Social-Cognitive Career Theory (SCCT) Variables as Mediators for the Relationship between Deep Learning and Goal Persistence in African American Students with Disabilities

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Dr. Elizabeth Cardoso, Hunter College of New York, CUNY

Acknowledgement

A Tribute to Dr. Alo Dutta

1964 - 2018

Principal Investigator
October 1, 2015 – June 29, 2018

Her contributions to the field of Rehabilitation:

- Outstanding researcher, a prolific grant writer, and a visionary leader in VR
- Principal Investigator/Project Director of 11 training, research, capacity building, and Technical Assistance Center grants
- Co-PI/Associate Project Director of 9 other grants
- Jointly Secured funding of $31 million
- Guest Reviewer of 10 journals
- Published 50 refereed journal articles
- 80 presentations
- Recipient of 15 awards and recognitions

Presenters

Dr. Madan Kundu
Chair and Professor, Department of Rehabilitation and Disability Studies
Project Director, CLAIM
Southern University-Baton Rouge
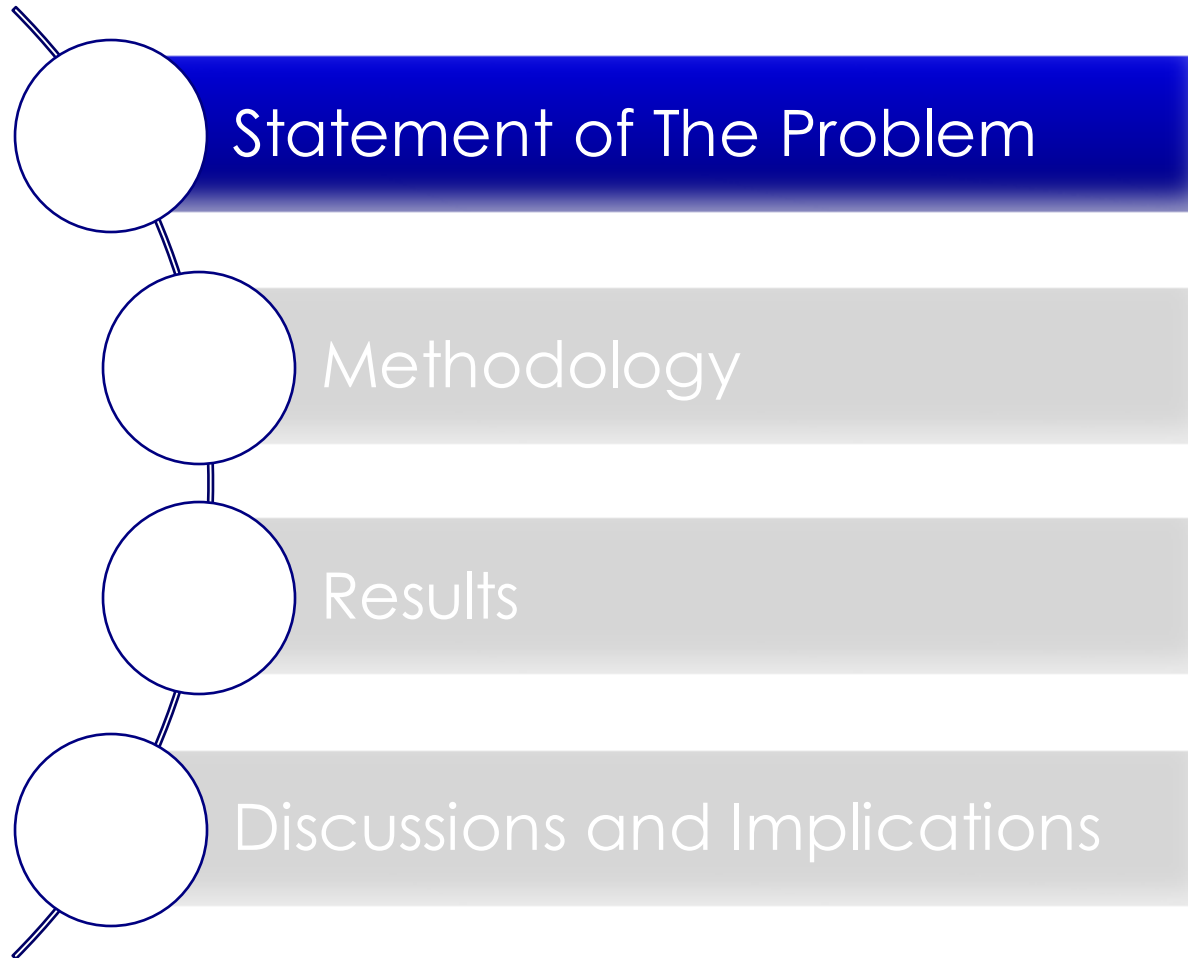
Dr. Elizabeth D. Cardoso
Chair and Professor, Educational Foundations & Counseling Program
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Assistant Professor
Department of Rehabilitation Counseling
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Outline

Statement of The Problem

Methodology

Results

Discussions and Implications

Unemployment / poverty

Unemployment → Poverty/ Income inequality

- Depression
- Anxiety
- Domestic violence
- Drug use
- Social relationship problems

- Poorer health
- A higher risk of illness and injury

Employment is key issue

Employment-to-Population Ratio

- People without disabilities → 65.3%
- People with disabilities → **17.9 %**

Poverty Rate

- People without disabilities → 13.8 %
- People with disabilities → **21.2 %**

The high prevalence of mental illness and secondary health problems due to unemployment and poverty
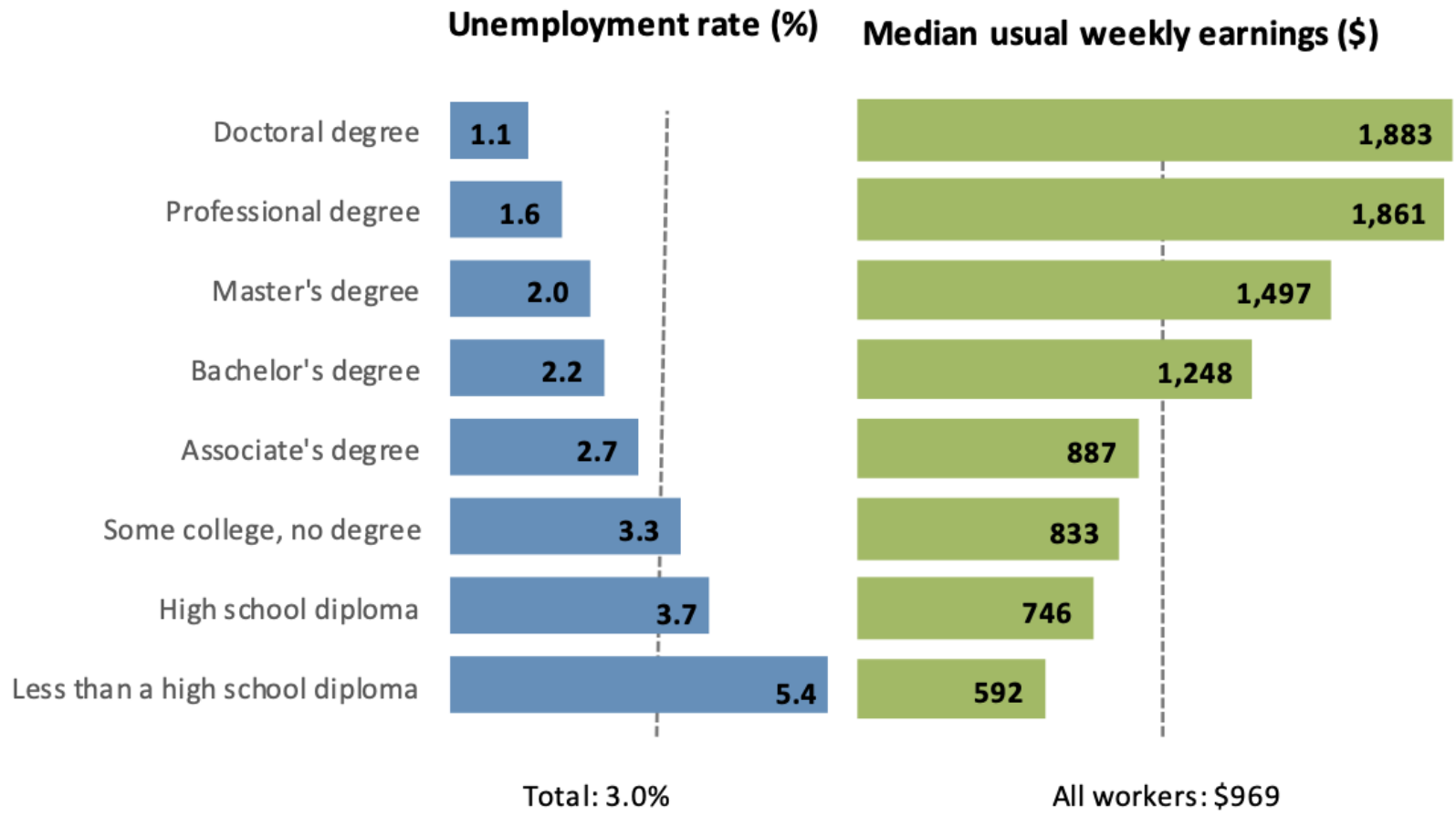
Employment

