

Role of Family in the Learning and Well-being of Children and
Adolescents in the Greater Bay Area , April 23, 2022

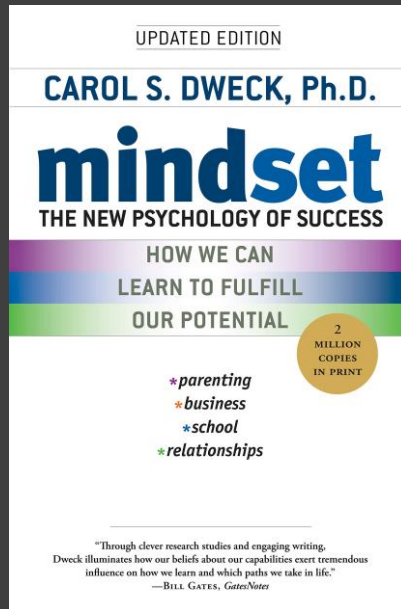
Mindset of Socioeconomic Status (SES) and Academic Achievement in Chinese Adolescents



澳門大學
UNIVERSIDADE DE MACAU
UNIVERSITY OF MACAU

Peilian Chi, 池培蓮, Ph.D.
Department of Psychology
University of Macau





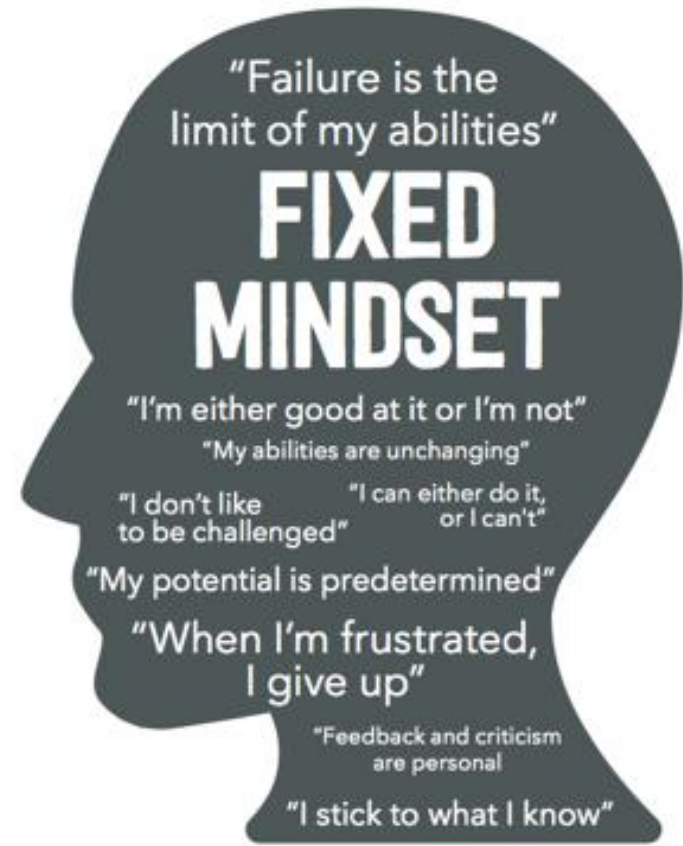
THE
BREGMAN
LEADERSHIP
Podcast

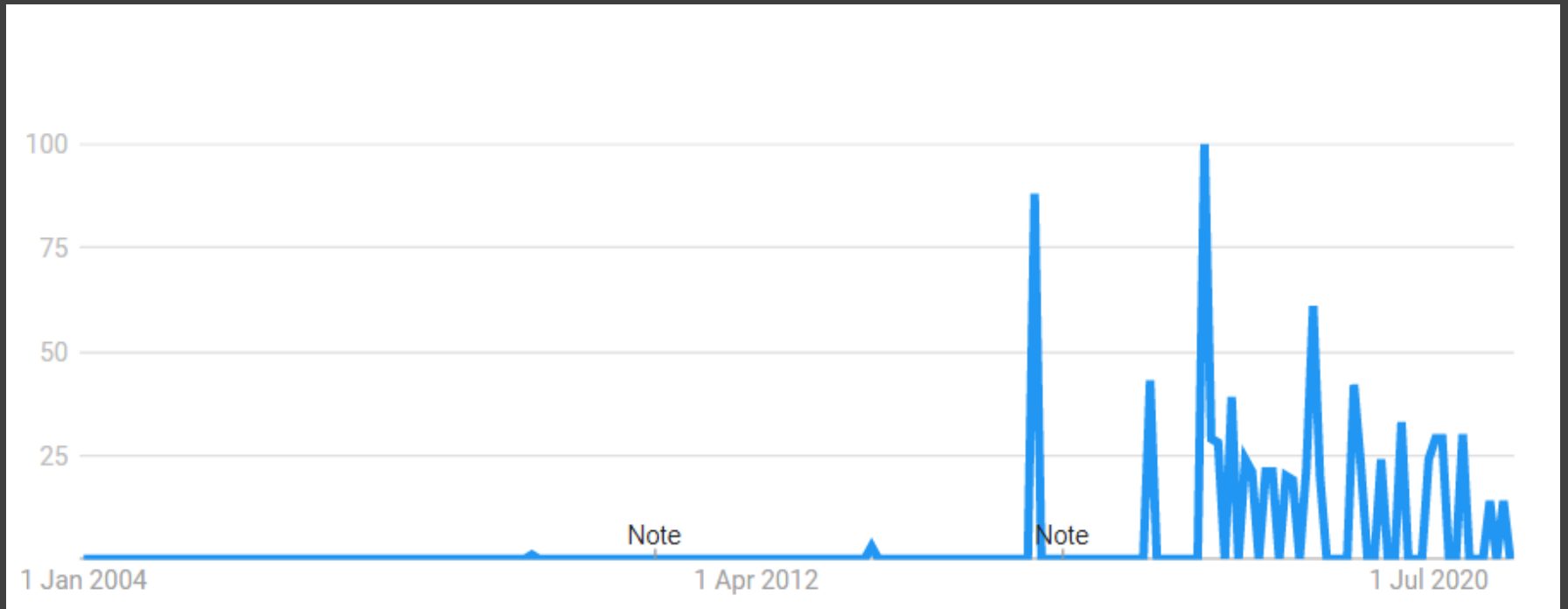


1. You have a certain amount of intelligence, and you can't really do much to change it.
2. Your intelligence is something about you that you can't change very much.
3. You can learn new things, but you can't really change your basic intelligence.

(Dweck, Chiu & Hong, 1995)

Growth Mindset vs. Fixed Mindset (Implicit Theories)





“Growth Mindset” Google trends popularity (China), 2004-2020

Mindset of Attributes other than Intelligence?

- Personality
- Relationships
- Emotions
- Interests
- Weight management
