

# Passion or Purpose?

## Challenges of Student Motivation in the New Normal

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# Who Am I?

**Robert W. Songer**

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Global Information & Management  
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 **PhD Candidate**

Information and Computer Engineering  
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# About International College of Technology



**"Fostering Global Innovators"**

- 5-year High School and Junior College
- Student ages: 15 to 20 years

**Department of Science and Technology**

- CDIO-based STEAM Education
- Specialized Engineering Tracks from 3rd year

# School Closures

In April, 2020

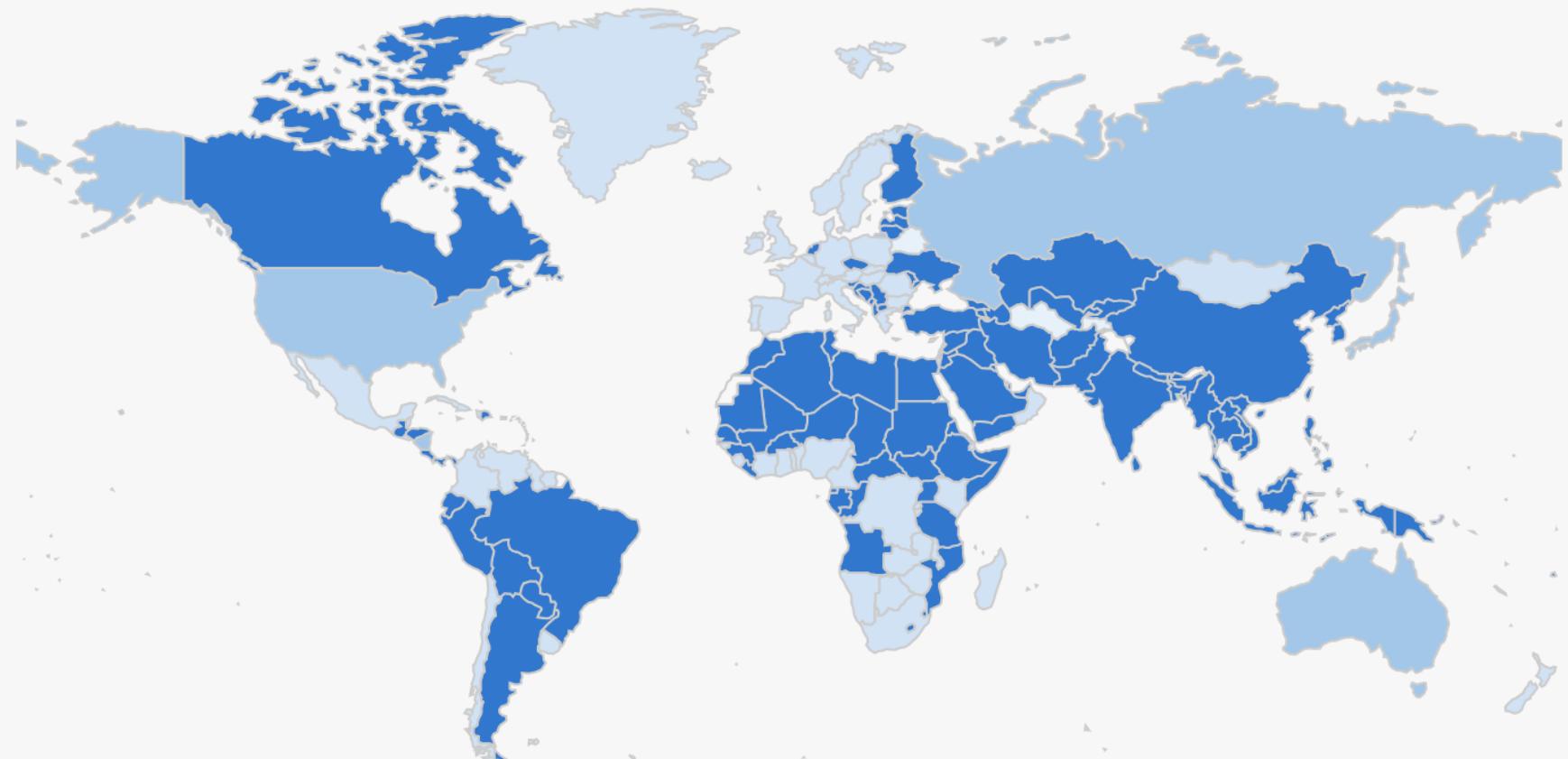
1.25 million affected  
71.8% of all learners

UNESCO, Education: From Response to Recovery. Accessed October, 2021.