(Compton et al., 2014; Ditchman et al., 2013; Kraus, 2017; Muller et al, 2017; U.S. Department of Labor, 2018)

Lifetime Earnings Soar with Education

- **High School Diploma:** High school graduates can expect, on average, to earn $1.2 million in lifetime income.

- **Bachelor's Degree:** Those with a Bachelor 's degree can expect to earn $2.1 million over a lifetime.
The average value of a 4-year degree increases earnings/income by $900, 000, almost a million dollars.

- **Master's Degree:** People with a master's degree earn 2.5 million.
  A Master's degree is worth an average of 1.3 million dollars more than a high school diploma. A Master's is worth $400,000 more than a Bachelor's degree in additional lifetime income.

- **Doctoral Degree:** A person with a Doctoral degree earns an average of $3.4 million during their working life.

  People with doctoral degrees earn $2.2 million more that a high school graduate, $1.3 million more than people with Bachelor's degrees, and $900,000 more than a person with a Master's degree.

- **Professional Degrees:** Those with MD or JD professional degrees (medicine, law) do the best with an average of $4.4 million in lifetime earnings.

  - **People who have earned a professional degree can expect to earn $3.2 million more than a person with only a high school diploma, $2.3 million more than a person with a Bachelor's degree, and $1.9 million more that the average Master's degree holder.**

- http://www.dba-oracle.com/t_increased_earnings_income_bachelors_masters_doctorate.htm

Unemployment rates and earnings by educational attainment, 2019

Unemployment rate (%)   **Median usual weekly earnings ($)**

	Unemployment rate (%)	Median usual weekly earnings ($)
Doctoral degree	1.1	1,883
Professional degree	1.6	1,861
Master's degree	2.0	1,497
Bachelor's degree	2.2	1,248
Associate's degree	2.7	887
Some college, no degree	3.3	833
High school diploma	3.7	746
Less than a high school diploma	5.4	592

Total: 3.0%   All workers: $969

Note: Data are for persons age 25 and over. Earnings are for full-time wage and salary workers.
Source: U.S. Bureau of Labor Statistics, Current Population Survey.

Figure 4.
Synthetic Work-Life Earnings for Gender/Race-Ethnicity Groups by Education Level
(Full-time, year-round workers)

Median SWE in millions of dollars
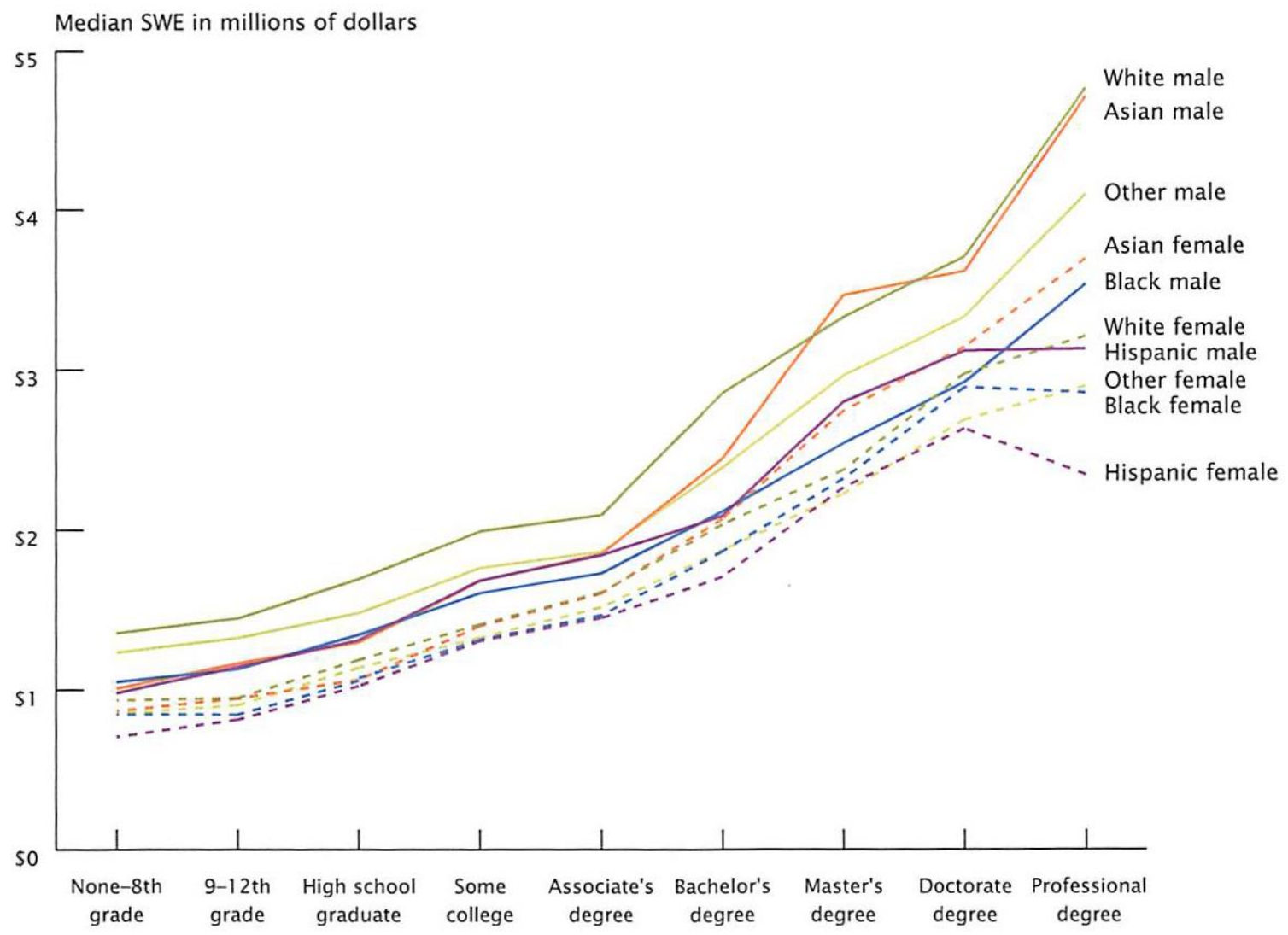
Source: U.S. Census Bureau, American Community Survey, 2006–2008.

Issues related to Students with disability from racial and ethnic minority backgrounds

Customized training/apprenticeship
Technical education
College education

Education level and the unemployment rate
- People with a bachelor's degree → 2.5%
- People who graduated high school w/o B.A. → 5.3%
- People who dropout high school → 7.7%

High school graduation rate
- All high school students for the 2014–2015 school year → 83.2%
- Hispanic students → 77.8%
- Black students → 74.6%
- Students with disabilities → 64.6%

(Danilova, 2017; Julian & Kominski, 2011 O'Neill et al., 2014; Petrilli, 2016; U.S. Bureau of Statistics, 2017)

Deep Approach to Learning

The deep approach to learning

Students who are engaging and learning the material motivated by deep interest and a sincere desire to truly learn are more successful in college and in life.

