

Rediscovering Problems

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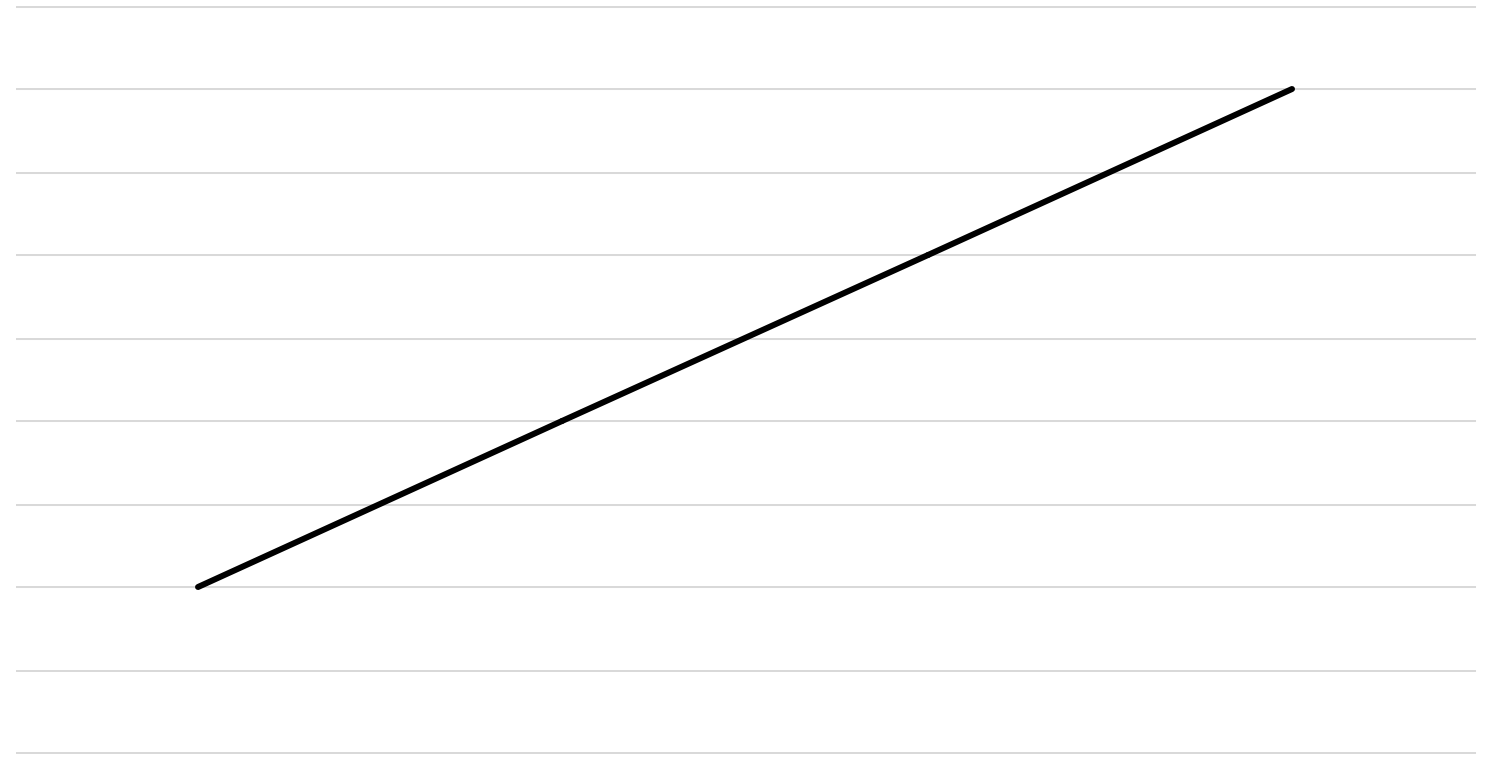
[Gary's website](#)

What are We Going to Study?