- ...

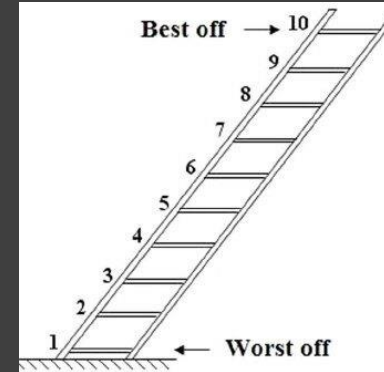


(Orvidas et al., 2018; Schleider & Weisz, 2018; Schroder et al., 2017; Yeager et al., 2013)

Mindsets in different domains are distinct from each other.

Mindset of Socioeconomic Status (SES)?

- Decades of research have consistently found that SES, particularly subjective SES, is robustly associated with adolescents' academic achievement.
- Little work has been conducted on individual beliefs about the changeability of individual SES (Mindset of SES)



Mindset
of SES

You are born with certain socioeconomic status and you really can't do much to change it.

Your socioeconomic status is something about you that you can't change very much.

You can't really change your basic socioeconomic status, even if you try hard.

Mindset of SES and Its Effect on Subjective Well-being

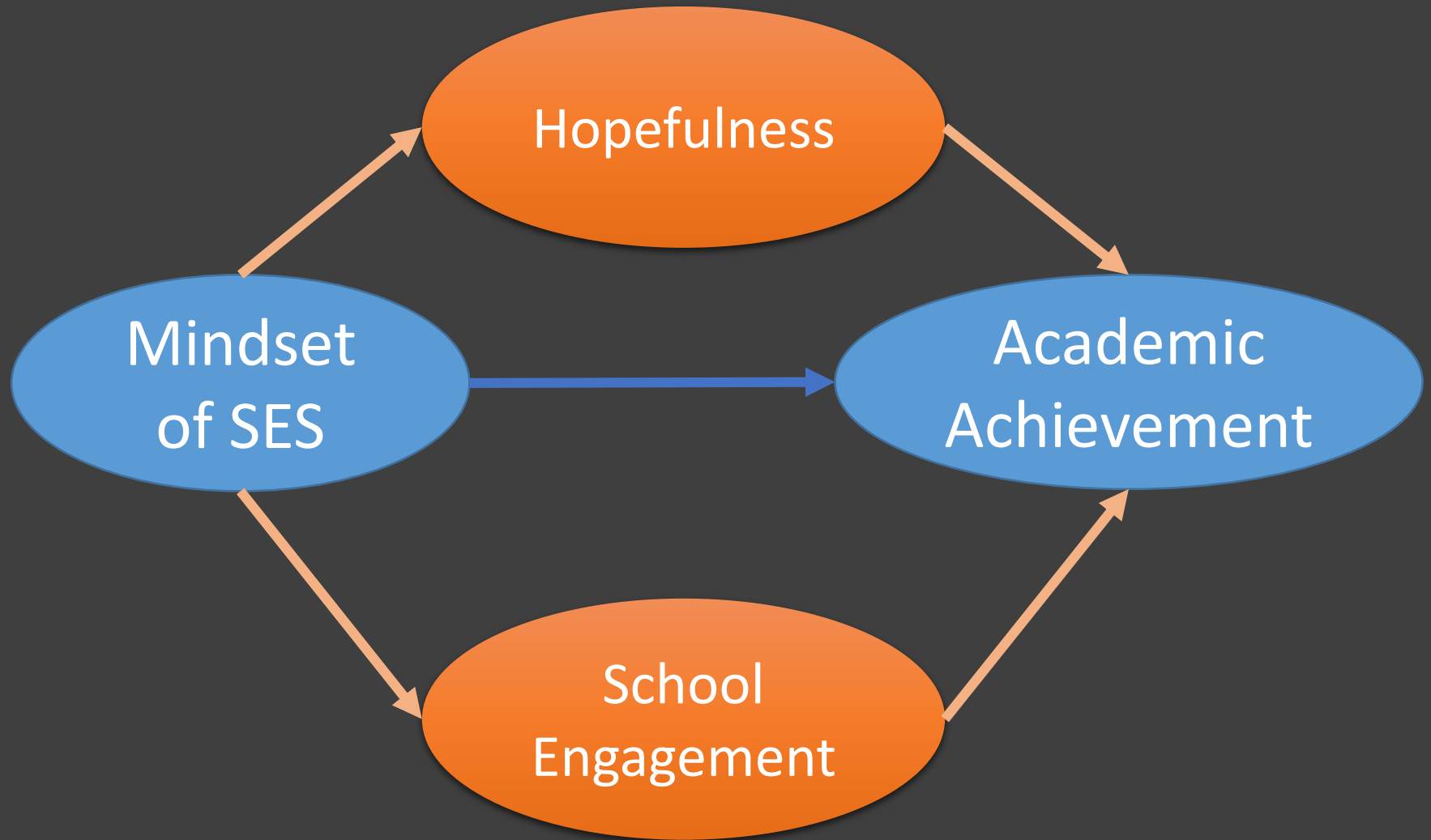
- China Family Panel Survey (CFPS, N = 22,159, 18-65 years old , T1 =2010; T2 = 2014; **Mindset of SES Mean 2.76, SD 0.73**)

