

Passion or Purpose?

Challenges of Student Motivation in the New Normal

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Who Am I?

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About International College of Technology



Mission: To Foster Global Innovators

- 5-year High School and Junior College level CDIO-based STEAM Education
- Students transfer to university at 3rd-year level after graduation

Department of Science and Technology

- Integrated engineering experiences in first three years
- Specialized engineering tracks from 4th year

School Closures

In April, 2020

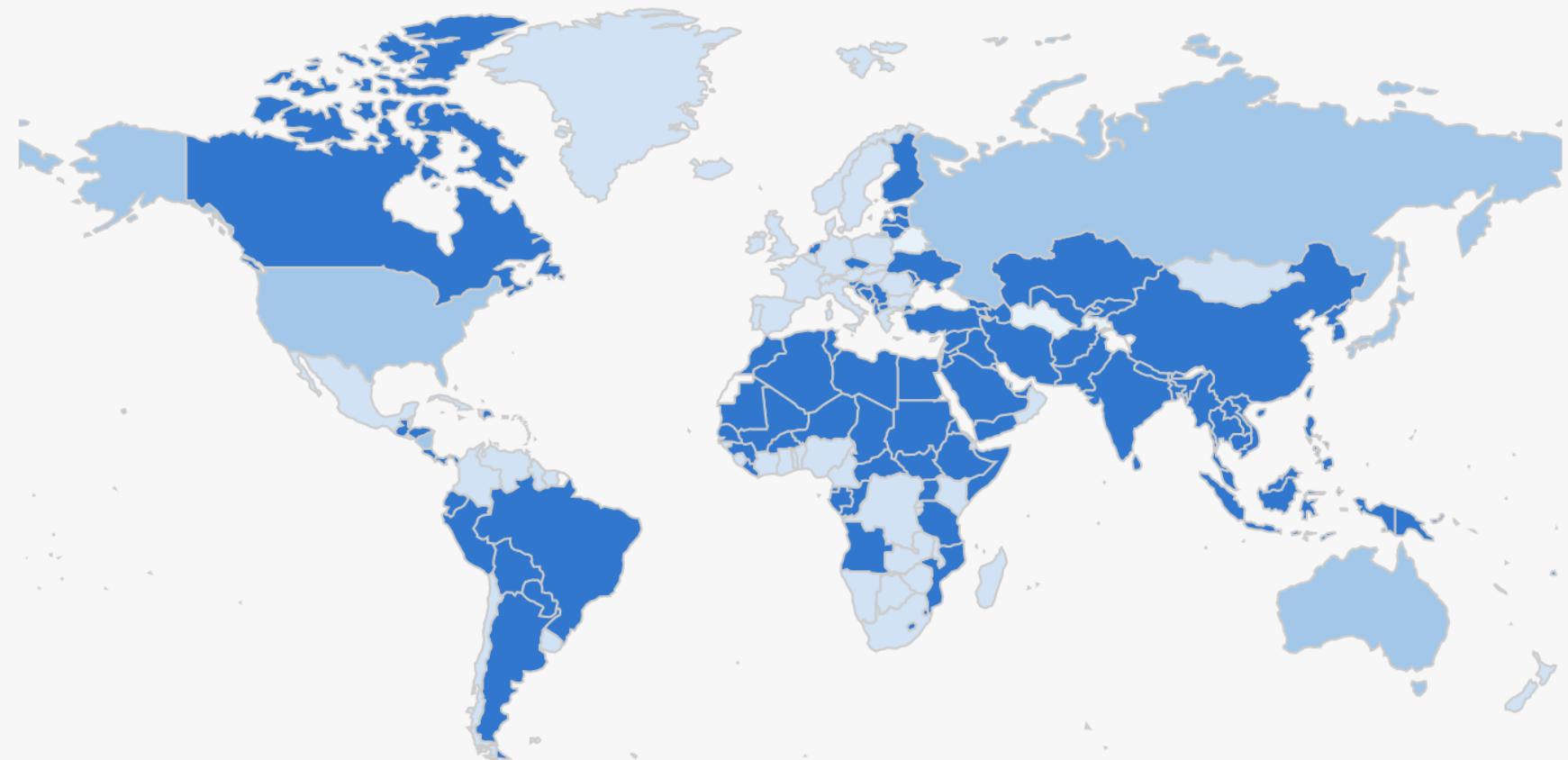
1.25 million affected
71.8% of all learners

