Leveraging Psychosocial Factors from Academic Potential to Academic Talent

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Outline

- Why examine psychosocial perceptions within the context of high ability

- How psychosocial perceptions propel academic talent development

- How to cultivate influential psychosocial perceptions

- How psychosocial perceptions can potentially reduce excellence gaps

Thought Exercise-Four Questions

- What if I told you...
  - Factors
  - Factors that were under his control (and can be under anyone else's)?
  - Malleable?
  - I could teach you how to cultivate these factors to aid in your (or someone else's) talent development?

- Would you be interested?
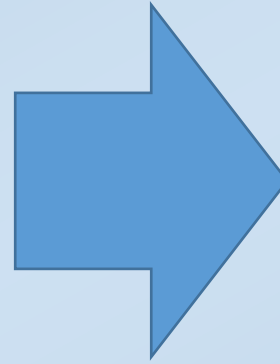
Thought Exercise

- Stephen Curry is gifted within the domain of basketball
- How?
  - Confluence of factors: luck, opportunity, mentorship (dad), personality, advanced athletic potential
  - Under his control: hard work, perseverance, self-perceptions, goals
- How many shots does Stephen Curry take a day? A week?

- Shoots a minimum of 250 shots a day, 2,000 shots a week
  - 1.5 million shots before he got his shot at the NBA

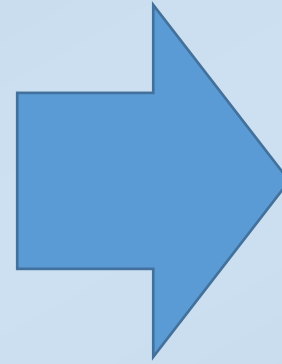# Thought Exercise

Still a gifted NBA player?

Maybe

500,000 shots from birth through college

Thought Exercise

Still a gifted NBA player?

Probably not. Wouldn't have the needed basketball skills.

1,500 shots from birth through college

Talent Development in a Single Quote

- Giftedness is a predisposition that is developed
  - "Experts are born, then made"-Johnathan Wai, 2014
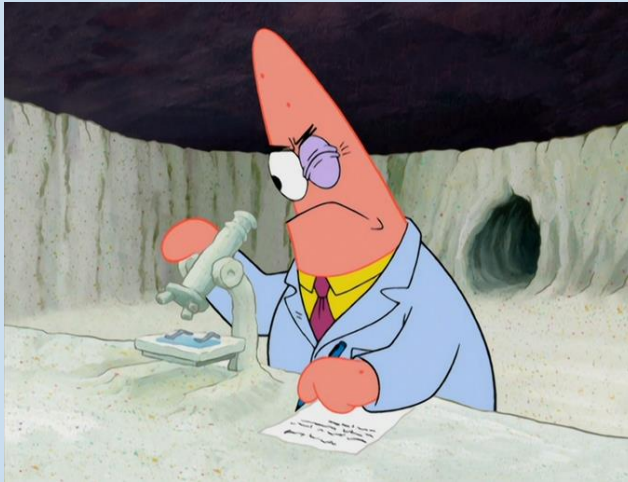 - Potential ►Achievement ►Eminence

 + ≠

Why Examine Psychosocial Factors?

- Because they are important!
  - We spend A LOT of time discussing potential, ability, and opportunity, while almost completely neglecting psychosocial perceptions
    - Diminishing returns

If Academic Potential is a Car…

Gas:
psychosocial factors (e.g., motivation, passion, interest, perseverance)

Transmission:
psychosocial factors (e.g., motivation, interest, self-concept, confidence)

Tires:
mentors, friends, luck

Engine:
opportunity, environment, resources, potential

Why Examine Psychosocial Factors?

- Don't believe psychosocial factors are important?
  - Think of the accomplishments of these individuals

Two questions to spur action

Unmotivated?

Didn't believe in their ability to be successful?

Pessimistic?

Quitters

Still Not a Believer?