Intrinsic motivating factors Deep learning	>	Extrinsic motivation factors Surface learning

(Bain, 2012; Biggs, 1987; Entwistle, 2010; Haggis, 2003; Marton & Säljö, 1976; Stanger-Hall, 2012)

Surface Learning Approach vs Deep Learning Approach

"Surface" learning
(a) Quantitative
(b) Memorizing
(c) Acquisition conceptions

Poor learning outcomes

"Deep" approach
(d) Abstraction
(e) Understanding reality
(f) Development as a person

- Good college completion
- Good employment
- Good lifelong learning outcomes

(Biggs & Tang, 2007; Floyd, Harrington, & Santiago, 2009; Haggis, 2003; Marton & Säljö, 1997)

Social-Cognitive Career Theory

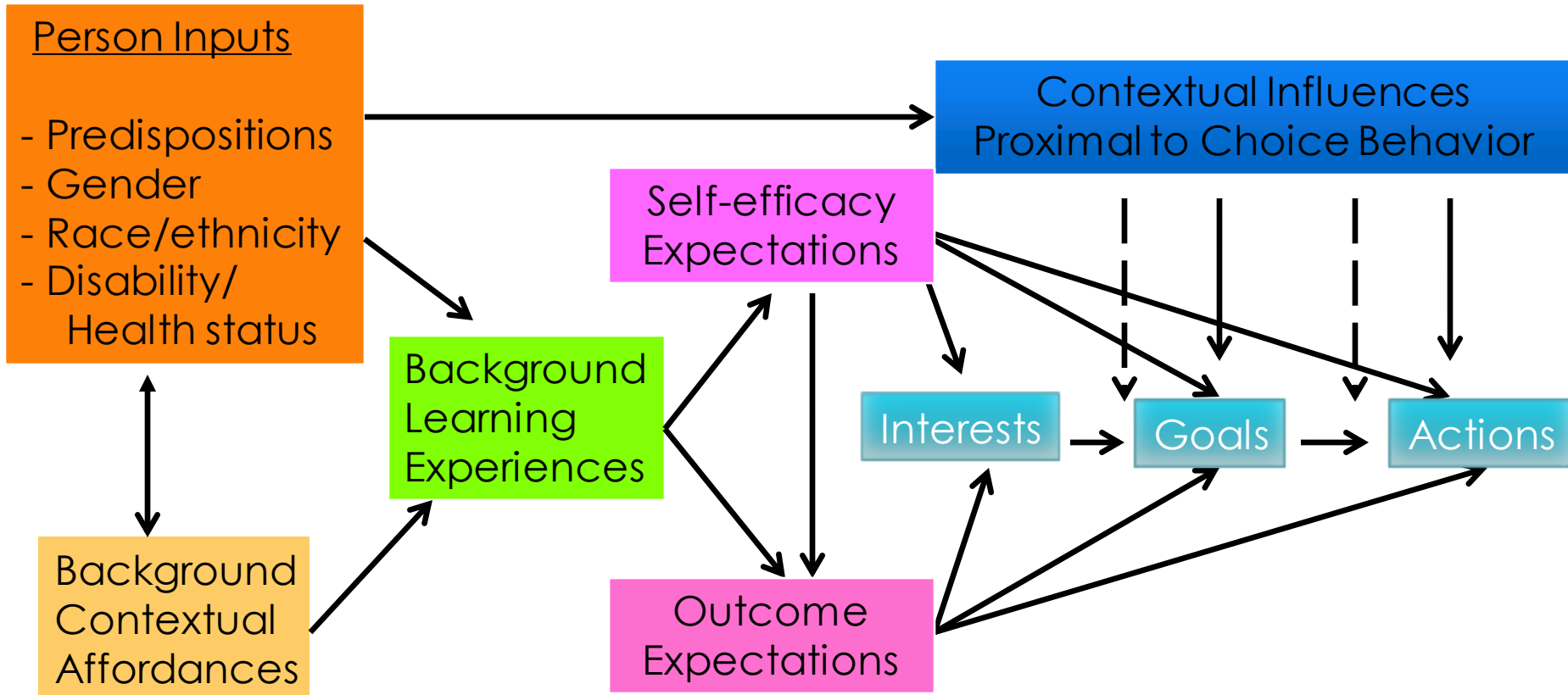An extension of Albert Bandura's (1986) general Social Cognitive Theory

The Social-Cognitive Career Theory (SCCT)

Explaining how people…
- Form vocational interests
- Set career goals
- Develop self-efficacy and intention to persist in the educational and work environments

(Betz, 2007; Lent, Brown, & Hackett, 1994, 2000; Lent, 2005; Lent et al., 2008)

Social-Cognitive Career Theory

Person Inputs

- Predispositions
- Gender
- Race/ethnicity
- Disability/
  Health status

Background Contextual Affordances

Background Learning Experiences

Self-efficacy Expectations

Outcome Expectations

Contextual Influences Proximal to Choice Behavior

Interests → Goals → Actions

(Betz, 2007; Byars-Winston, Estrada, Howard, Davis, & Zalapa, 2011; Cardoso et al., 2013; Lent, Brown, & Hackett, 1994, 2000; Lent et al., 2000, 2005, 2008; Maki & Tarvydas, 2011, Sung et al, 2017)

Current VR issue

The Workforce Innovation and Opportunity Act (2014)

State VR agencies to reserve and expend **at least 15%** of its State allotment for pre-employment transition services to students with disabilities

In order to help transition-age youth with disabilities make **a smooth transition to postsecondary education,** an appreciation for the deep approach to learning and to successfully persist in college is necessary.

Purpose of the Study

To identify specific factors that influence the development of the deep approach to learning and goal persistence by evaluating three key SCCT constructs (*academic barriers coping self-efficacy, academic milestone self-efficacy, and academic outcome expectancy*) as serial multiple mediators for the relationship between deep learning and goal persistence.

Research questions

- What is the relationship between deep learning and goal persistence?

- Can the relationship between deep learning and goal persistence be mediated by academic barriers coping self-efficacy, academic milestone self-efficacy, and academic outcome expectancy?

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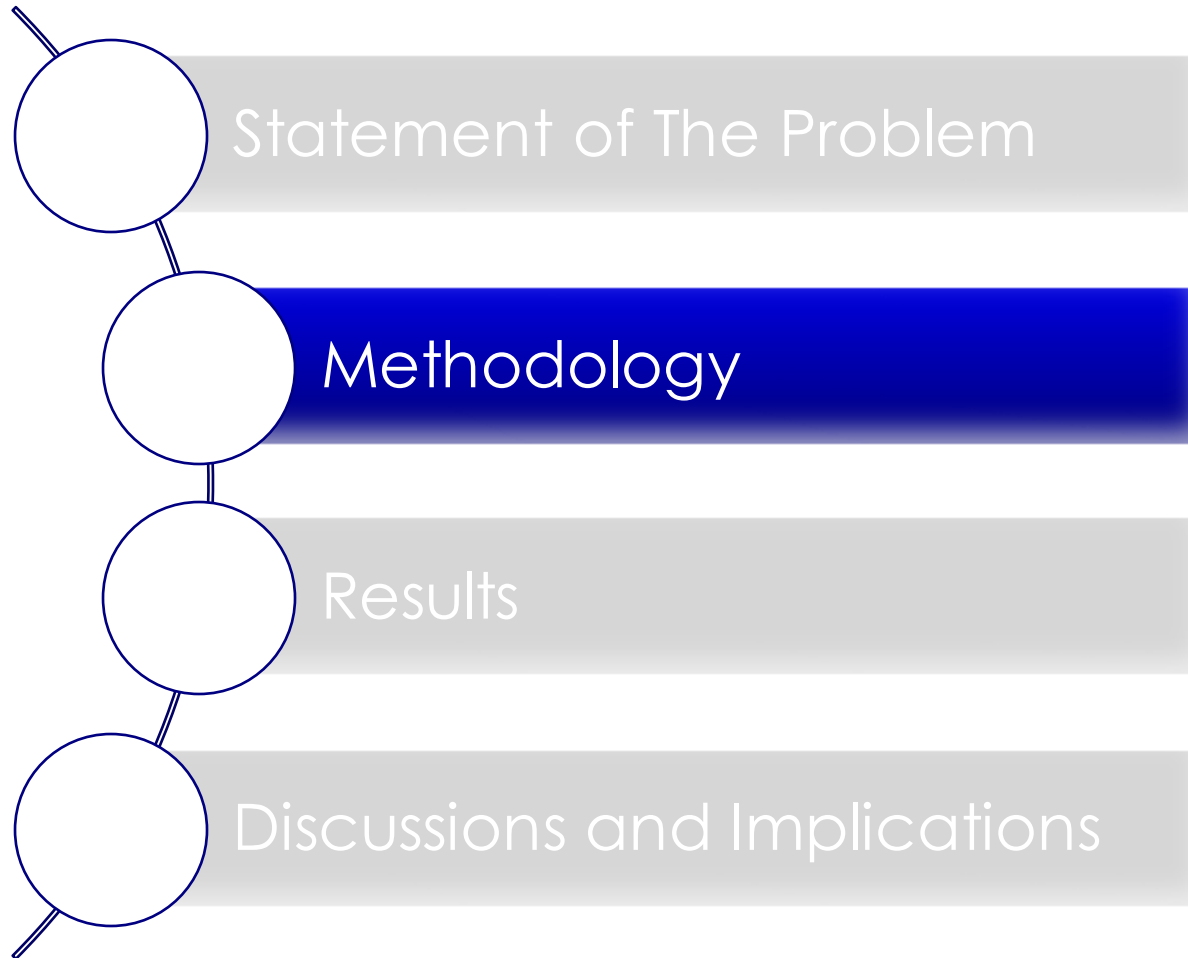
Participants

Participants consisted of 62 African American students with disabilities enrolling in a historically black university.