UNESCO, Education: From Response 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 and Reich examined socioeconomic status (SES) of HarvardX and MITx 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(6265), 1245-1248. DOI: [10.1126/science.aab3782](https://doi.org/10.1126/science.aab3782)

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

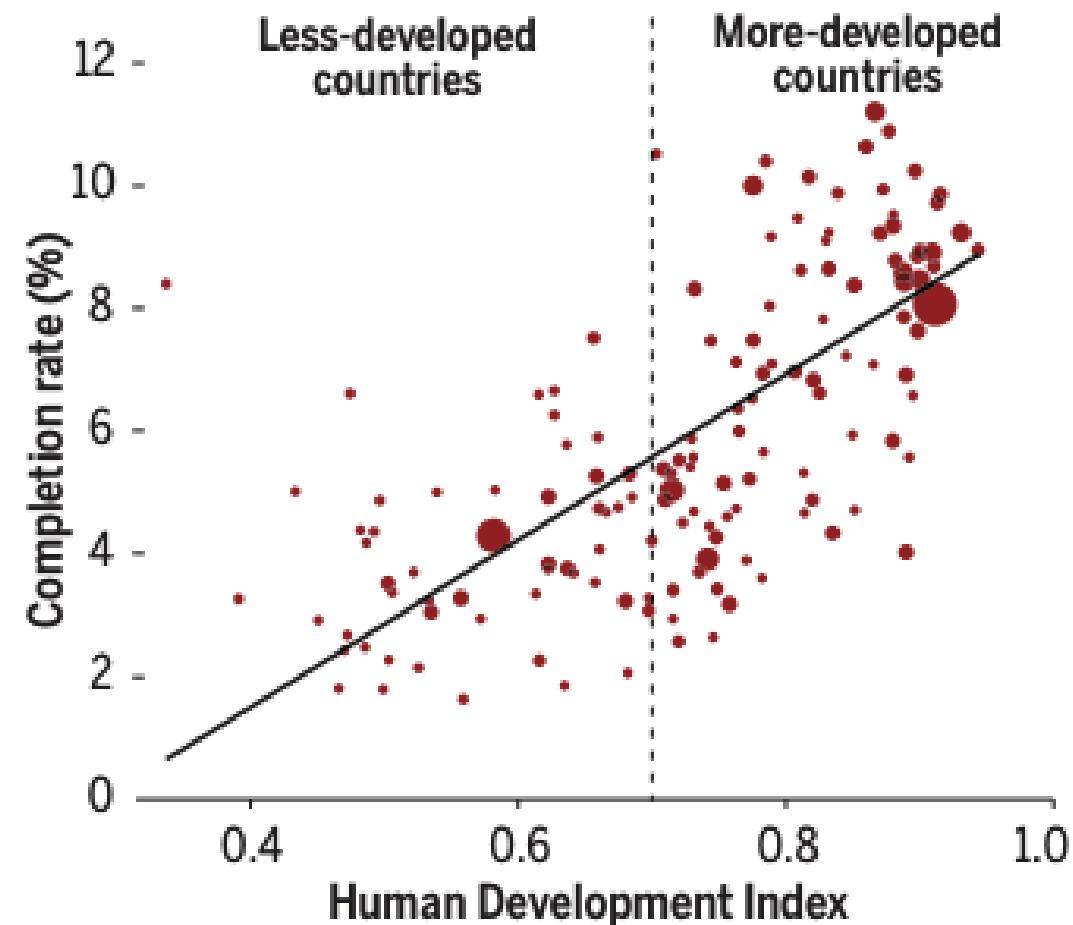
Example: Social Identity Threat

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† can be mitigated with "social belonging interventions".

† According to the [United Nations Human Development Index](#)

Kizilcec, R. F., Saltarelli, A. J., Reich, J., and Cohen, G. L. (2017). Closing global achievement gaps in MOOCs. *Science*, 355(6322), 251–52. DOI: [10.1126/science.aag2063](https://doi.org/10.1126/science.aag2063)



Passion or Purpose?