Variables	Model 1 β	Model 2 β	Model 3 β
Age	.001	.001	.001
Male	-.019	-.023	-.022
Employed	-.023**	.025**	.025***
Subjective well-being T1	.338***	.290***	.290***
Subjective SES T2	-	.269***	.268***
Objective SES T2	-	.018***	.020***
Mindset of SES T1	-	.026***	.025***
Mindset of SES T1 \times Subjective SES T2	-	-	-.017**
Mindset of SES T1 \times Objective SES T2	-	-	.014*
R ²	.116	.186	.186
F (for change in R ²)	596.246***	592.433***	462.138***

Three Studies

- Study 1 Mindset of SES and Academic Achievement
(Cross-sectional)
- Study 2 Can Mindset of SES be Changed?
• (Lab experiment)
- Study 3 Mindset of SES Intervention in Migrant
Adolescents
(Field intervention)

Study 1 Mindset of SES and Academic Achievement



Mindset of SES and Academic Achievement

Table 1

Descriptive statistics and correlations among the main variables.

Variable	<i>M</i>	<i>SD</i>	1	2	3	4
1. Mindset of SES	5.753	1.148	–			
2. Hopefulness	3.275	0.492	0.326**	–		
3. School Engagement	3.381	0.354	0.209**	0.448**	–	
4. Academic Achievement	0	5.747	0.240**	0.130**	0.225**	–

** $p < .01$.

N = 686 7th graders, 54.5% male, average age = 12.60
Average monthly family income 10,437 (*SD* = 10,380)

Mindset of SES and Academic Achievement

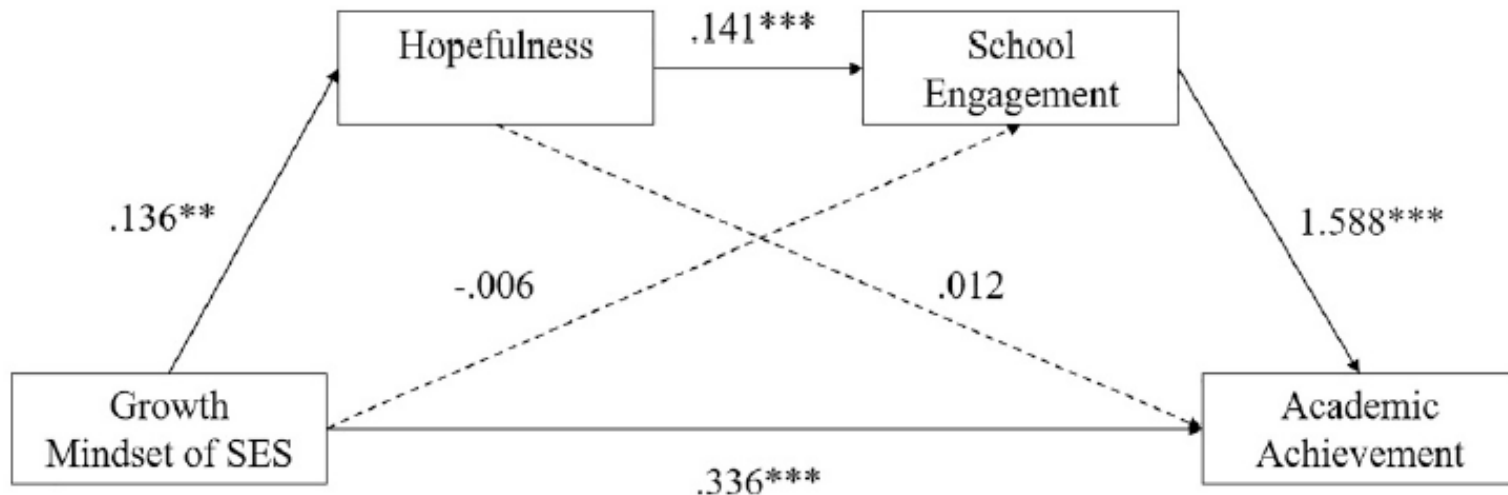


Fig. 2. Indirect effects model.

Note. Values presented in the figure are coefficients. Control variables: gender, age, family income, mindset of intelligence. *** $p < .001$, ** $p < .01$.