Global monitoring of school closures caused by COVID-19

+

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● No data   ● Partially open   ● Closed due to COVID-19   ● Fully open   ● Academic break

Highcharts.com



# EdTech to the Rescue

Digital technology revolutionizing education:

- Online learning platforms
- Learning analytics tools in educational apps
- Access to high quality materials
- Free or low-cost information and knowledge
- Online communities of experts

# The "Digital Divide" (1)

Socioeconomic factors influence **access** and **usage** of emerging technologies.

Affluent schools are more likely to:

- Provide computers/tablets for students to use
- Use computers for modeling/simulation activities vs. drills/practice
- Apply **free** web tools for collaborative problem solving & new media literacy

Massively Open Online Course (MOOC) participants are mostly college-educated.

MOOC completion rates modestly correlate with educational attainment levels.

# The "Digital Divide" (2)

Hansen et al. examined socioeconomic status (SES) of HarvardX and MITx MOOC students.  
(SES includes parents education level, neighborhood income, and neighborhood education)

- MOOC students were mostly from high-SES neighborhoods
- Certificate completion rates were highest for high-SES students as well
- These patterns were particularly strong among adolescents

"Closing gaps with digital learning resources requires targeting innovation towards the students most in need of additional support and opportunity."

Hansen, J. D., and Reich, J. (2015). *Democratizing Education? Examining Access and Usage Patterns in Massive Open Online Courses*. Science 350, no. 6265: 1245-1248.

# The EdTech "Matthew Effect"

"For whoever has will be given more, and they will have an abundance. Whoever does not have, even what they have will be taken away from them." Matthew 13:12

Justin Reich describes the digital divide as more of a "digital fault line":

1. Technology embeds systems of inequality rather than disrupting them.
2. Free tech benefits those who can take advantage of it rather than those in need.
3. Social and cultural **exclusion** is more powerful than access to technology.

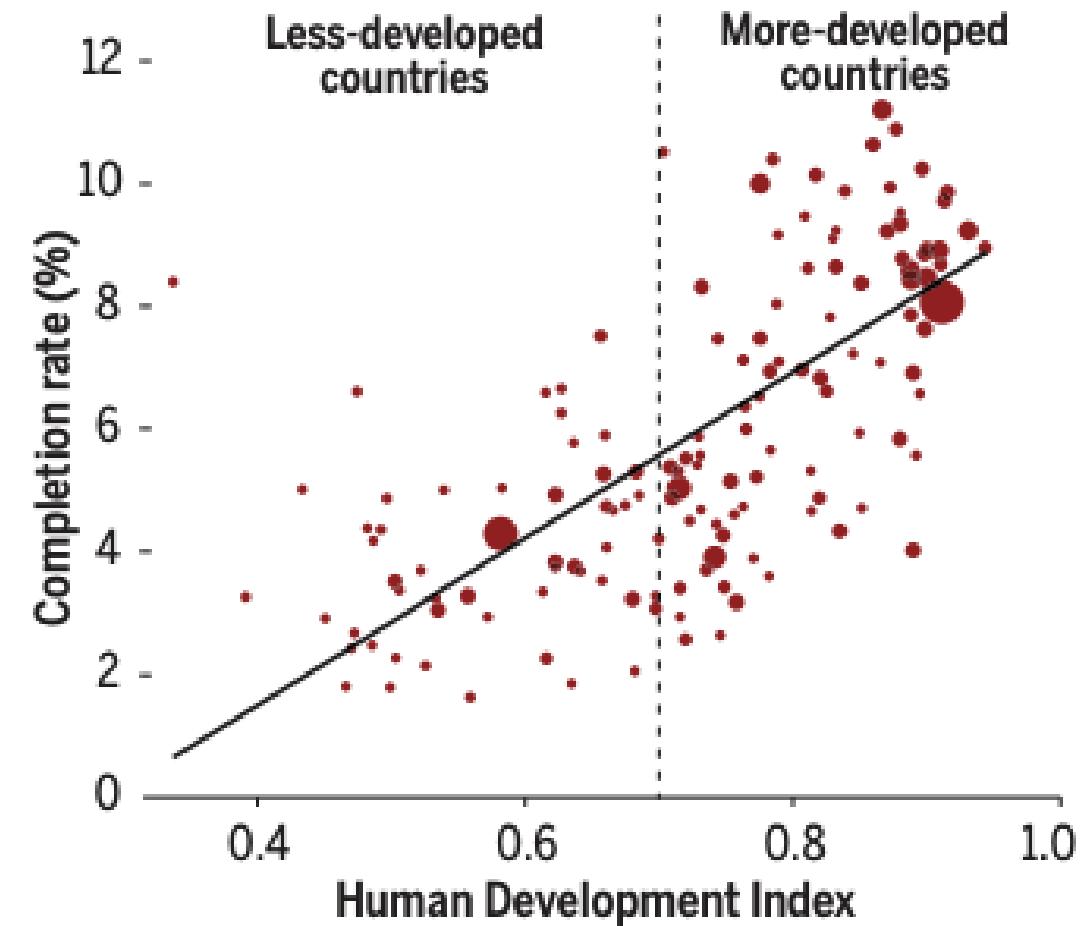
Reich, J. (2020). Failure to Disrupt: Why Technology Alone Can't Transform Education. Harvard University Press, 2020