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

	Passion	Purpose
Value of Outcome	<ul style="list-style-type: none">- Personal interest & enjoyment- Mastery, growth and learning- Building self-efficacy	<ul style="list-style-type: none">- Sense of identity/self-worth- Status and recognition- Contribution to family/society
Cost of Engagement	<ul style="list-style-type: none">- Boredom and irrelevance- Mistakes hurt self-confidence	<ul style="list-style-type: none">- Experience of social exclusion- Wasted time on little progress

- **Approach Motivation:** When the perceived **value** outweighs the **cost**
- **Avoidance Motivation:** When the perceived **cost** outweighs the **value**

Cultural Models of Motivation

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 contribution and expectation, **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 cultures:
 - 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](https://doi.org/10.1073/pnas.2016964118)

Motivation in Educational Psychology

Carol Ames' **Achievement Goal Theory** describes how students engage with a task.

- **Task orientation** focuses on completing some task to the best of one's ability.
 - Associated with positive cognitive, affective, and behavioural outcomes
- **Ego orientation** focuses on one's performance relative to that of others.
 - Outcomes suffer when perceived competence is low

The *motivational climate* provides clues for students to orient themselves.

Ames, C. (1992). Achievement goals and the classroom motivational climate. In D. H. Schunk & J. L. Meece (Eds.), *Student perceptions in the classroom* (pp. 327–348). Lawrence Erlbaum Associates, Inc.

Passion, not Obsession (1)

Institutes of higher education must handle two competing objectives:
Promoting holistic learning and accrediting student accomplishments

The role of grades is influenced by **cultural assumptions**:

- 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.

Passion, not Obsession (2)

Student grades obsession: extreme ego-oriented achievement driven by extrinsic rewards.

Students may be under pressure to perform for various reasons:

- To achieve qualifications (i.e., scholarships)
- To improve employability
- To 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 Myth of Sisyphus

The Absurd:

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

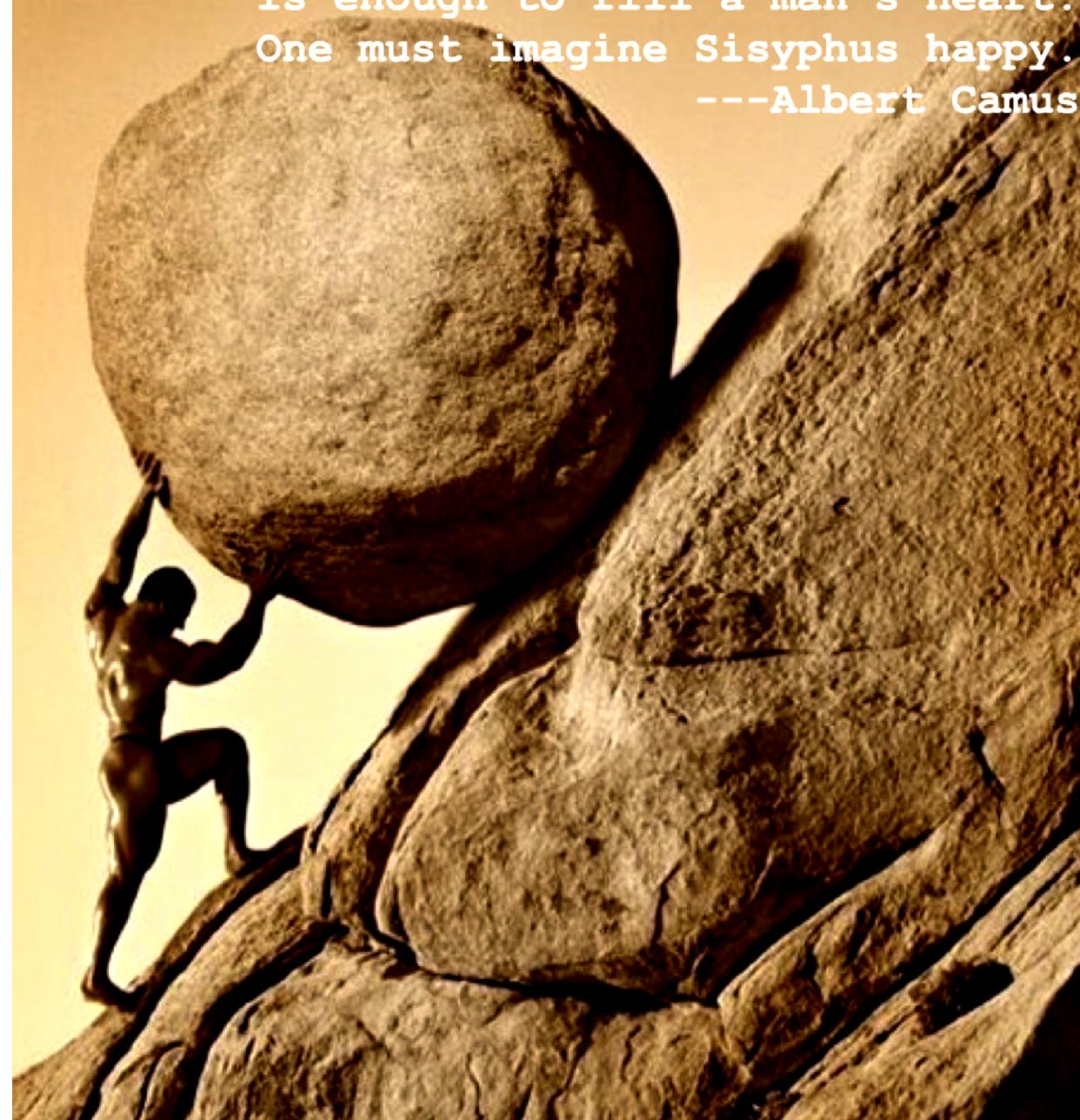
Repetition is meaningless as it gets us nowhere.