- Here are several studies…

Hope

- Snyder's (1991) theoretical framework of hope as a cognitive-motivational process.
  - One's ability to envision a better tomorrow mixed with their belief that they can make it happen
    - Agency and pathways
  - Positively related to good outcomes: achievement, health, performance, and wellbeing (Snyder, 2002)
  - Inversely related to bad outcomes: depression, anxiety, and PTSD (Snyder, 2002)
  - Measured using the Children Hope Scale

- Proven to be malleable
  - Weis & Speridakos (2011) meta-analysis

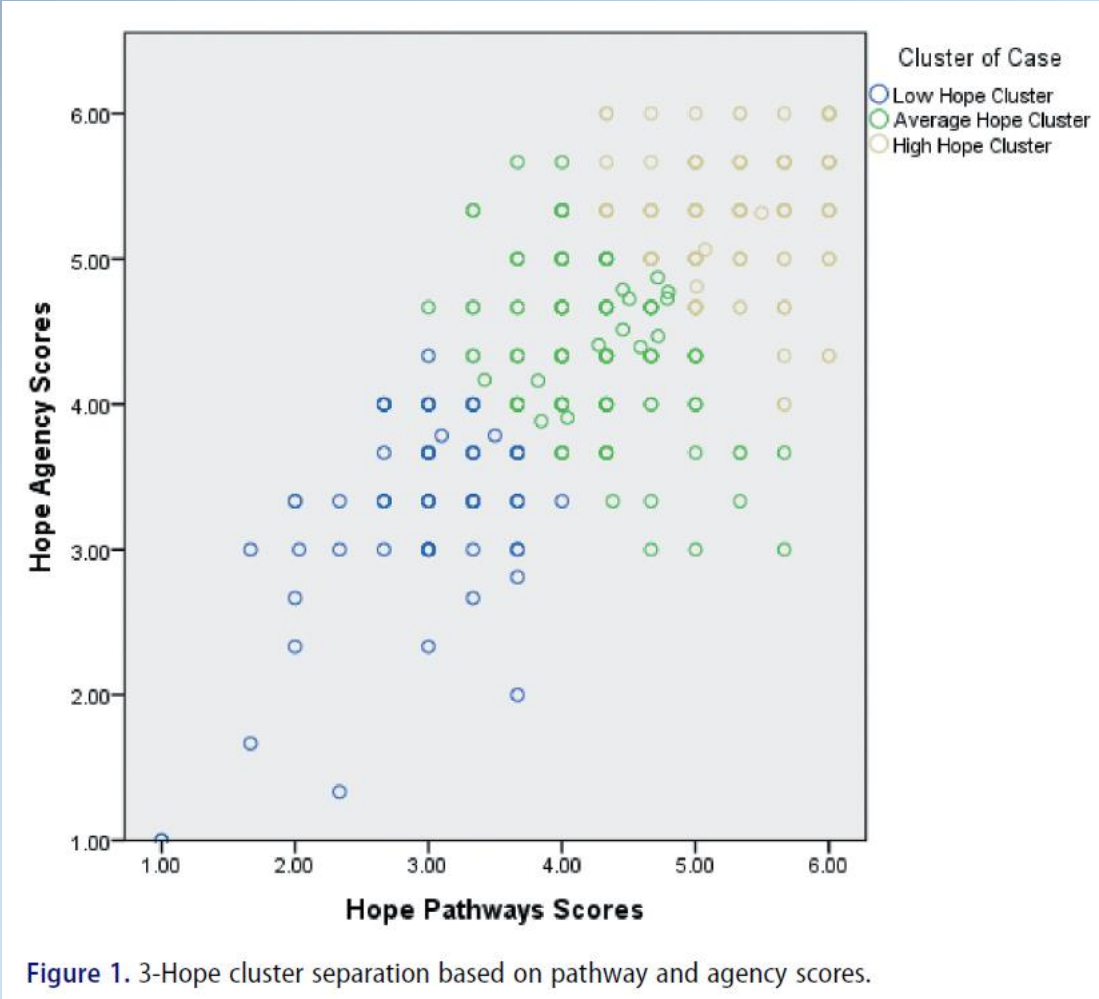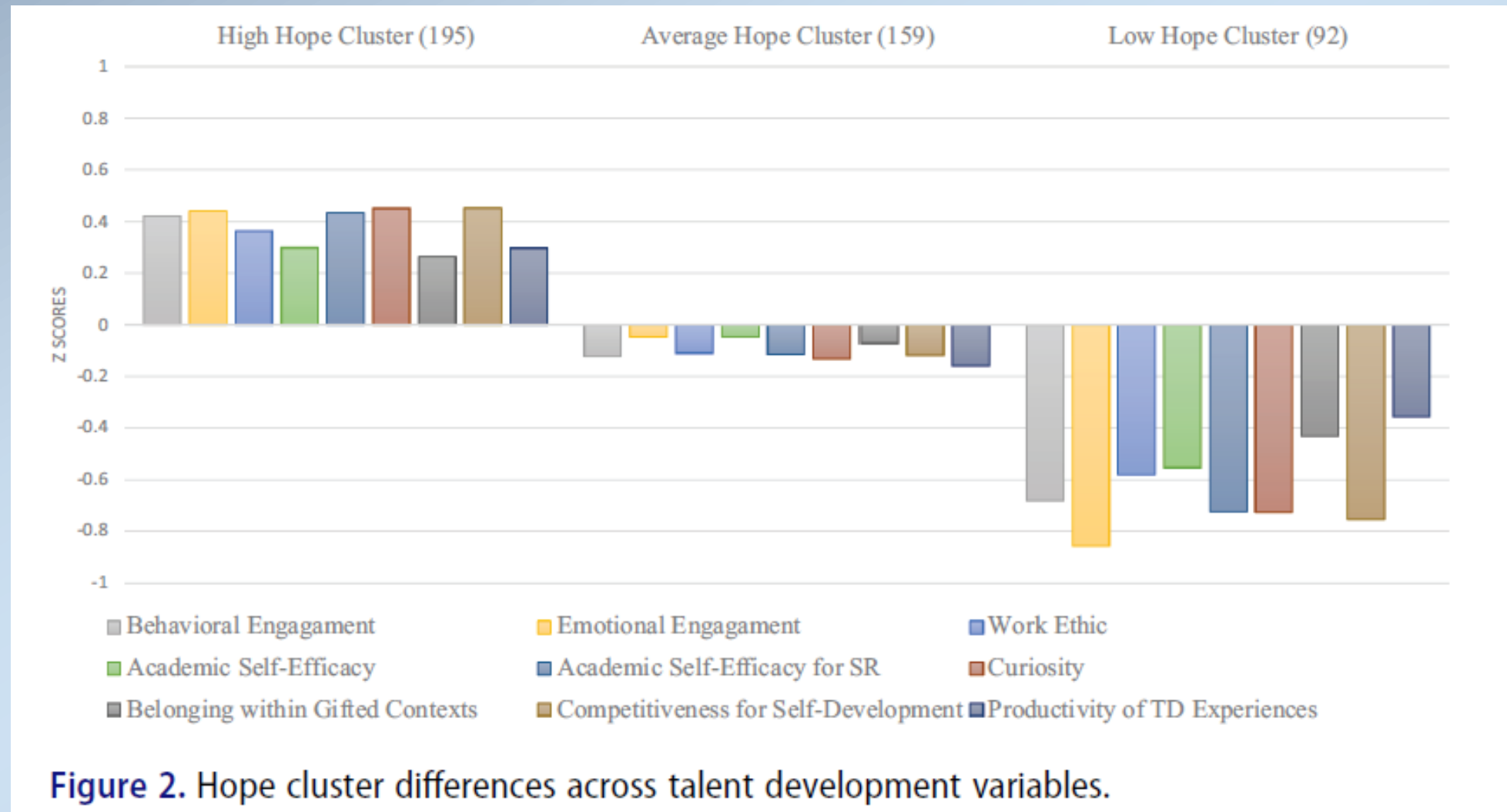# How Well Do Psychosocial Perceptions Predict Academic Talent Development