# Example: Social Identity Threat

Fear of being seen as less capable based on one's race, gender, nationality, status, etc.

Low persistence and completion rates for MOOC students from less-developed countries<sup>†</sup> can be mitigated with "social belonging interventions".

<sup>†</sup> According to the [United Nations Human Development Index](#)



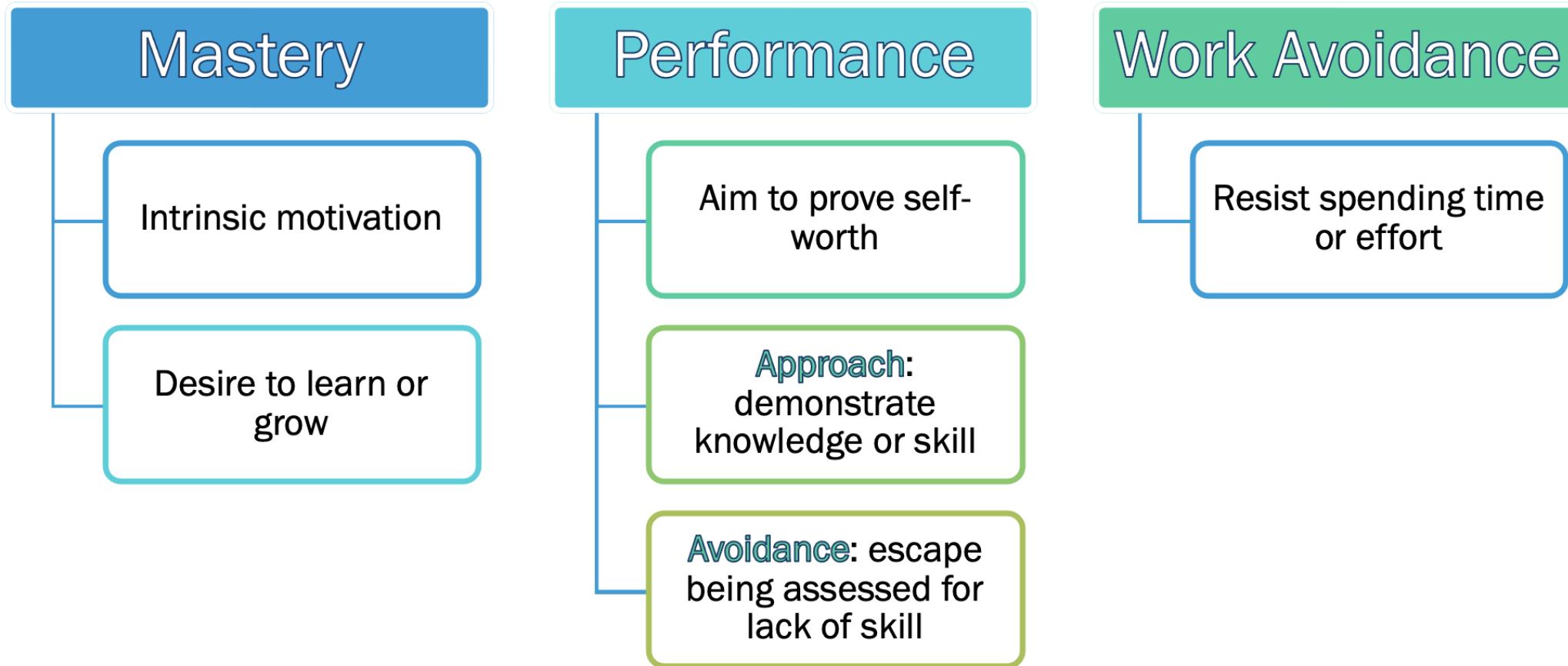
Kizilcec, R. F., Saltarelli, A. J., Reich, J., & Cohen, G. L. (2017). Closing global achievement gaps in MOOCs. *Science*, 355(6322), 251–52.