- A short story

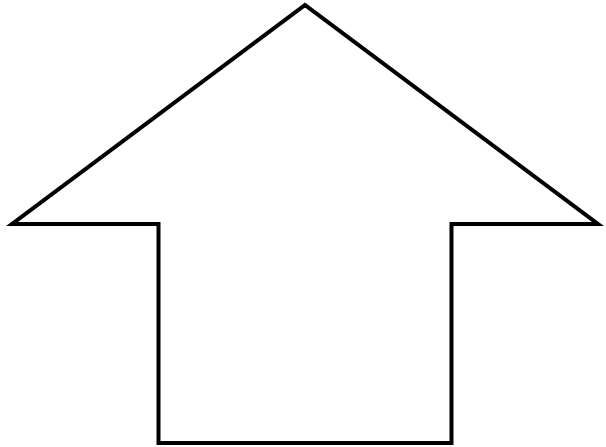
What We Know About Motivation

Learning



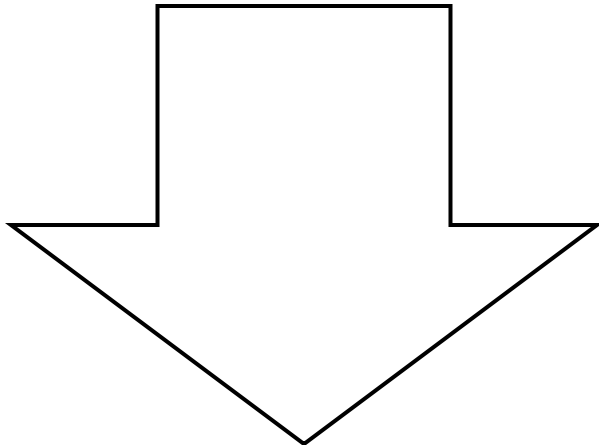
Motivation

Traditional Views of Motivation



Internal

- Autonomy
- Self-efficacy
- Connection



External

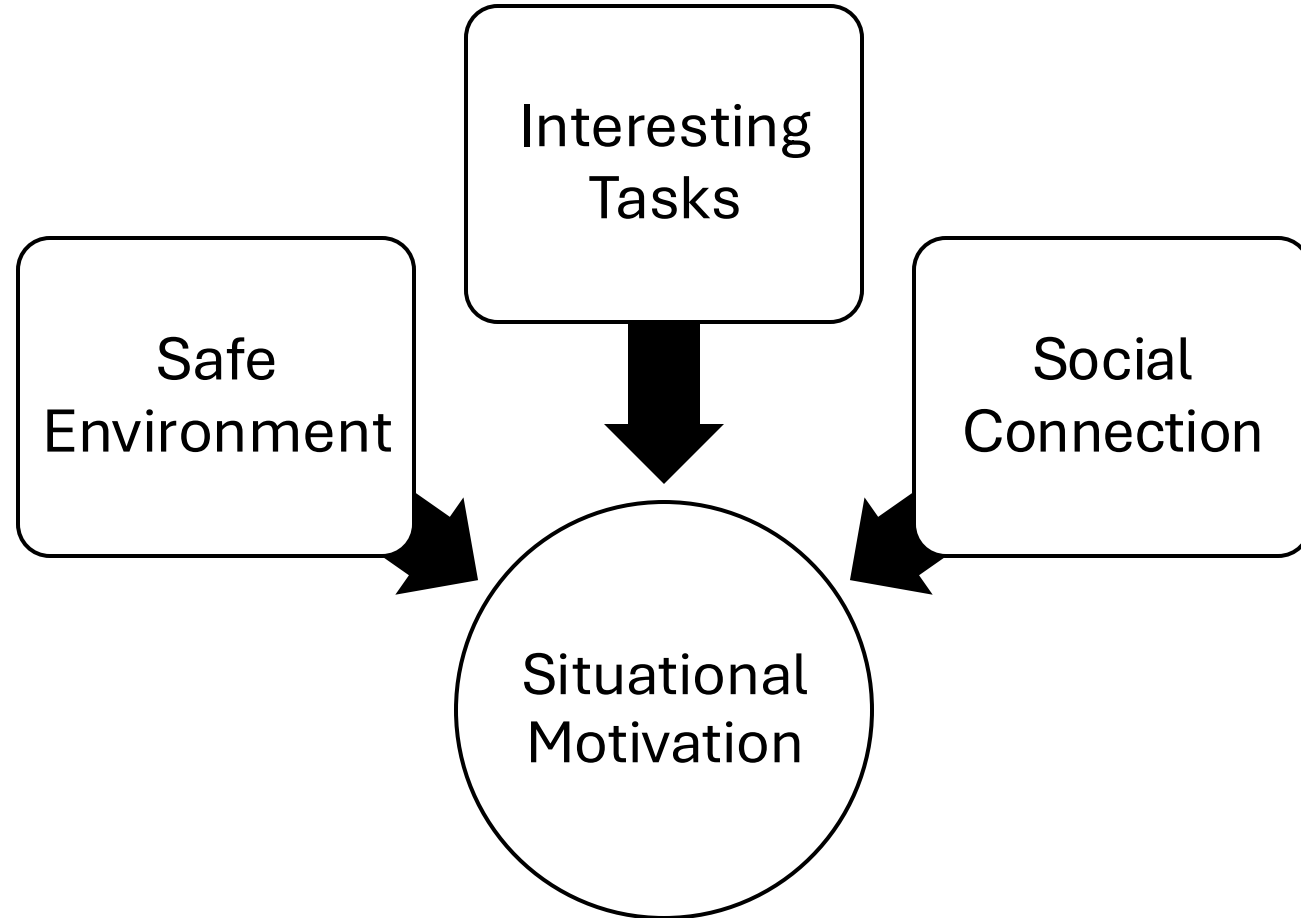
- Extrinsic regulation
- Social pressure
- Future goals