Figure 1. 3-Hope cluster separation based on pathway and agency scores.

Table 3. Demographic representation in hope clusters.

Demographic	High Hope 195	Average Hope 159	Low Hope 92	Cramer's V
Gender				.038
Male	92 (45.8%)	71 (35.3%)	38 (18.9%)	
Female	87 (42.9%)	72 (35.5%)	44 (21.7%)	
SES				.074
Working/Lower Middle Class	10 (33.3%)	11 (34.4%)	11 (34.4%)	
Middle Class	101 (43.5%)	86 (37.1%)	45 (19.4%)	
Upper Class/Wealthy	84 (46.2%)	62 (34.1%)	36 (19.8%)	
Race/Ethnicity				
Europe American/White	21 (43.8%)	16 (33.3%)	11 (22.9%)	
Asian/Asian American	77 (38.9%)	73 (36.9%)	48 (24.2%)	
African American	7 (46.7%)	4 (26.7%)	4 (26.7%)	
Latinx/Hispanic American	5 (62.5%)	3 (37.5%)	0 (0.0%)	

How Well Do Psychosocial Perceptions Predict Academic Talent Development

Figure 2. Hope cluster differences across talent development variables.

How Well Do Psychosocial Perceptions Predict Academic Talent Development

- Dixson (under review)

  - 446 (49.8% male) academically talented adolescents aged 8–17

  - Hope, academic self-concept, and school belonging accounted for 28.7% of perceived productivity of a talent development experience

    - Learned more from, saw more value in, and took better advantage of growth opportunities

  - Hope, academic self-concept, and school belonging accounted 29.3% of one's desire to improve their academic talents

    - Better psychosocial perceptions > the more one wanted to intentionally develop their academic talents

How Well Do Psychosocial Perceptions Predict Academic Talent Development

- Dixson, Worrell, Olszewski-Kubilius, and Subotnik (2016)

  - 609 (42.3% male) academically talented adolescents aged 10–18

  - Grit, hope and academic self-efficacy predicted 11% of achievement's variance beyond demographics (SES, sex, age) and perceived ability

Table 4. Hierarchical regression predicting self-reported GPA

Variable	B	β	Adjusted R^2	ΔR^2
Block 1				
Sex	0.055	0.088		
Socioeconomic status	0.039*	0.139		
Age	0.006	0.027	0.022	0.022
Block 2				
Perceived ability	0.030	0.085	0.027	0.005
Block 3				
Grit-S effort	0.020	0.042		
Grit-S interest	−0.017	−0.041		
Hope	0.037	0.104		
Academic self-efficacy	0.128*	0.282	0.137	0.11

*$P < 0.01$.
Grit-S effort, Short Grit Scale Perseverance of Effort; Grit-S interest, Short Grit Scale Consistency of Interests.

How Well Do Psychosocial Perceptions Predict Academic Talent Development

- McCabe, Lubinski, and Benbow (2019)

  - Who Shines Most Among the Brightest?: A 25-Year Longitudinal Study of Elite STEM Graduate Students

    - 714 first- and second-year graduate students attending top-15 STEM programs

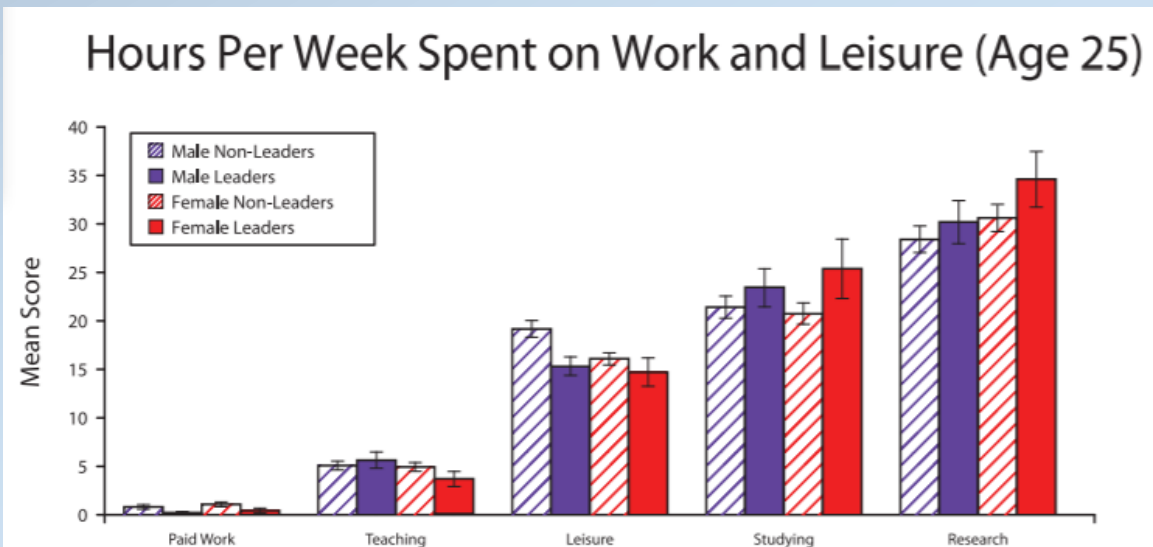   - Wanted to see if psychosocial factors, such as motivation, predicted later leadership status