A mean Age	22.2 (SD=6.6)
Gender	
Male	22 (35.5%)
Female	40 (64.5%)
Grade	
Freshmen	53 (85.5%)
Sophomores	8 (12.9%)
Junior	1 (1.6%)

Academic Majors	
STEMM	32 (53.2%)
Business	12 (19.4%)
Social Services	6 (9.7%)
Education	5 (8.1%)
Criminal Justice	4 (6.5%)
English	2 (3.2%)

Deep approach to learning

The *Revised Study Process Questionnaire* (only the Deep Factor Subscale)
Assessing two factors *deep strategy* and *deep motive*
10 items; 1-5 rating range; Cronbach's α =.83

Self-efficacy

The 4-item *Academic Milestone Self-Efficacy Scale*
The 7-item *Academic Barrier Coping Self-Efficacy Scale*
Assessing the confidence in their ability to complete academic requirements in their declared majors (Milestone); and their confidence in their ability to cope with a variety of barriers that university students might experience (Barrier coping)
11 items; 0-9 rating range; Cronbach's α =.90 (milestone), .84 (coping)

Outcome expectancy

The *Academic Outcome Expectations Scale*
Assessing students' expectation that their college degree would lead to positive outcomes
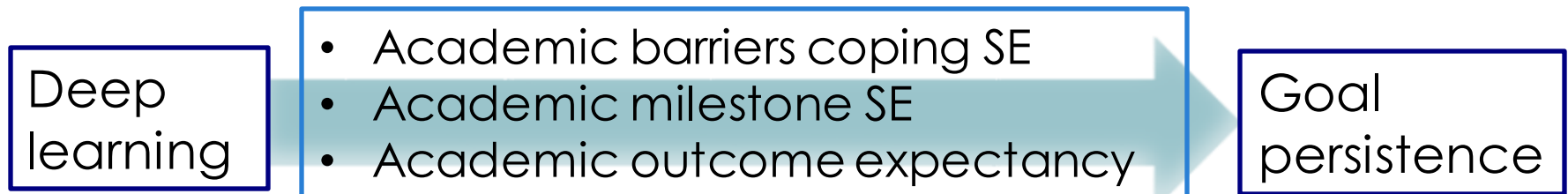6 items; 1-5 rating range; Cronbach's α = .92

Goal persistence

The *Goal Persistence Scale*
Assessing students' agreement of persistence of their academic plans
8 items; 1-5 rating range; Cronbach's α = .74

Data Analysis

The SPSS version 24.0

The SPSS PROCESS v2.16 macro for SPSS (Hayes, 2012, 2013)

- A serial multiple mediation analyses (ordinary least squares [OLS] regression)

Deep learning

- Academic barriers coping SE
- Academic milestone SE
- Academic outcome expectancy

Goal persistence

(Cohen, 1988; Faul, Erdfelder, Buchner, & Lang, 2009)

Data Analysis

A priori power analysis was conducted using the G*POWER software.

Power at .80, an alpha level of .05, and 4 predictors.

The power analysis yielded **<u>a sample size of 53</u>** for a medium to large effect size ($f^2 = .25$).

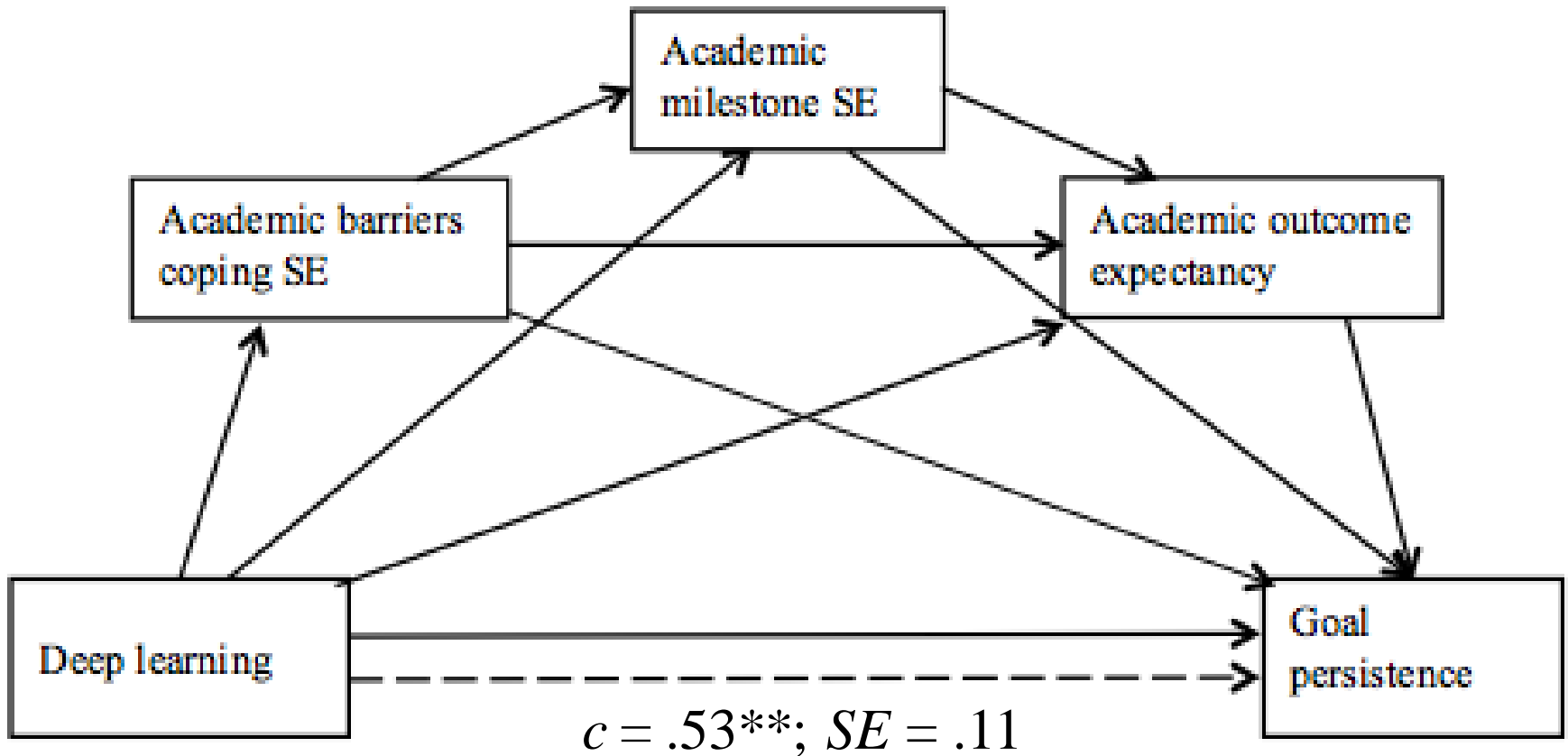(Cohen, 1988; Faul, Erdfelder, Buchner, & Lang, 2007)

