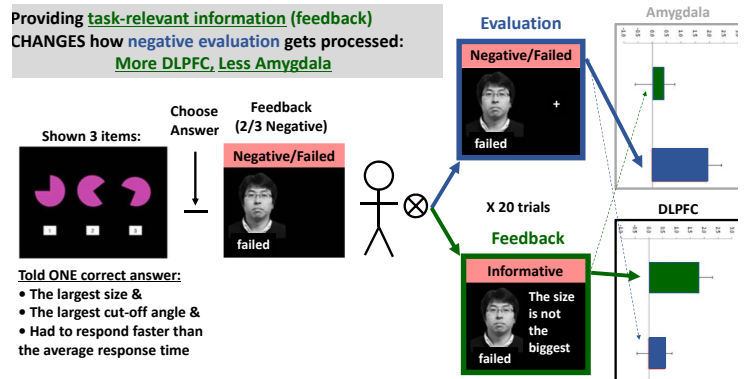
Effects of **Grades** and/or **Comments** on Performance and Interest with Kids



Jutler, R. Br. J. Educ. Psych. 58, 1 (1988) 5<sup>th</sup> & 6<sup>th</sup> Graders, Randomized, N = 132, High performers, Israel

The response to **Evaluation** and **Feedback** can be VERY different

Inclusion of **task-relevant information** reduces the emotional reaction to negative or critical feedback.

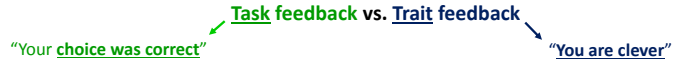


Voo et al. Front. Hum. Neurosci. 9, Article 378. (2015)

### Task Feedback vs. Task Evaluation

“...providing **task-relevant information** (*feedback by the definition from slide 4*) could facilitate implicit down-regulation of negative emotions following failure”

**Task-relevant information** elicits *greater neural activity in the dorsolateral prefrontal cortex* (DLPFC) which affords *cognitive control (executive control) of negative emotions* when participants experience failure.



Using a challenging rule-switching task:

**Motivation** scores were higher after **task-feedback** vs. trait-feedback ( $p = 0.01$ )

**Stress** scores were lower after **task-feedback** vs. trait-feedback ( $p = 0.001$ )

**Accuracy improvement** scores were higher after **task-feedback** vs. trait-feedback ( $p = 0.032$ )

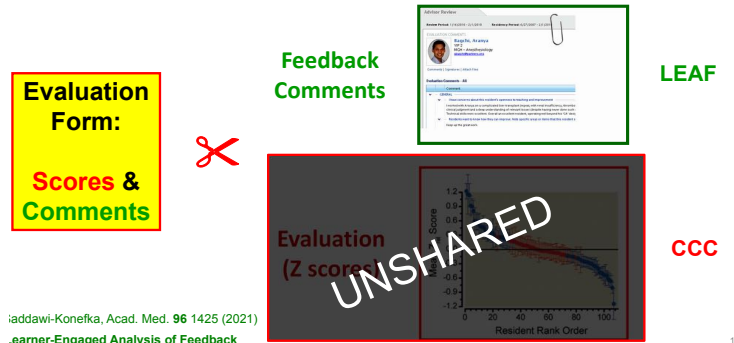
**More participants were positive** after **task-feedback** (75%) than after trait-feedback (30%)

### The Gordian Knot

The **Gordian Knot** is often used as a **metaphor** for an intractable problem (untying an impossibly tangled knot) - *Wikipedia*

The Gordian Knot metaphor pertains to **evaluation and feedback** since they are so **highly intertwined**. One way to deal with this is to “cut the Gordian Knot” thereby separating evaluation and feedback.

### One Approach to cutting the Gordian Knot



Thanks for your attention

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