N = 686 7th graders, 54.5% male, average age = 12.60
 Average monthly family income 10,437 ($SD = 10,380$)

Mindset of SES and Academic Achievement

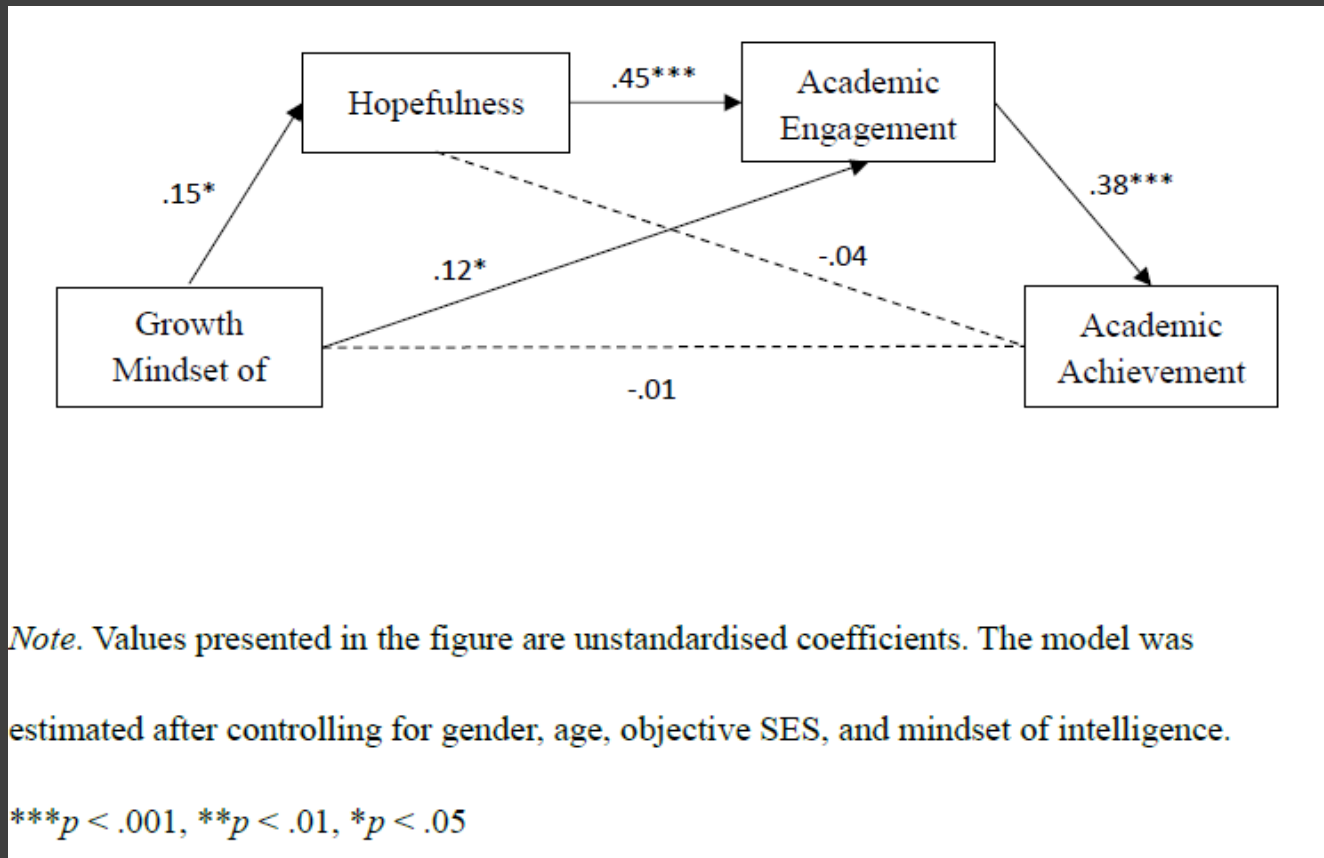
Descriptive Statistics and Correlations among the Main Variables in Study 1a

Variable	<i>M</i>	<i>SD</i>	1	2	3	4
1. Mindset of SES	4.15	.98	-	-	-	-
2. Hopefulness	5.39	1.05	.25***	-	-	-
3. School Engagement	2.84	.42	.31***	.50***	-	-
4. Academic Achievement	2.87	.62	.12*	.16**	.38***	-
5. Mindset of Intelligence	3.64	1.08	.35**	.09	.14*	.06