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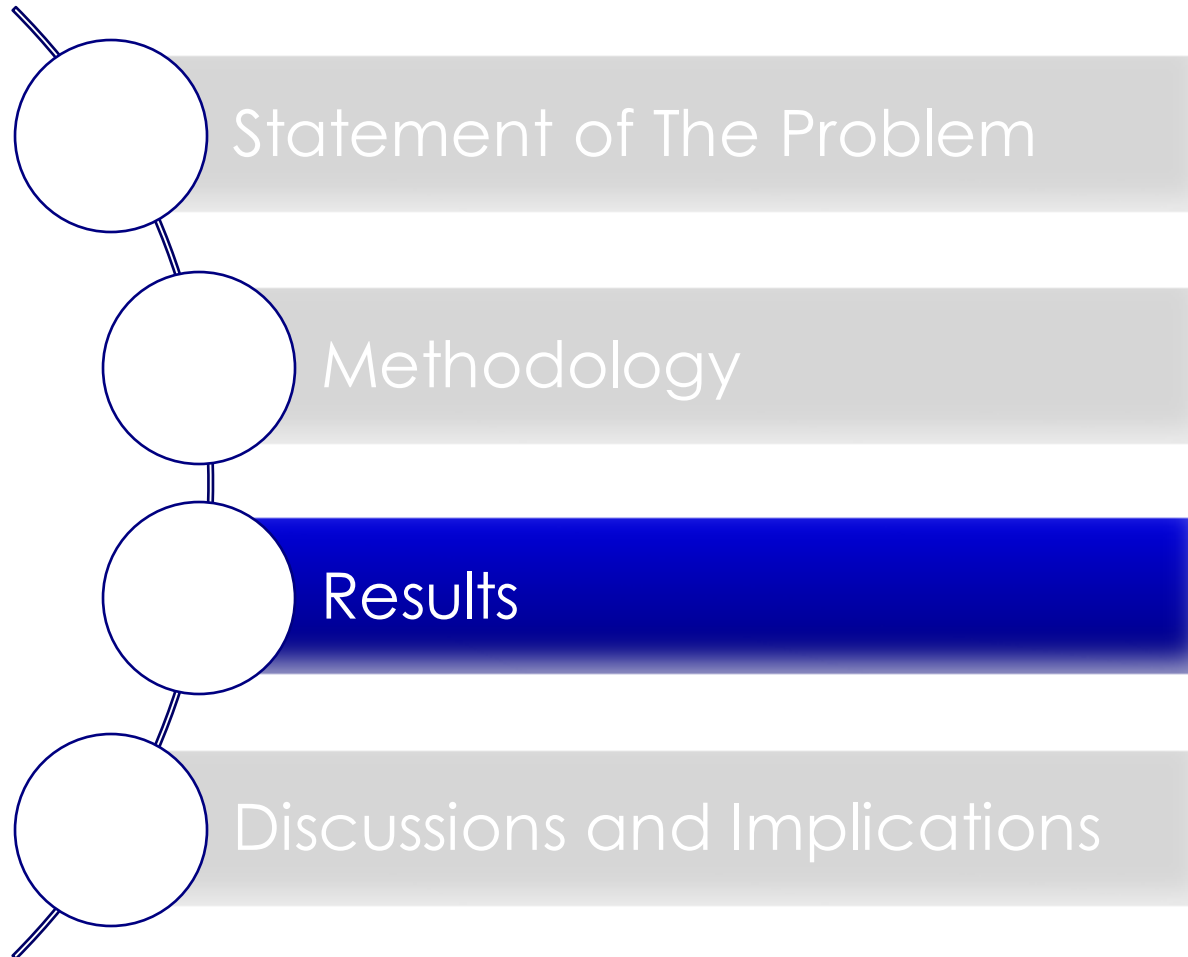
Preliminary Analysis

	1	2	3	4	5
1. Deep learning	-				
2. Goal Persistence	.53**	-			
3. Academic Barriers Coping Self-Efficacy	.31*	.32*	-		
4. Academic Milestone Self-Efficacy	.39**	.52**	.64**	-	
5. Academic Outcome Expectancy	.37**	.44**	.43**	.41**	-
Mean	6.34	3.83	6.42	6.30	4.30

*$p \leq .05$, **$p < .01$

Serial Multiple Mediation Analysis Total Effect

$c = .53**; SE = .11$

$R^2 = .28 (f^2 = .39)$

Serial Multiple Mediation Analysis Direct effect
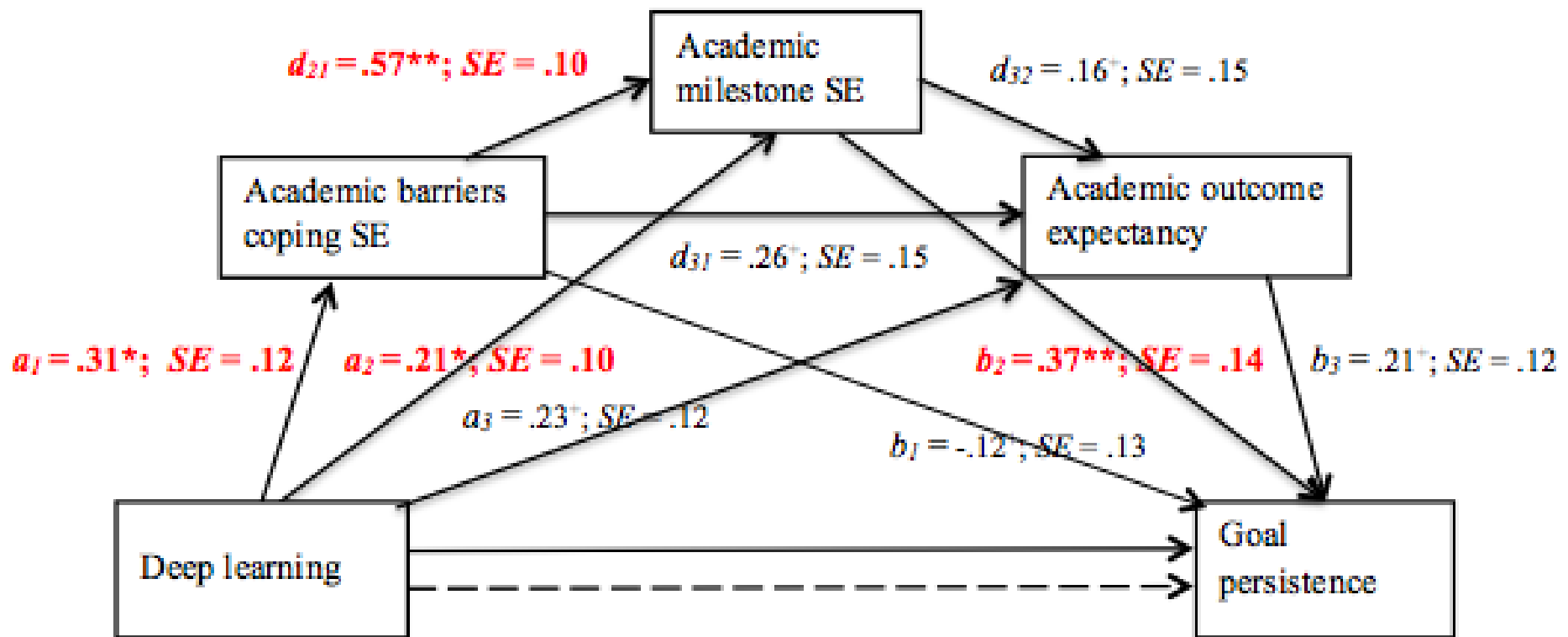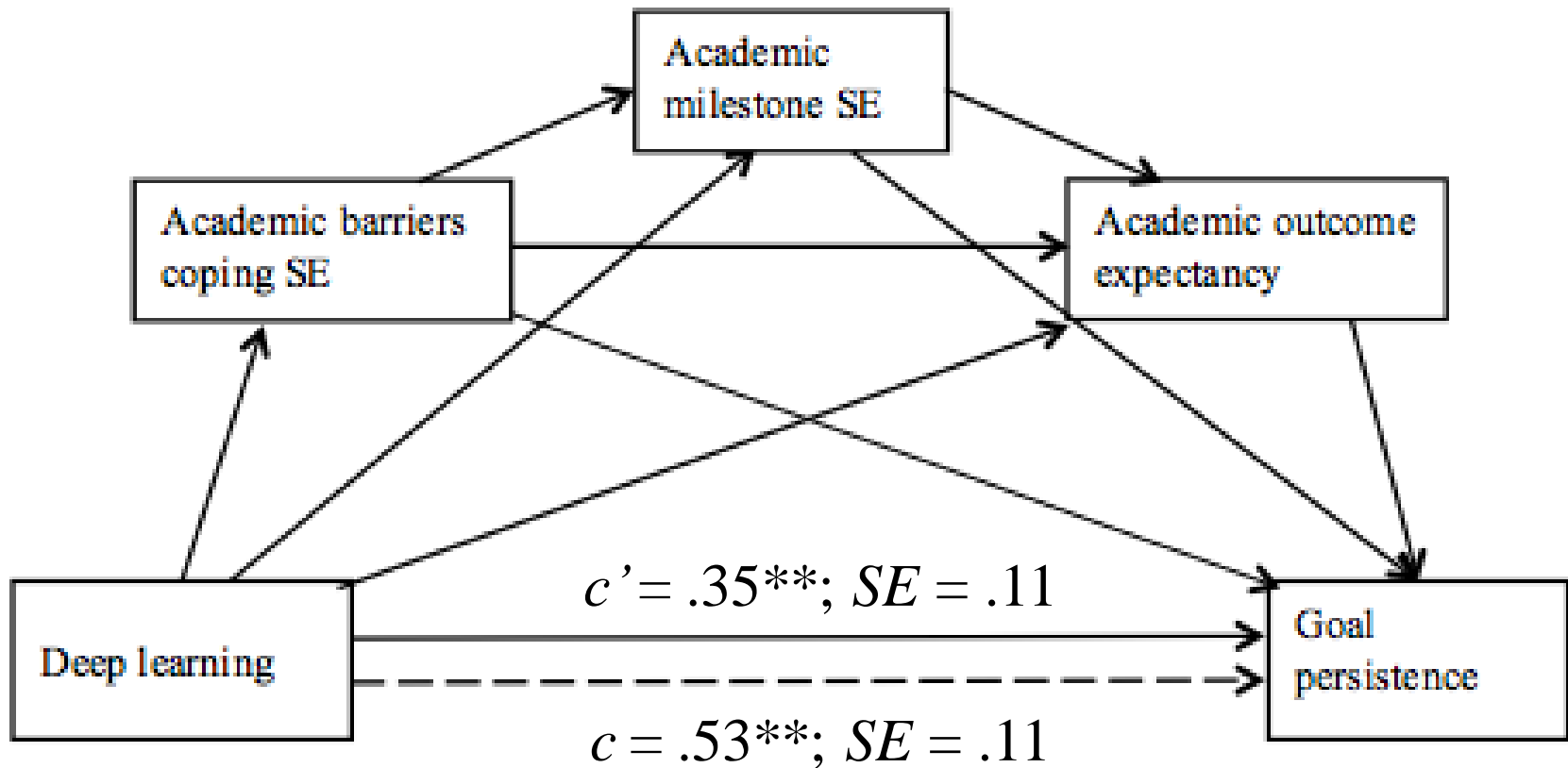
$d_{21} = .57^{**}; SE = .10$