# Social Exclusion Undermines Motivation

Factors of engagement include student-perceived **value of outcome** and **cost to achieve it**.

- **Approach Motivation:** When a high perceived value outweighs the cost
- **Avoidance Motivation:** When cost (effort, identity threat) outweighs perceived value
- **Intrinsic Motivation:** The activity itself is valuable (enjoyment, mastery)
- **Extrinsic Motivation:** Some other reward can be gained (money, recognition)

# Achievement Goal Theory



# Student Grade Obsession

Performance-oriented achievement driven by extrinsic rewards can be disastrous.

Students may be under pressure to perform for various reasons:

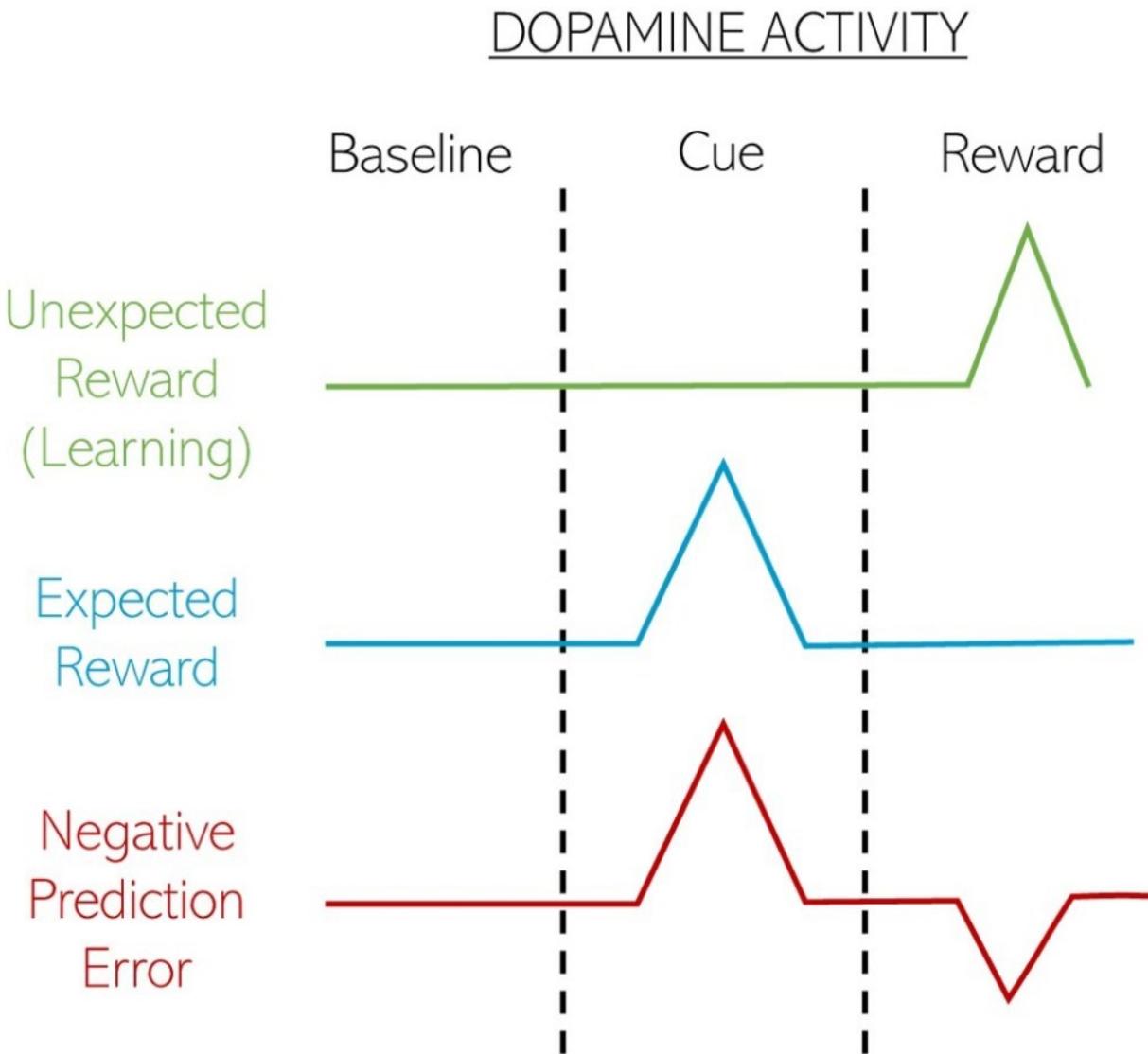
- Achieve qualifications (i.e., scholarships)
- Improve employability
- Live up to the expectations of one's teachers, parents, and/or self