The Antidote:

The lack of a *given meaning* in life invites us to master an *interpreted meaning*.

Iterating over things gives new perspective each time.

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



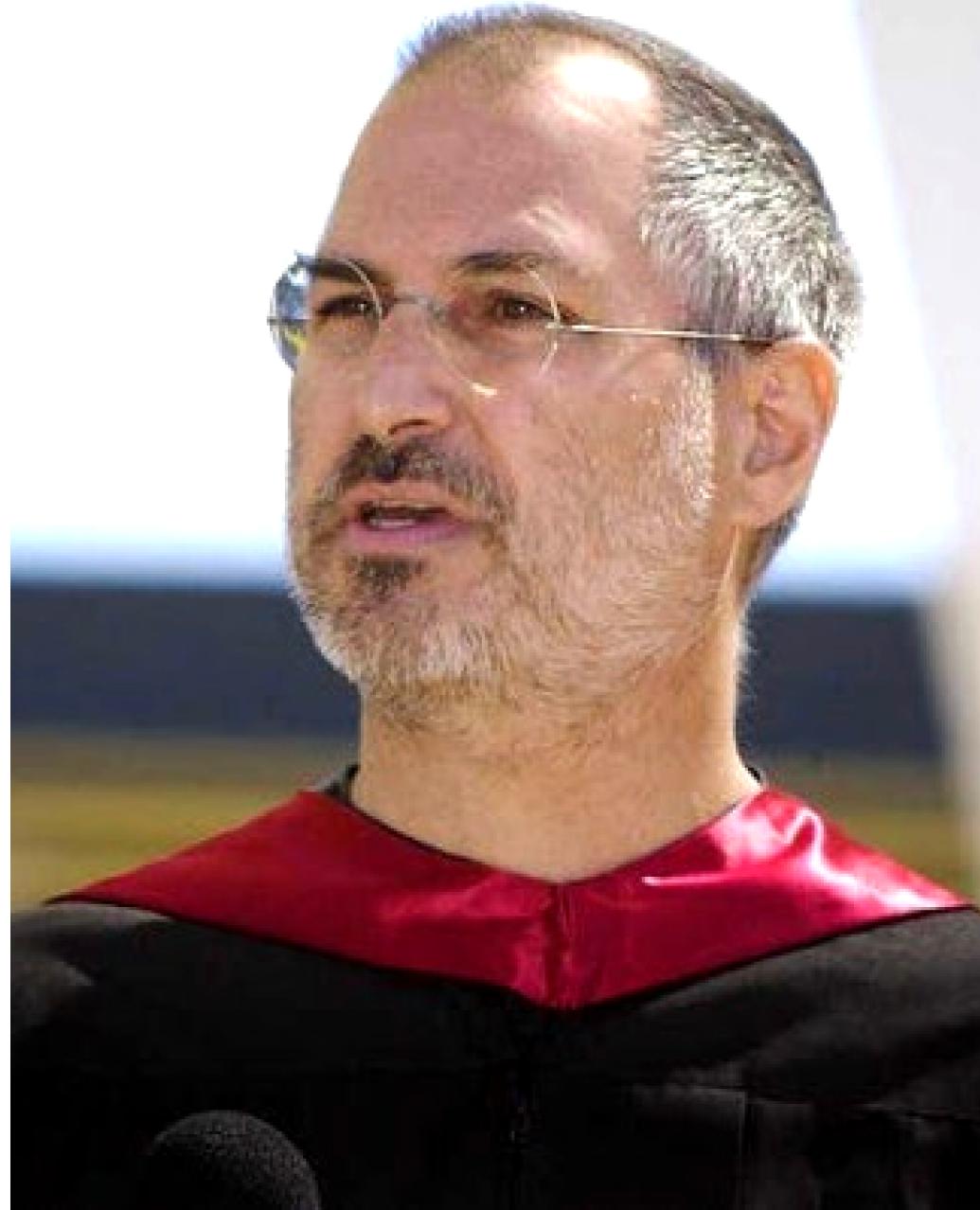
"Do What You Love" (DWYL) Advocation

Assumptions behind DWYL advice for students:

- All students have the potential to be successful if they just find their passion and work hard at it.
- Everybody has multiple career options and full agency regarding the direction of their career.
- All work should serve a passion or eventually evolve to that point.

Stebleton, M. J. (2019). Moving Beyond Passion: Why "Do What You Love" Advice for College Students Needs Reexamination, *Journal of College and Character*, 20(2), 163-171. DOI: [10.1080/2194587X.2019.1591289](https://doi.org/10.1080/2194587X.2019.1591289)

Photo Credit: Linda A. Cicero/Stanford News Service



Finding Passion Vs. Developing Passion

Fixed Mindset

Students who believe their interests to be fixed:

- are less engaged with topics outside their existing interests,
- believe passion provides limitless motivation with no difficulties, and
- disengage faster when potentially new interests become difficult.

Growth Mindset

Students approach subjects with more enthusiasm and persistence when they believe personal interests can be developed like a skill.

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

Exploration in STEM

An openness to exploration has shown better motivation, retention, and cost perceptions for students in STEM majors.

- **Exploratory identity status:** students seek out information and reflect on it
- **Normative identity status:** students are committed to perceptions of self