Figure 6. Mean number of hours per week that participants spent on various activities in their first or second year of graduate school. Error bars are ± 1 standard error of the mean.
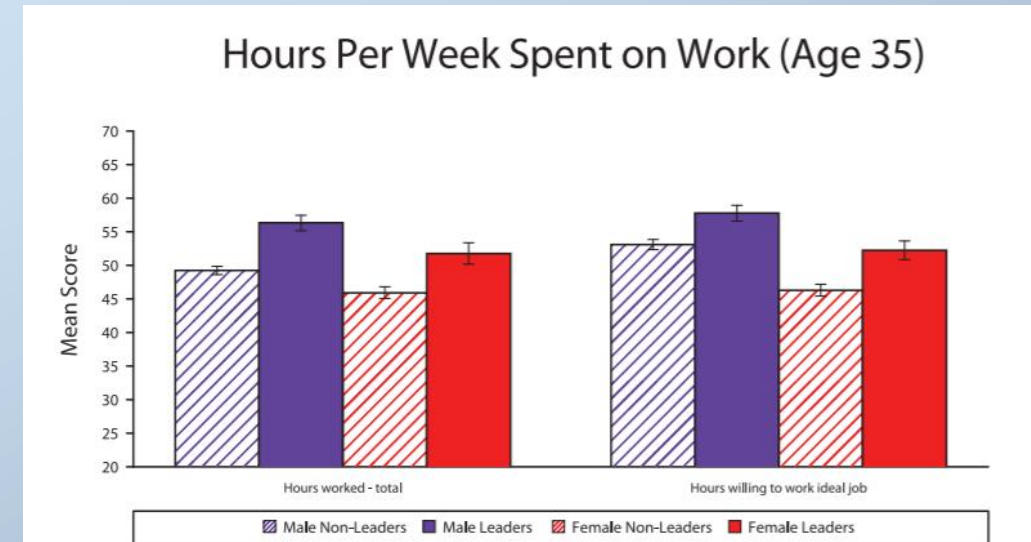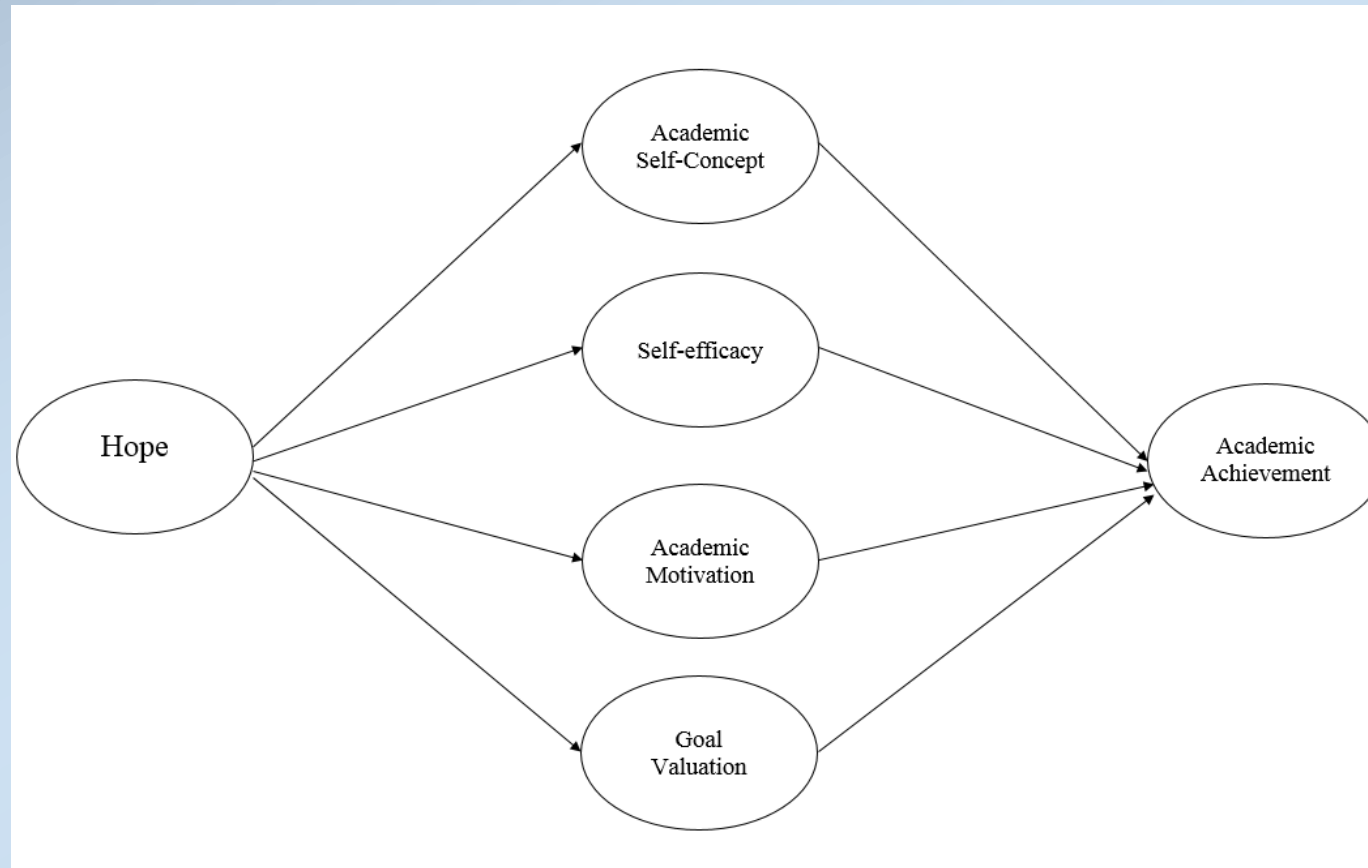