Modern View of Motivation

“motivation is not a static trait but rather a fluctuating construct that varies across **contexts** and evolves over time”

Törmänen, T., Ketonen, E., Lehtoaho, E., Turunen, M., Zabolotna, K., Shubina, T., & Järvenoja, H. (2025). [Situational motivation in academic learning: A systematic review](#). *Educational Psychology Review*, 37(2), 56.

Situational Motivation



What Problems Do: Known to New

- “Here is a way to write poetry.”

- Litany

What Problems Do: Discrepant Events

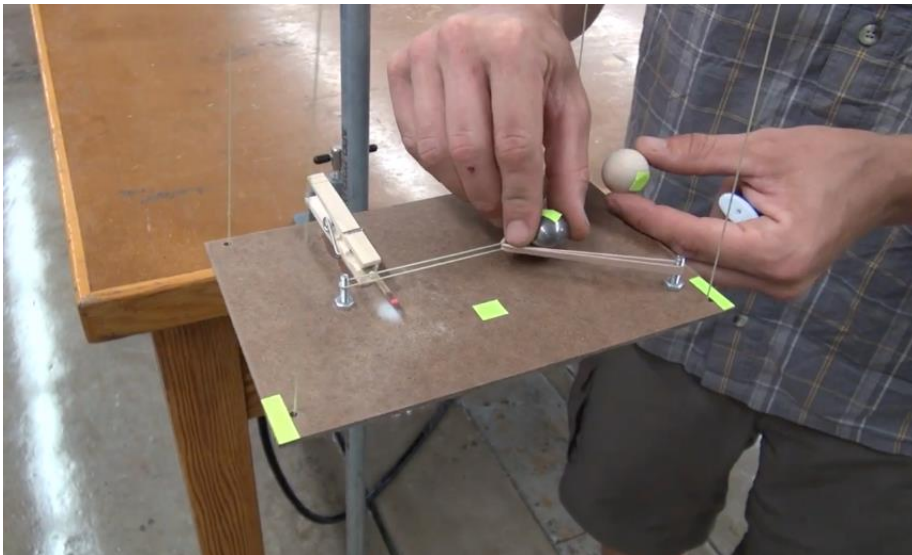
- "Hey, that's weird..."
- James Randi and psychic readings (apologies)

What Problems Do: Let's Try It

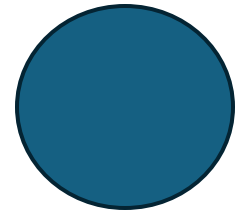
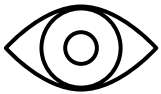
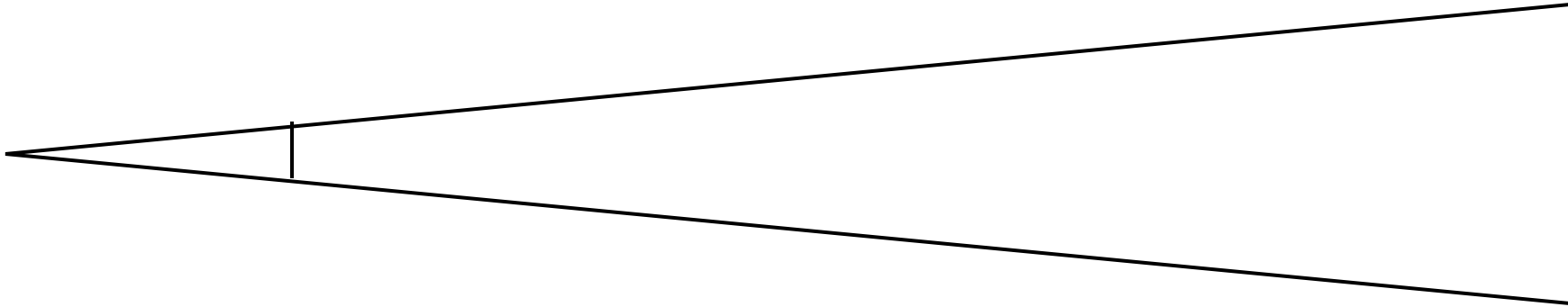


Shoot the Monkey

But let's rename it!