Perez, T., Cromley, J. G., and Kaplan, A. (2014). The role of identity development, values, and costs in college STEM retention. *Journal of Educational Psychology*, 106(1), 315–329. DOI: [10.1037/a0034027](https://doi.org/10.1037/a0034027)

Summary of Concepts

- Passion as a source of motivation is connected to individual interests; whereas, purpose is connected to feelings of social belonging.
- Both passion and purpose are encouraged by social and cultural factors in a student's life with passion being a greater predictor for achievement in individualistic societies.
- Passion and purpose can fulfill our needs for intrinsic meaning while living in a silent, repetitive world.
- Students who persist in their studies have greater confidence, are more open to new experiences, and have a higher potential for intrinsic motivation in their pursuits.

The Case of Afaf: Purpose Guides Passion

Afaf Alaa

2nd year student

International College of Technology

Video Producer and Contestant

Space Debris - Breakthrough Junior Challenge 2021

- A strict goal helped her to explore her interests.



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](#)



2021 CDIO Asian Regional Meeting, Kuwait



Take Away Advice for Addressing Motivation

- Foster a sense of belonging by explicitly centralizing diverse perspectives
- Establish clear expectations and norms without undermining personal autonomy
- Apply grading to promote self-reflection/formative assessments
- Cultivate a growth mindset for both learning and interest
- Consider reflection activities that relate subject matter to students' sense of purpose
- Maintain a balance between language of passion and language of purpose

Thank You

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