Note. *** $p < .001$, ** $p < .01$, * $p < .05$

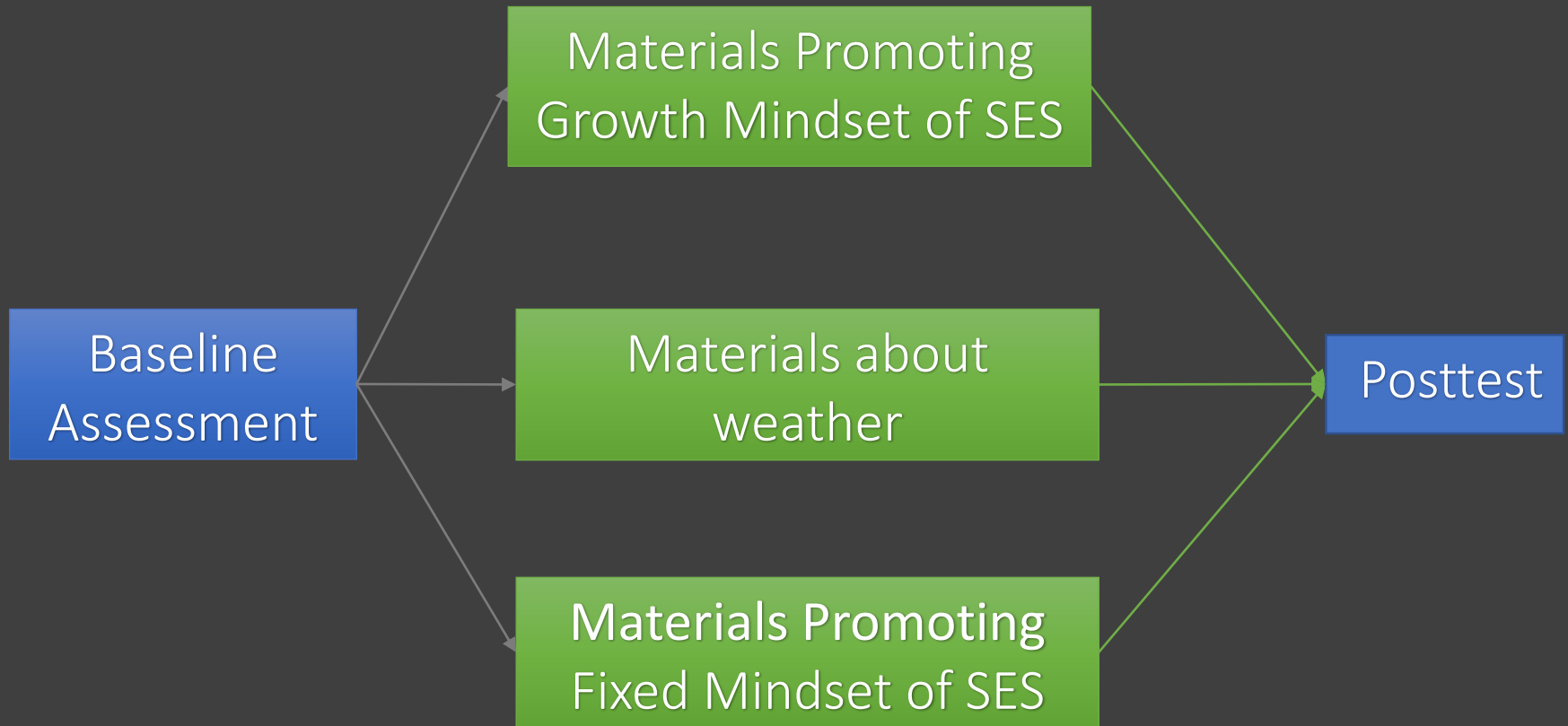
N = 342 undergraduate students (67.5% males), Mean age = 19.5, *SD* = 1.27, 18-25 years old

Mindset of SES and Academic Functioning



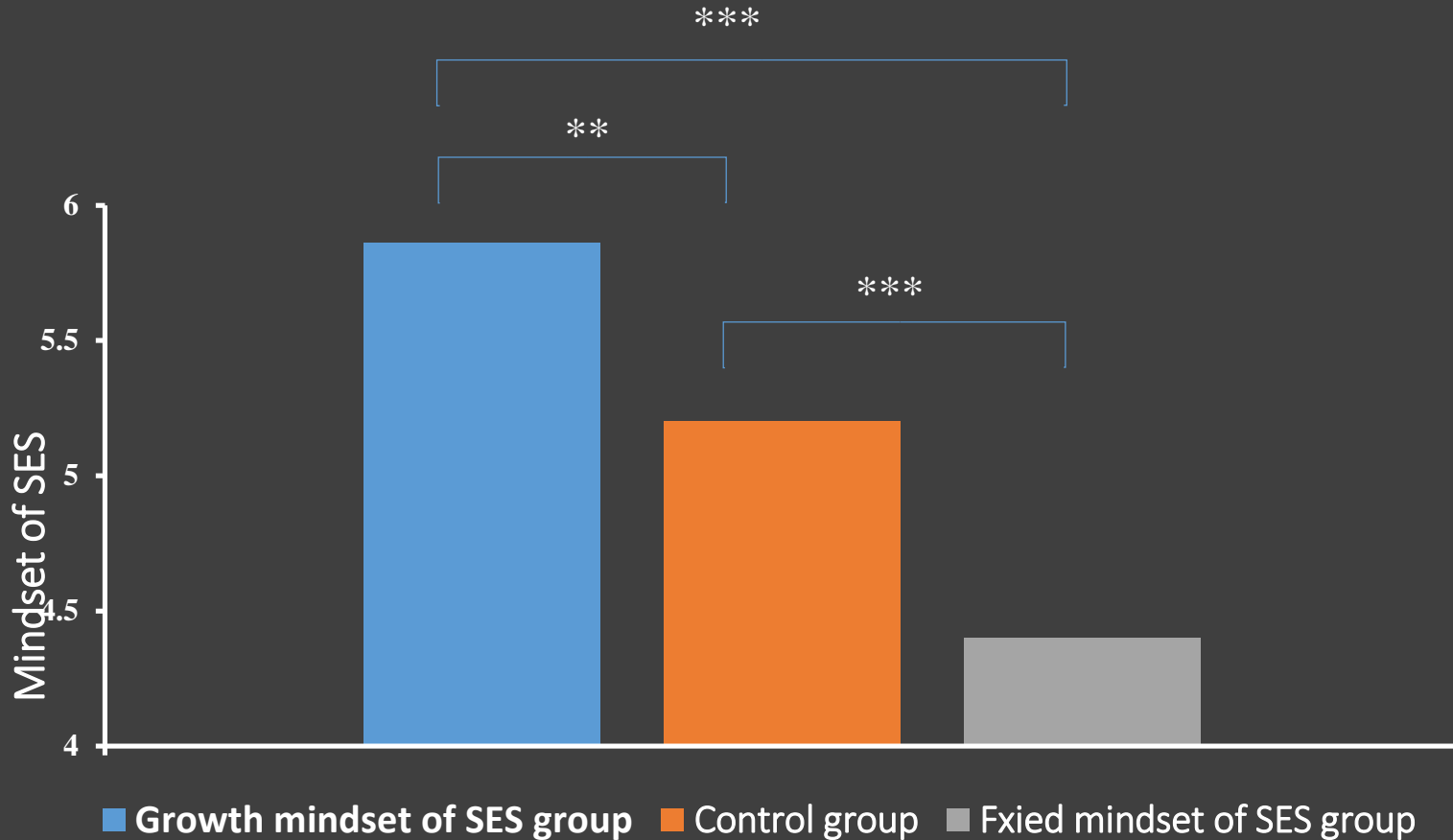
N = 342 undergraduate students (67.5% males), Mean age = 19.5, $SD = 1.27$, 18-25 years old

Study 2 Can Mindset of SES be Changed?