Consequences include anxiety, cheating, a malformed self-concept, intellectual dependency on teacher approval, and undermined intrinsic motivation to learn.

# The Paradox of Higher Education

Cultural assumptions can turn institutes of learning into hierarchical structures of self-worth.

- Favorable evaluation motivates students to work harder
- Grading is a fair, reliable, and objective system for measuring accomplishments
- Students and teachers must be accountable for proof of achievements



## Behavioral Reinforcement

The human mind learns to predict rewards through dopamine responses. Over time, the expectation replaces the reward itself in terms of efficacy. When this prediction fails, a negative signal weakens the connection.

Image Credit: Rebecca Clements, [Science in the News](#)

# The Myth of Sisyphus

## *The Absurd:*

We struggle to understand our purpose in a world that offers no answers.

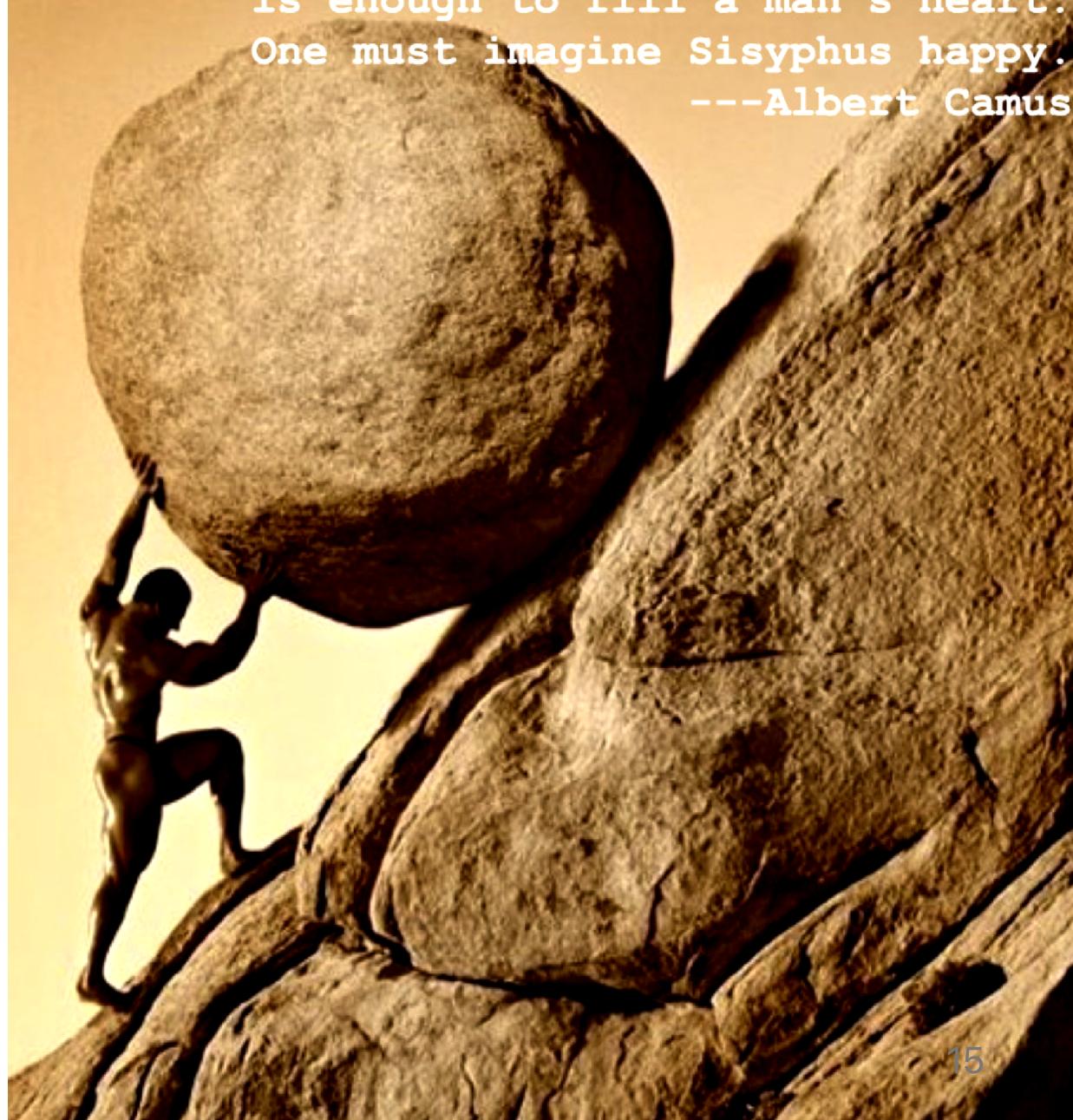
Repetition is meaningless as it gets us nowhere.