Academic milestone SE

$d_{32} = .16^{+}; SE = .15$

Academic barriers coping SE

$d_{31} = .26^{+}; SE = .15$

Academic outcome expectancy

$a_1 = .31^{*}; SE = .12$ $a_2 = .21^{*}; SE = .10$ $b_2 = .37^{**}; SE = .14$ $b_3 = .21^{+}; SE = .12$

$a_3 = .23^{+}; SE = .12$

$b_1 = -.12^{+}; SE = .13$

Deep learning

Goal persistence

Serial Multiple Mediation Analysis Total Effect

Academic milestone SE

Academic barriers coping SE

Academic outcome expectancy

Deep learning

Goal persistence

$c' = .35**; SE = .11$

$c = .53**; SE = .11$

Serial Multiple Mediation Analysis Indirect effect
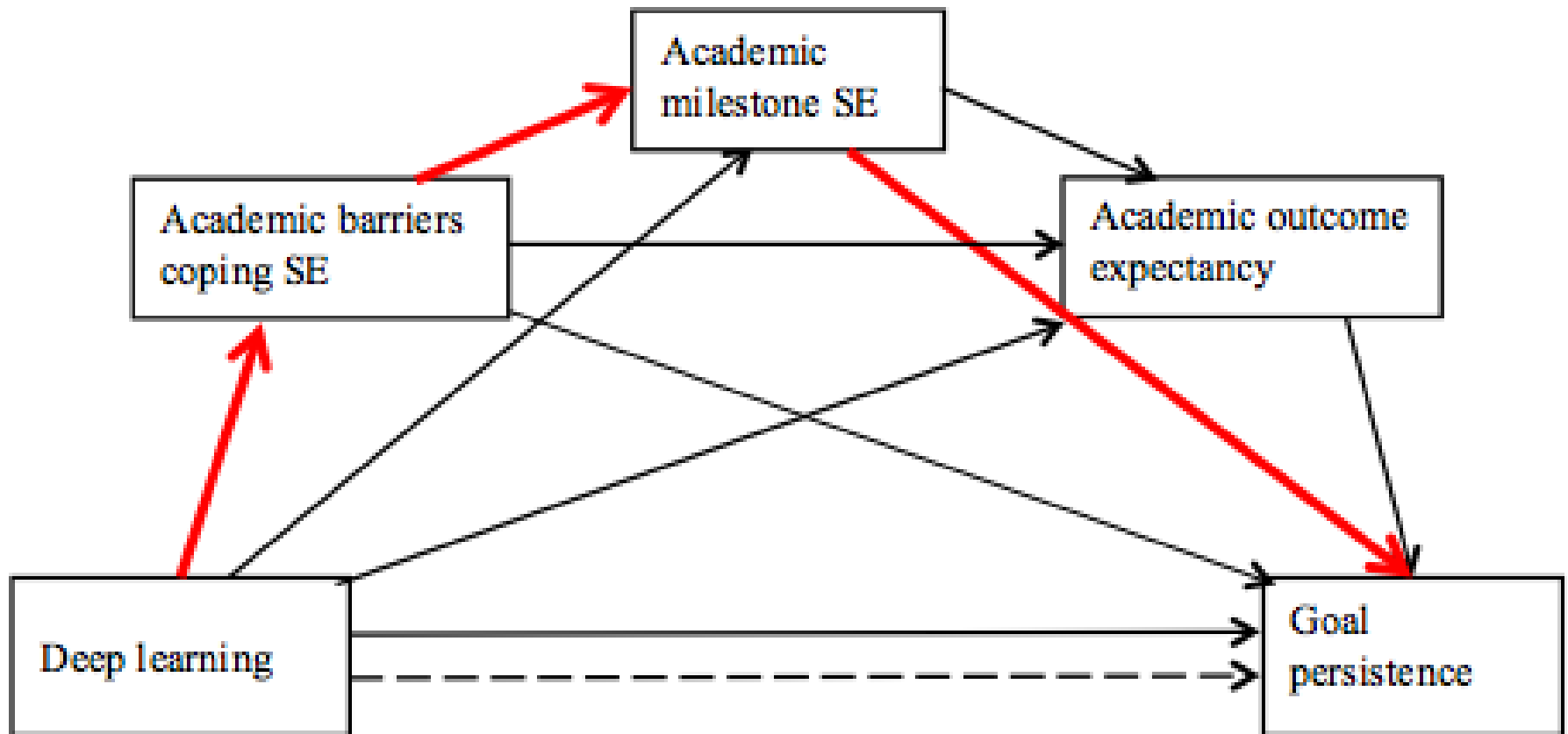
Serial Multiple Mediation Analysis Indirect effect
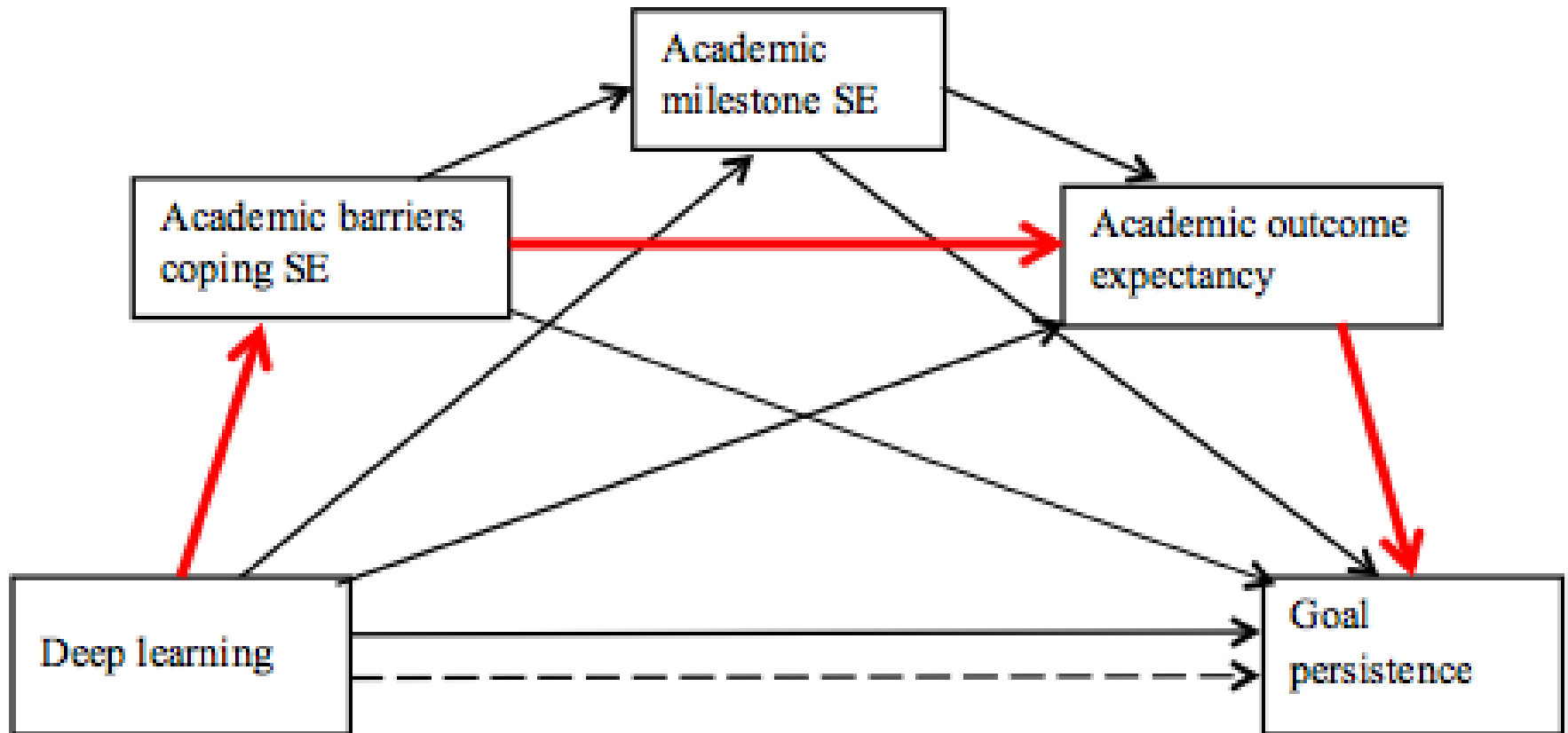
Serial Multiple Mediation Analysis Indirect effect