What Problems Do: Let's Try It (Easier)

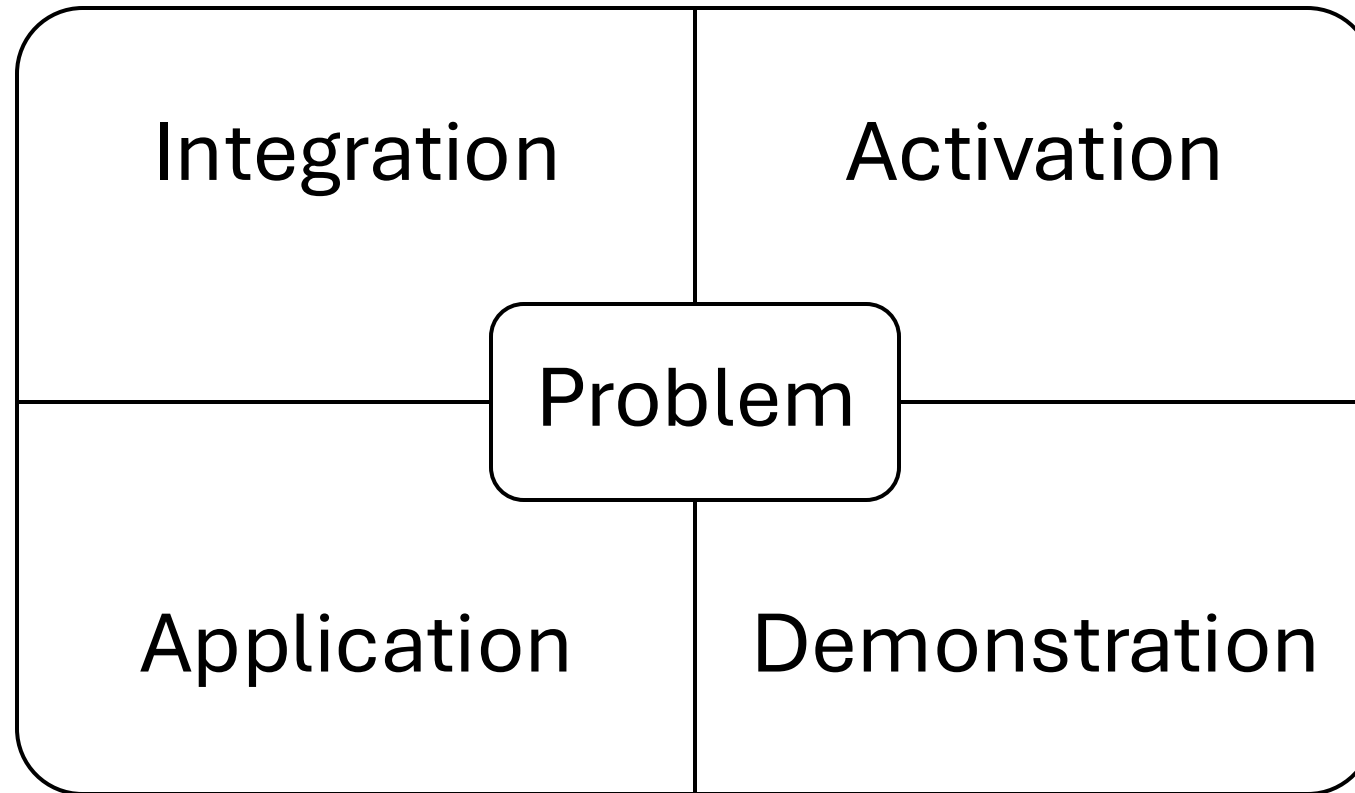


Small height	Small base	Large height	Large base
Measured	Known	Known	Calculate

What Problems Do: Prior Experience

- Consider the problems we have encountered

The First Principles of Instruction



Merrill, D. (2002). [First principles of instruction](#). *Educational technology, research and development*, 50, 3.

[My blog post \(with audio\) on the first principles of instruction](#)

Cases

- Worked examples
- Ill-structured problems
- Analogies
- Alternative perspectives
- Simulations

Assessing Problem Solving

- How was it framed?
- What assumptions were made?
- Was the method reasonable?
- Are data accurately collected and analyzed?
- What meaning did students make?
- Is the product polished?

Ackerman's Advice on Cases

- You – AI – You
- Use media when you can
- Divergent Pedagogies
 - John Dewey, Ken Robinson, Seymour Papert, Paulo Freire