## *The Antidote:*

The lack of a *given* meaning allows for *interpreted* meaning.

Each iteration offers a new perspective.

The struggle itself toward the heights  
is enough to fill a man's heart.  
One must imagine Sisyphus happy.  
---Albert Camus



# Finding Your Passion: Growth Mindset Vs. Fixed Mindset

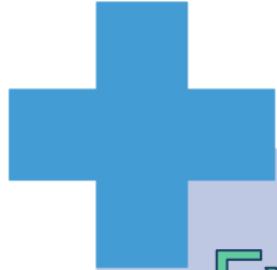
Students who believe their interests to be fixed:

- are less engaged with topics outside their existing interests,
- believe passions provide limitless motivation without difficulties, and
- disengage faster when potentially new interests became difficult.

*There are many similarities between a growth mindset and an exploratory identity.*

O'Keefe, P. A., Dweck, C. S., Walton, G. M. (2018). Implicit Theories of Interest: Finding Your Passion or Developing It? *Psychological Science* 2018, Vol. 29(10) 1653–1664.  
DOI: [10.1177/0956797618780643](https://doi.org/10.1177/0956797618780643)

# Identity Status Theory



## Exploratory

- Open to different identities
- Collect information and make decisions rationally

## Normative

- Committed to protecting or validating an identity
- Make decisions based on social clues

# Models of Motivation Rooted in Culture

**Independent model of motivation** in individualistic "Western" societies

- Achievement is higher in students with stronger interest, enjoyment, and confidence
- Motivated by personal interests and enjoyment, ***PASSION***

**Interdependent model of motivation** in collectivistic "Eastern" societies

- Achievement is higher for students with strong connections to supportive others
- Motivated by social expectation and contribution, ***PURPOSE***

# Predicting Achievement from Passion

Li et al. found passion was less of a predictor for achievement in collectivistic societies than in Western, educated, industrialized, rich, and democratic (WEIRD) societies.

- The role of passion should not be overemphasized in diverse learning environments.
- Researchers need measures of interdependent motivation for collectivistic contexts:
  - Perceived norms in the classroom
  - Sense of belonging
  - Responsibility to one's family

Li, X. Han, M., Cohen, G. L., Markus, H. R. (2021). Passion matters but not equally everywhere: Predicting achievement from interest, enjoyment, and efficacy in 59 societies. *Proceedings of the National Academy of Sciences* Mar 2021, 118 (11) e2016964118; DOI: 10.1073/pnas.2016964118

# The Case of Tokido: Passion Drives Purpose

Hajime "Tokido" Taniguchi

University of Tokyo

Graduate School of Engineering, 2010

**Competitive Fighting Game Champion**

Approx. Total Winnings: \$585,359

- Found renewed purpose in his passion for games.



Photo Credit: [TOPANGA](#)

# The Case of Afaf: Purpose Guides Passion

2nd year student

International College of Technology

**Video Producer and Contestant**

**Space Debris - Breakthrough Junior Challenge 2021**

➡ A strict goal allowed her to explore her interests.



# Take Away Advice for Addressing Motivation

- Foster a sense of belonging by explicitly centralizing diverse perspectives
- Apply grading to promote self-reflection/formative assessments
- Cultivate a growth mindset for both learning and interest
- Establish clear expectations and norms without undermining personal autonomy

# Thank You