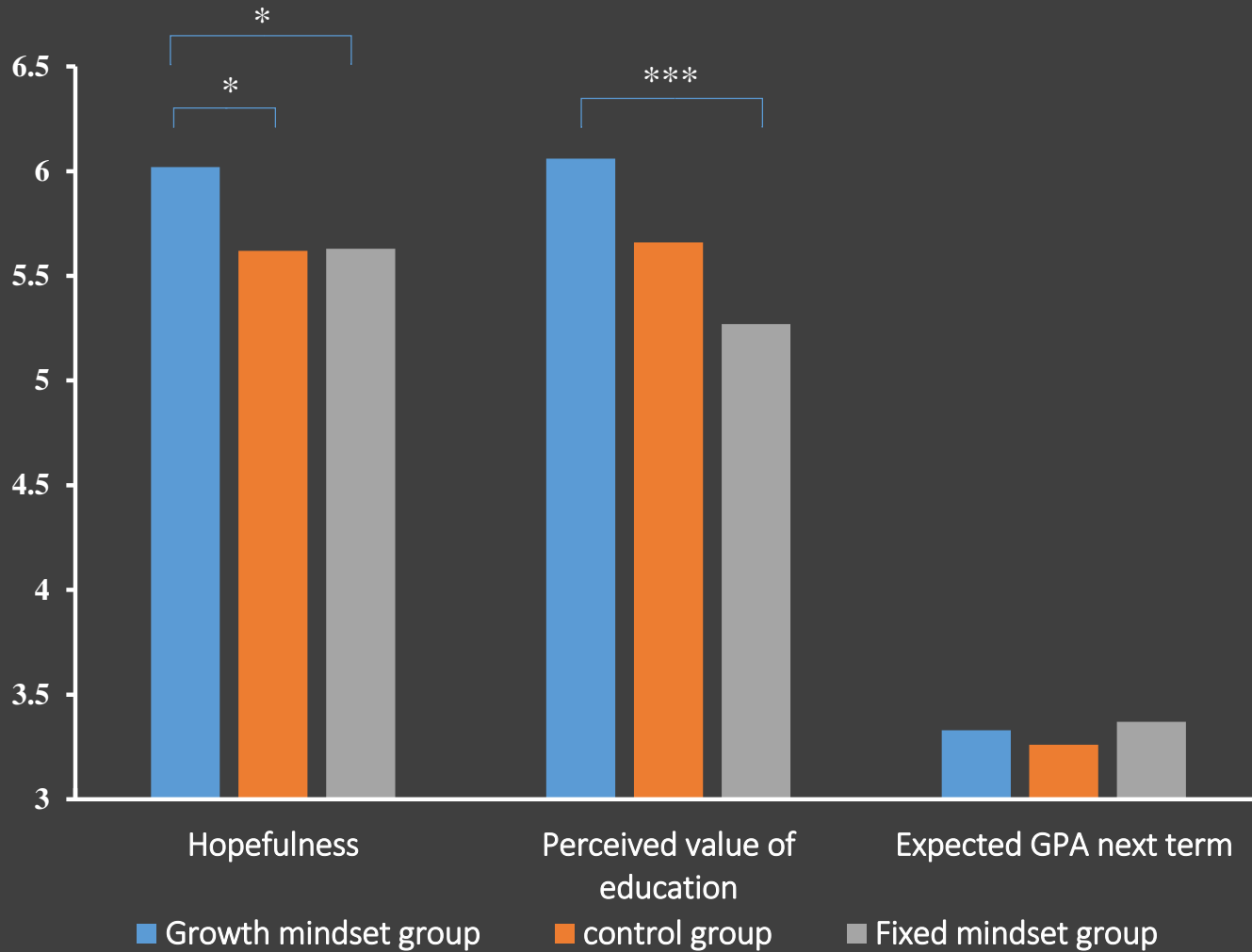
N = 174 Undergraduates
(36.8% males, Mean age = 19.56 years old, *SD* = 1.40)

Can Mindset of SES be Changed?



Note. Asterisks (** $p < .01$, *** $p < .001$) indicate results of post-hoc test (Bonferroni).

Can Mindset of SES be Changed?