Figure 7. Mean number of hours per week that participants worked in their mid-30s and the mean number of hours per week that participants would be willing to work at their ideal job. Error bars are ± 1 standard error of the mean.

Dixson and Gentzis (under review)

In Short…

- Psychosocial perceptions MATTER for academic talent development
  - They are kind of a big deal

How Psychosocial Perceptions Propel Academic Talent?

- Psychosocial Trajectory
  - Thoughts > actions > outcomes > reinforce thoughts
    - Endless feedback loop that gets stronger as time goes on
  - Yeager and Walton (2011)
    - Social-Psychological Interventions in Education: They're Not Magic
      - Interplay between perception and environment
        - Repeating effects
        - Example: Gifted student

Walton and Cohen (2011)

- One hour lab intervention

- Results
  - Higher GPAs from sophomore through senior year (*GPA increase of* .24)
  - Fewer absences
  - Fewer behavioral referrals
  - 3 years later were happier and healthier

- Nothing changed in real world

- 10 year follow-up

An Example of a Psychosocial Trajectory Within Talent Development

- Two students
  - Student 1
    - High academic self-concept in writing
      - As a result, more likely to
        - Write a lot (they are good at it!)
        - Show writing to others and receive feedback (they want to show off their academic talent)
        - Take more risk with writing (post online / enter competitions / writing on unfamiliar topics)
      - As a result, it is more likely that
        - The student's writing skill improves
        - The student gets recognized for their writing talent
        - The student grows to like writing more
      - As a result, it is likely that the student's academic self-concept in writing increases over time