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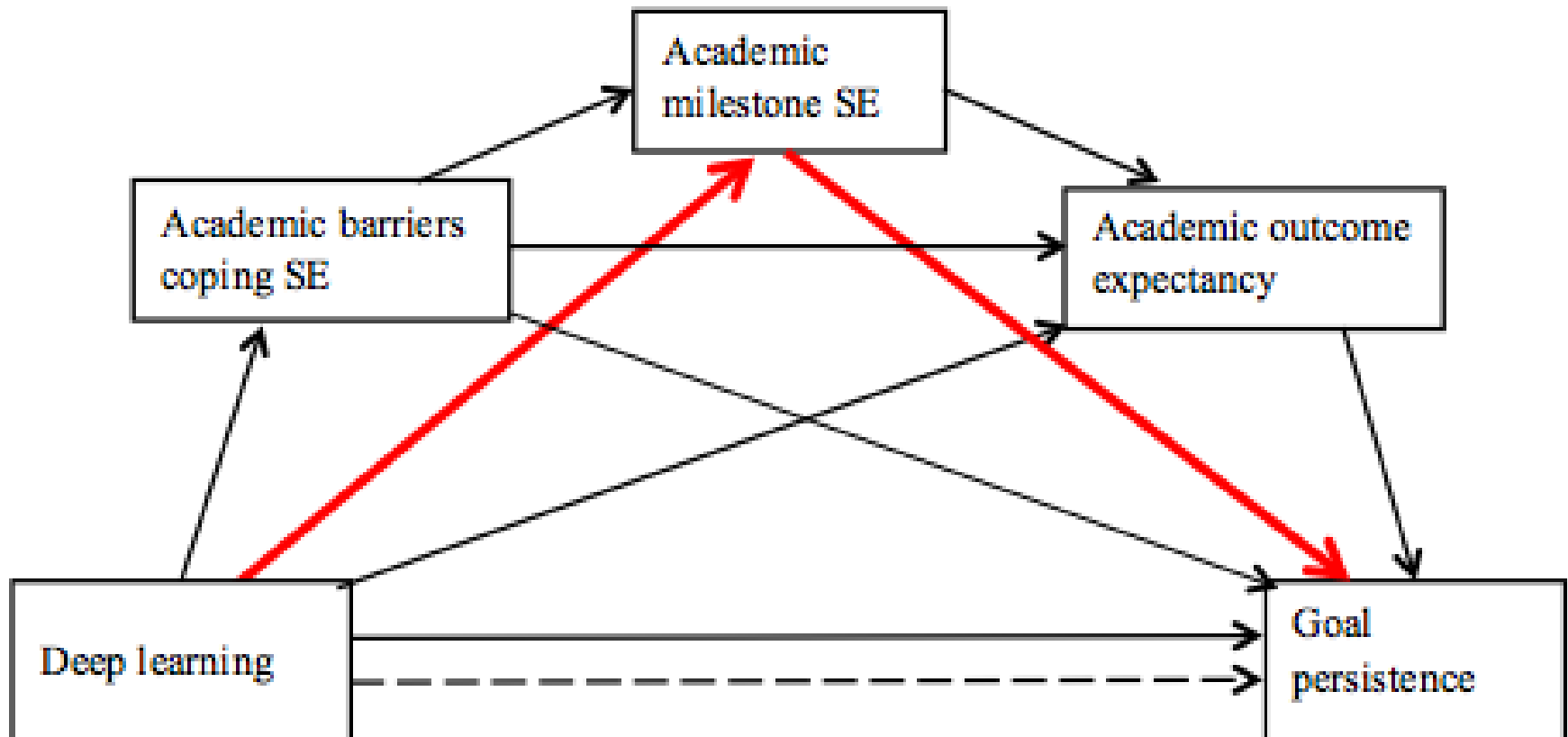
Statement of The Problem
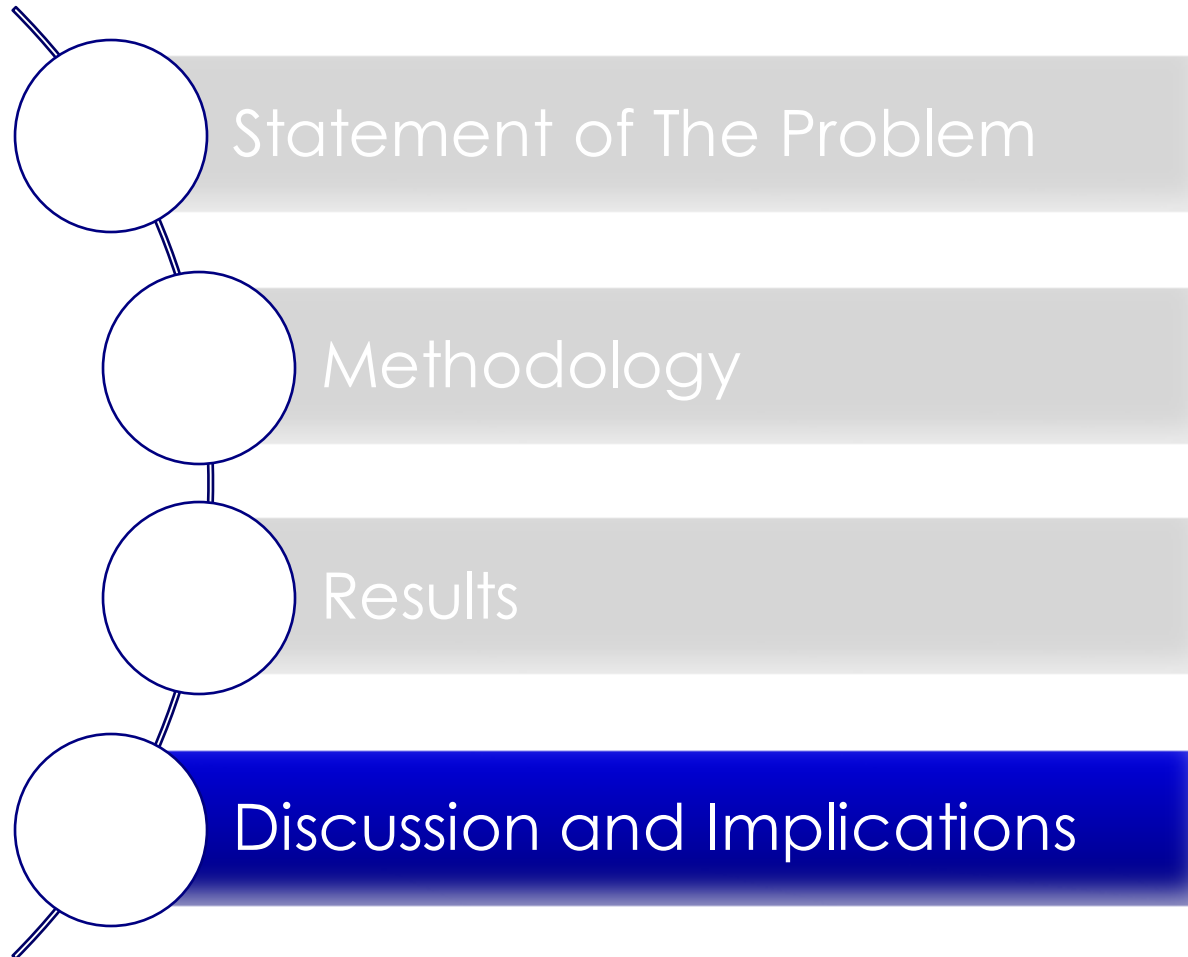
Methodology