Study 3 Intervention in Migrant Adolescents

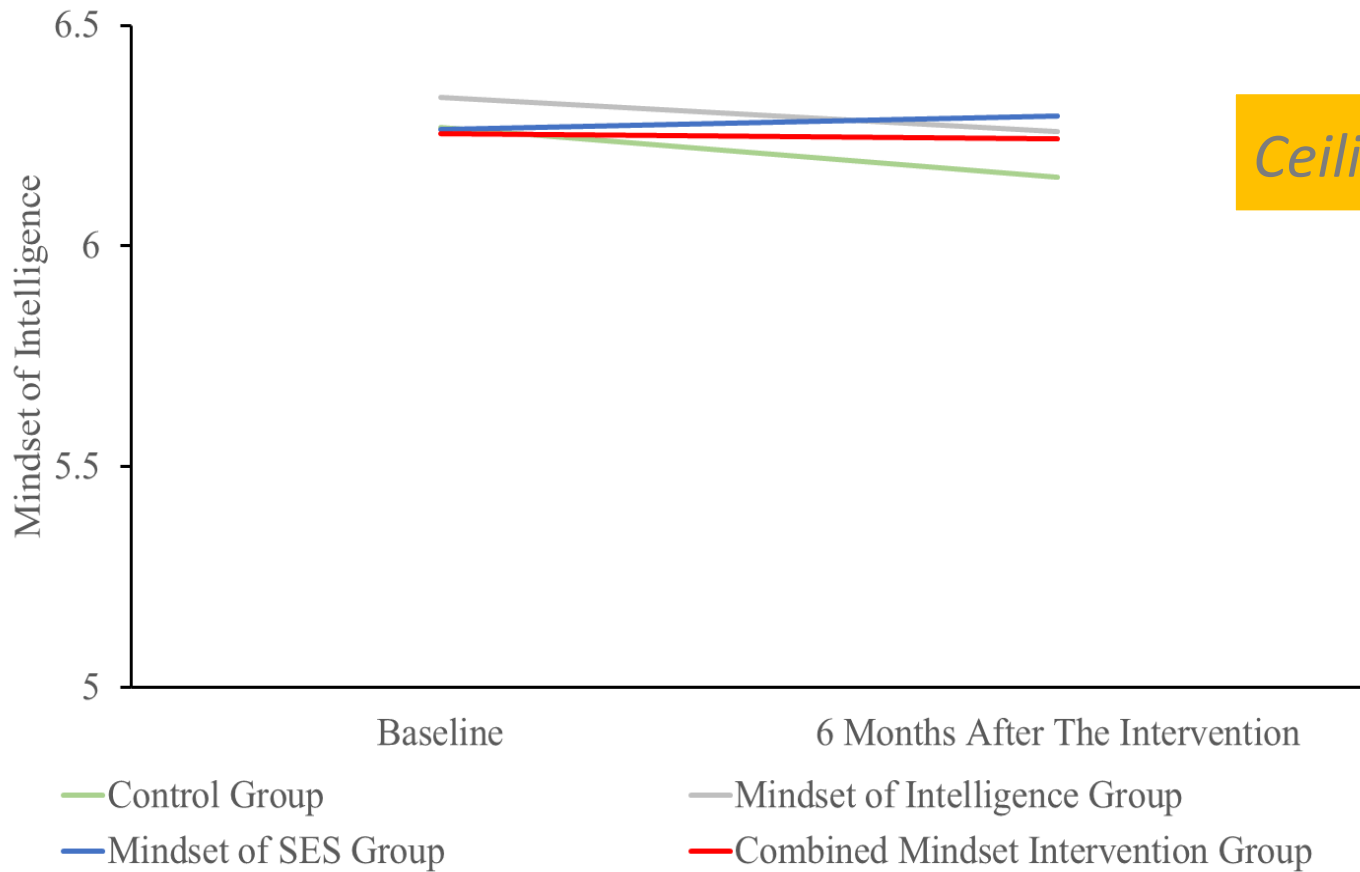
School A: private migrant school, $N = 372$ (T1) / $N = 346$ (T2)