An Example of a Psychosocial Trajectory Within Talent Development
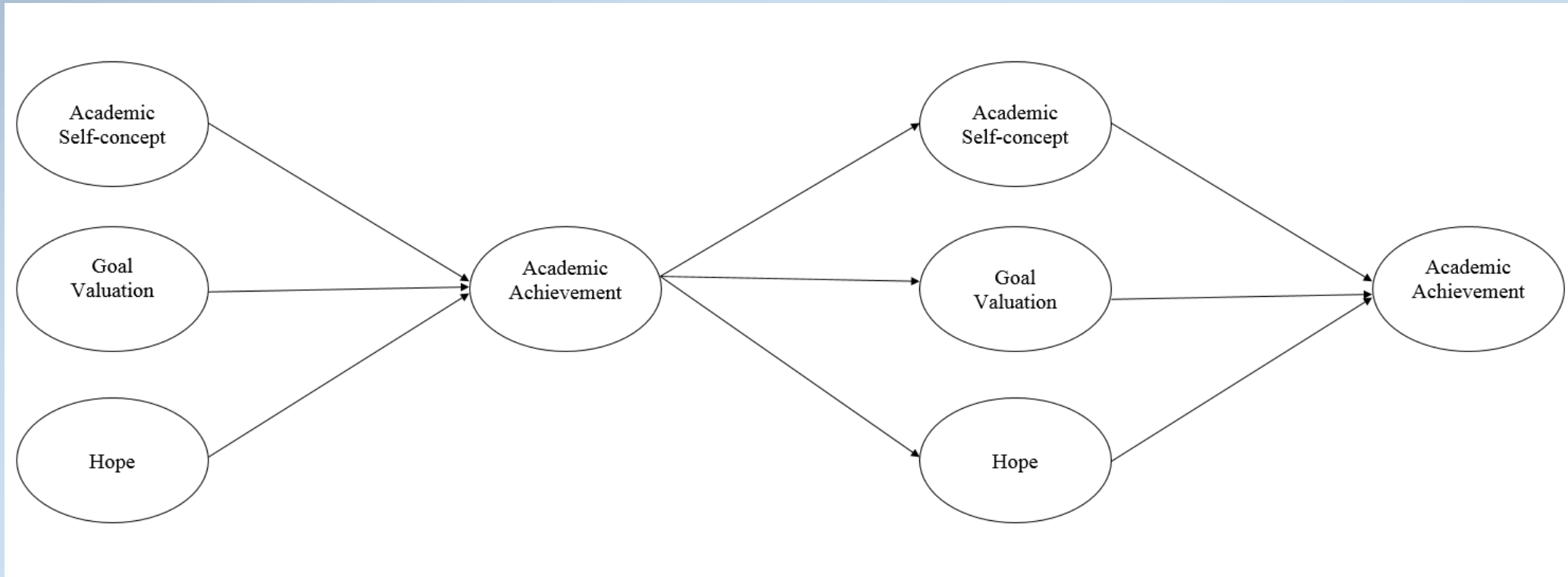
- Two students
  - Student 2
    - Low academic self-concept in writing
      - As a result, more likely to
        - Write a little or not at all (they suck at it!)
        - Withhold their writing from others (they wouldn't want others to know how bad they are)
        - Take little to no risks with their writing (they would fail)
      - As a result, it is more likely that
        - The student's writing ability declines (it is not being developed/exercised)
        - The student doesn't get recognized for their writing potential/talent
        - The student grows to dislike writing (they haven't had pleasant experiences)
      - As a result, it is likely that the student's academic self-concept in writing decreases over time

But What About Curry

- Psychosocial perceptions played a large role in dictating which scenario became a reality for Stephen Curry

  - Low confidence as a basketball player

    - Less likely he tries out for the school team > "Why try, I won't make it!"

    - Less likely he tries for a Division 1 basketball scholarship or shoots 2,000 shots a week > "I'll never be good enough for the NBA"

    - As a result, he doesn't become the Steph Curry we know

  - High motivation to be a great basketball player

    - More likely to take the 2,000 shots a week

    - More likely to seek out opportunities to practice and systematically become a better basketball player

    - As a result, he was more likely to develop his basketball talent and become the Steph Curry we know

      - Shaq and Jordan kids

Dixson, Jansen, Awasthi, and Velasquez (under review)

In Short…

- Psychosocial perceptions propel academic talent development by dictating the talent development trajectory students are on

  - SO WHAT?

How Does One Cultivate Success-Oriented Psychosocial Perceptions

- Build systems in the classroom that encourage certain psychosocial perceptions
  - The system needs to consist of 3 components
    - Incentivizing the targeted psychosocial perceptions (e.g., high writing self-efficacy)
    - Disincentivizing the opposite of the targeted psychosocial perception (e.g., low writing self-efficacy)
    - Consistency across time and people
  - In sum:
    - Doing the "right" behavior results in a guaranteed good thing and avoids a guaranteed bad thing
    - Doing the "bad" behavior results in a guaranteed bad thing and the lack of a guaranteed good thing
    - The anticipated "good" and "bad" things are predictable and reliable.
  - This is not easy and will take a lot of work at the beginning, but there are no shortcuts

How Does One Cultivate Success-Oriented Psychosocial Perceptions

- Steps that MUST be taken and personalized
  - You have to identify
    - the psychosocial perception(s) you are targeting
    - the ways you can build a system around the student to incentivize the targeted psychosocial perception(s)
    - the ways you can build a system of consistency to maintain the system
      - Again, no shortcuts for this
  - Job and token economy

Example

- Improve the math motivation in my high potential mathematics class
  - System
    - An A in my class is from 90-95% and an A+ is from 95.01% to 100%
    - 5% of their grade is to solve super difficult math problems
      - They either have to solve it or spend a certain amount of time attempting it
    - Incentive: A+   Disincentive: No A+
    - This system gets students to challenge themselves, experience perseverance, and experience a success (they will all probably end up cheating, but only after having put in the work).