Results

Discussion and Implications

Transition to postsecondary education

Students with disabilities
 = the most recently marginalized group to move toward equal opportunity in higher education

Students with disabilities from racial and ethnic minority background

- Make a smooth transition to postsecondary education
- Persist in completing their educational programs
- Successfully finding a job with good pay and benefits

(O'Neill et al., 2014; Wolanin & Steele, 2004)

The deep learning approaches

The deep learning approaches

The importance of examining new facts and ideas critically, integrating them into existing thinking about the topic, and identifying multiple associations between ideas.
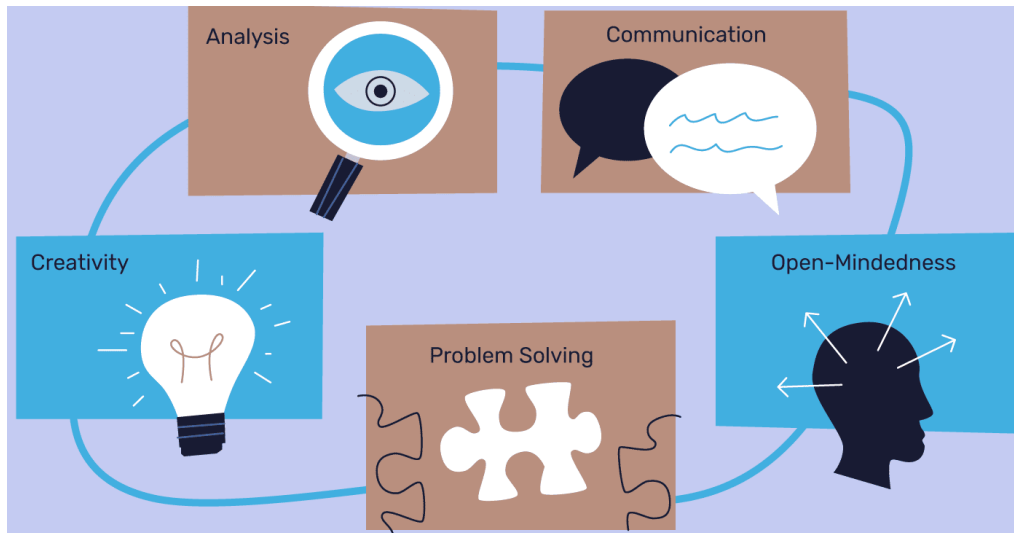
(Biggs, 1999; Entwistle, 1988; Houghton, 2004)

The surface learning approaches

The Surface learning approaches

Accepting new facts and ideas uncritically and treating these ideas as unconnected items

(Houghton, 2004; Biggs, 1999; Entwistle, 1988)

Deep learning →Goal persistence

Deep learning approach

SCCT variables
- Academic barriers coping self-efficacy
- Academic milestone self-efficacy
- Academic outcome expectancy

Students' goal persistence

GOAL

Supporting Deep learning approach

Helping students to adopt the deep approach to learning

- Completion of postsecondary education

- Finding a good paying job with benefits

- Becoming a life-long learner in their career.

Special educators, secondary transition specialists, accommodation specialists, and rehabilitation counselors can help students by providing support services related to deep learning

Supporting Deep learning approach

Educational support

Encouraging students to be:
(a) intrinsically curious about topics in their education
(b) determined to do well and mentally engaging when doing academic work
(c) interested in having the appropriate foundational knowledge
(d) able to pursue diverse interests through good time management

(Houghton, 2004)

Rehabilitation counselors should create opportunity for students to have positive experiences with education in order to increase students' confidence in their ability to understand and succeed.

Supporting Deep learning approach

Positive experiences

- hands-on activities in the classroom or community

- interviewing experts in a topic area to foster curiosity and mental engagement

- extending learning outside of the classroom to develop a stronger knowledge base.

Supporting Self-efficacy

- Academic barriers coping self-efficacy
- Academic milestone self-efficacy
- Academic outcome expectancy

Goal persistence

Can be increased by counseling and academic support interventions!

Supporting Self-efficacy

- Early interventions

  - increase teacher and parent expectations

  - develop strong academic skills in minority studens with disabilities

  - promote interest in attending college at the primary and secondary school levels

- Social support services

  - Helping students develop empathetic and social self-efficacy and advocacy skills.

  - Educating academic staff and faculty about diversity and disability inclusion issues.

Supporting Outcome expectancy

| Outcome expectancy | Career interest | Goal persistence |

- Summer learning institutes
- Field trips
- Motivational speakers/role models
- Internships

(Cardoso et al., 2013)

Limitations

a) Generalizability and applicability

b) Self-report measures
   → bias and social desirability

c) Cross-sectional convenience sampling methods
   → no statements about causality and directionality can be made

d) Need of qualitative designs

Conclusion

- Strong empirical evidence that supports:
  - Apprenticeship, vocational/technical schools and college education is one of the best career pathways to the middle class for people with disabilities.

Conclusion

Poverty, race/ethnicity, and disability intersect to negatively effect representation of people with disabilities in higher education.

Minority students with disabilities are the most recently marginalized group to move toward equal opportunity in higher education.

The deep learning-SCCT frameworks provide invaluable information and practical guidelines for designing best practice educational and career development services.

→ Increase goal persistence, career development, and job placement.

Thank you for participating in this webinar.

If you have any questions, please feel free to contact us:

- **Dr. Madan Kundu- Kundusubr@aol.com**

- **Dr. Kanako Iwanaga- iwanagak@vcu.edu**

- **Dr. Elizabeth Cardoso- ecardoso@hunter.cuny.edu**

Reference

Dutta, A., Kundu, M., Chan, F., Iwanaga, K., Bezyak, J., Cardoso, E., & Washington, R. (2019). Social-cognitive career theory variables as mediators for the relationship between deep learning and goal persistence in African American College Students with disabilities. *Journal of Vocational Rehabilitation*, *50*(2), 183-192.

Educate, Empower, and Employ

Project E3 was the Vocational Rehabilitation Technical Assistance Center for Targeted Communities. We worked with state vocational rehabilitation agencies and their partners across the United States to help people with disabilities from underserved communities achieve their independent living and employment goals.