Example

- Improve writing self-efficacy in my high potential English class
  - System
    - Students that undergo at least 3 rounds of feedback (from different sources) on narrative papers and revise the papers appropriately, can receive as high as an "A+" for each paper
      - Highlighting the idea that with each draft each paper is likely to improve and result in a higher grade
    - Students that undergo less than 3 rounds of feedback are capped at a "B+"
    - Incentive: A+   Disincentive: Cap at B+
    - This system gets students to…
      - challenge themselves to continuously improve their writing
        - Which should show them they are capable of better writing than they previously thought
      - Experience some small wins (they will likely have various sources telling them that they did a good job because most people will be seeing revised writing)
      - They will likely internalize the idea that it takes hard work and revisions to produce high quality writing (thus they won't be judging their first draft against someone's 20th)

Last Thought About Curry

- Some of you might be thinking that Curry didn't intentionally cultivate psychosocial factors this way.

  – I think you would be right

- Chance plays a role in academic talent development

  – Reduce chance and maximize personal variance

In Short…

- Psychosocial perceptions can be cultivated with intentional effort
  - If one is willing to put in the work in developing good personalized systems

What About Psychosocial Factors and Excellent Gaps

- Starts with "The Cycle"
  - Minoritized and disadvantaged students are born with the same advanced potential, as a group, as other groups
    - However
      - Less opportunities / lower quality academic talent development
      - Less personal and academic success
        - Obtain prestigious positions in society
      - Less influence in society
        - Further perpetuating inequity via self-interests

Poor environment ➔ Talent not being developed ➔ Less success in society ➔ Less influence ➔ Increasing Inequity

- Don't Believe Me?

	Elite School
TIME 100 Artists/Entertainers	0.190
TIME 100 Leaders/Revolutionaries	0.200
TIME 100 Heroes/Icons	0.300
TIME 100 Overall	0.317
TIME 100 Builders/Titans	0.409
TIME 100 Scientists/Thinkers	0.476
House members	0.206
Wealth-X President	0.277
Wealth-X CEOs	0.309
Wealth-X 30 millionaires	0.338
Wealth-X Founders	0.338
Wealth-X Chairman	0.348
Wealth-X self-made 30 millionaires	0.359
Federal judges	0.409
Fortune 500 CEOs	0.410
Senators	0.410
Forbes self-made billionaires	0.426
Wealth-X billionaires	0.434
Wealth-X self-made billionaires	0.437
New York Times Editors/Writers	0.439
Forbes billionaires	0.448
Wall Street Journal Editors/Writers	0.498
Davos overall	0.546
Davos media	0.556
Forbes Powerful women	0.559
Davos CEOs	0.599
The New Republic	0.642
Davos government & policy	0.742
Forbes Powerful men	0.852
Davos academia	0.901

=

The Grand Plan

- Functional Cure
  - Effects of poverty/racism =
    - Environmental constricts of poverty/racism
    - Psychosocial profile that environment of poverty/racism engenders
  - Change psychosocial profile, change the cycle

Recap and Conclusion

- Psychosocial perceptions matter for talent development

- We should pay more attention to them within all domains

- Psychosocial perceptions develop academic talent via changing one's psychosocial trajectory talent development

- Certain psychosocial perceptions are more influential than others

- Putting into place effortless systems that properly incentivize and disincentivize adaptive and maladaptive psychosocial perceptions is a way to intentionally cultivate psychosocial perceptions that propel academic talent development

- Leveraging psychosocial perceptions has potential to reduce excellence gaps

Recap and Conclusion

- "Success isn't owned. It's leased and rent is due every day." - J. J. Watt

- "Talent you have naturally. Skill is only developed by hours and hours and hours of beating on your craft." – Will Smith

Thank You

- Hopefully, you've enjoyed the talk!

- Questions?

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