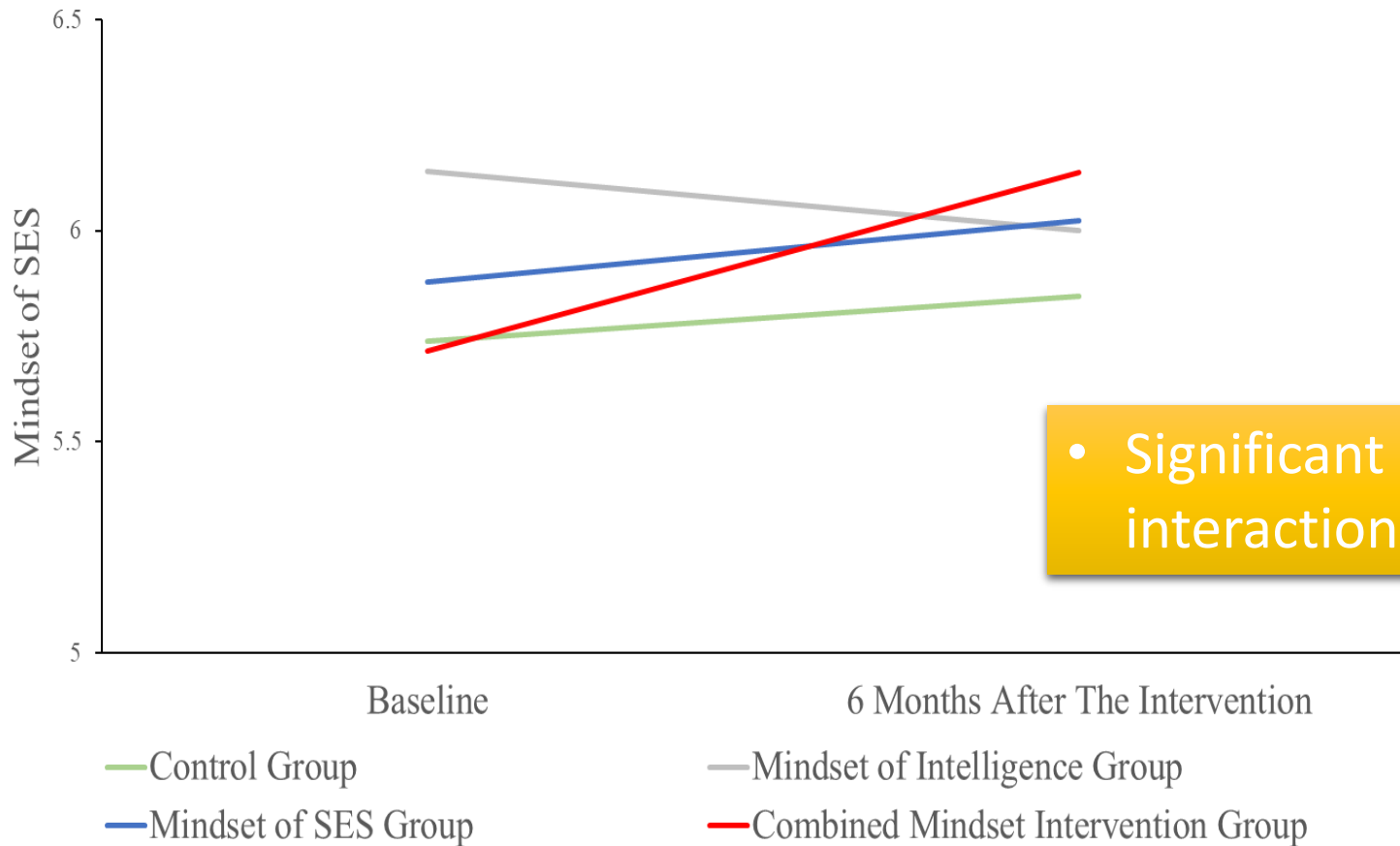
Intervention Protocol

	Mindset of Intelligence	Mindset of SES
Step 1. Knowledge	Topic: Brain plasticity	Topic: SES is changeable, and academic attainment can be a possible path.
Step 2. Internalization	Topic: Intelligence can grow, just like muscles grow through practice.	Topic: Changing SES is quite achievable in Chinese society.
Step 3. Saying-is-believing	Writing an encouraging letter to students at lower grades.	Set a goal for this term on the goal card and write as much detail as possible. Share the cards with classmates.

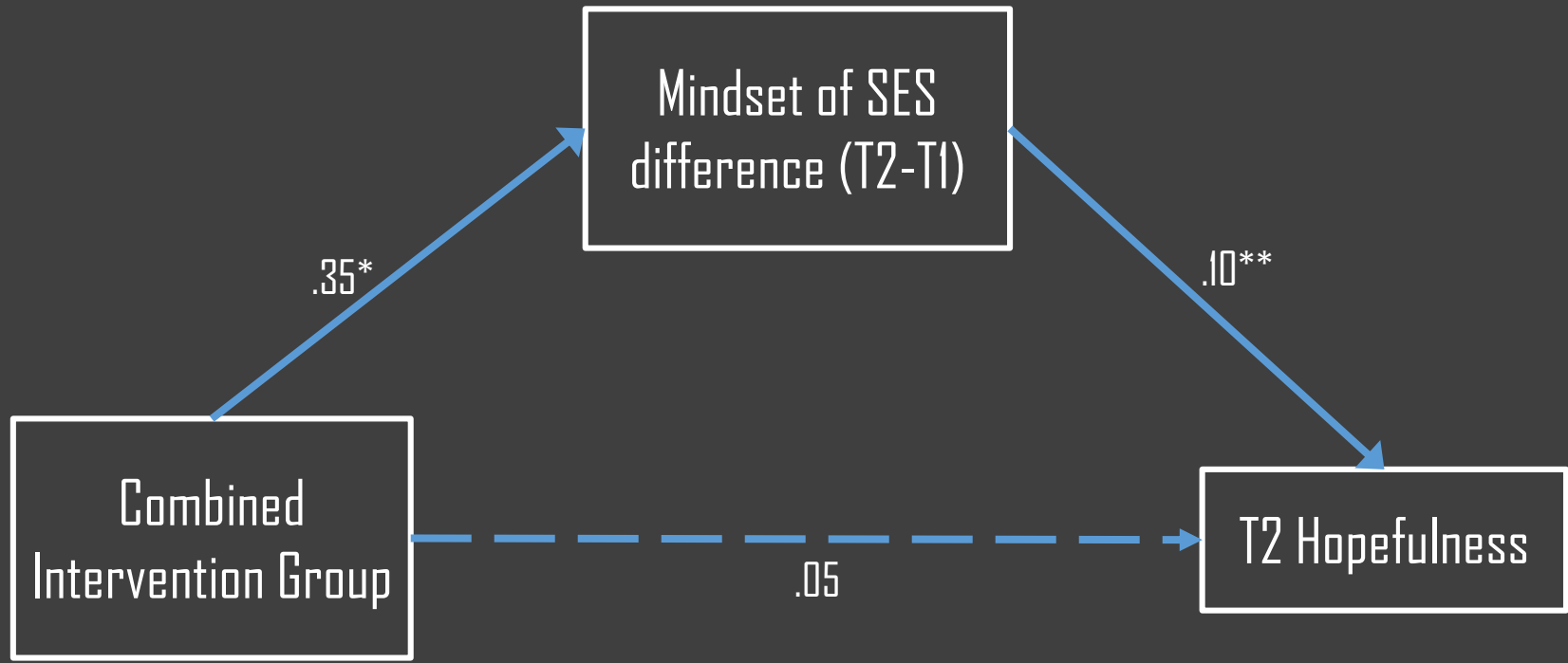
Comparison between different groups of Mindset of intelligence over time



Comparison between different groups of Mindset of SES scores over time



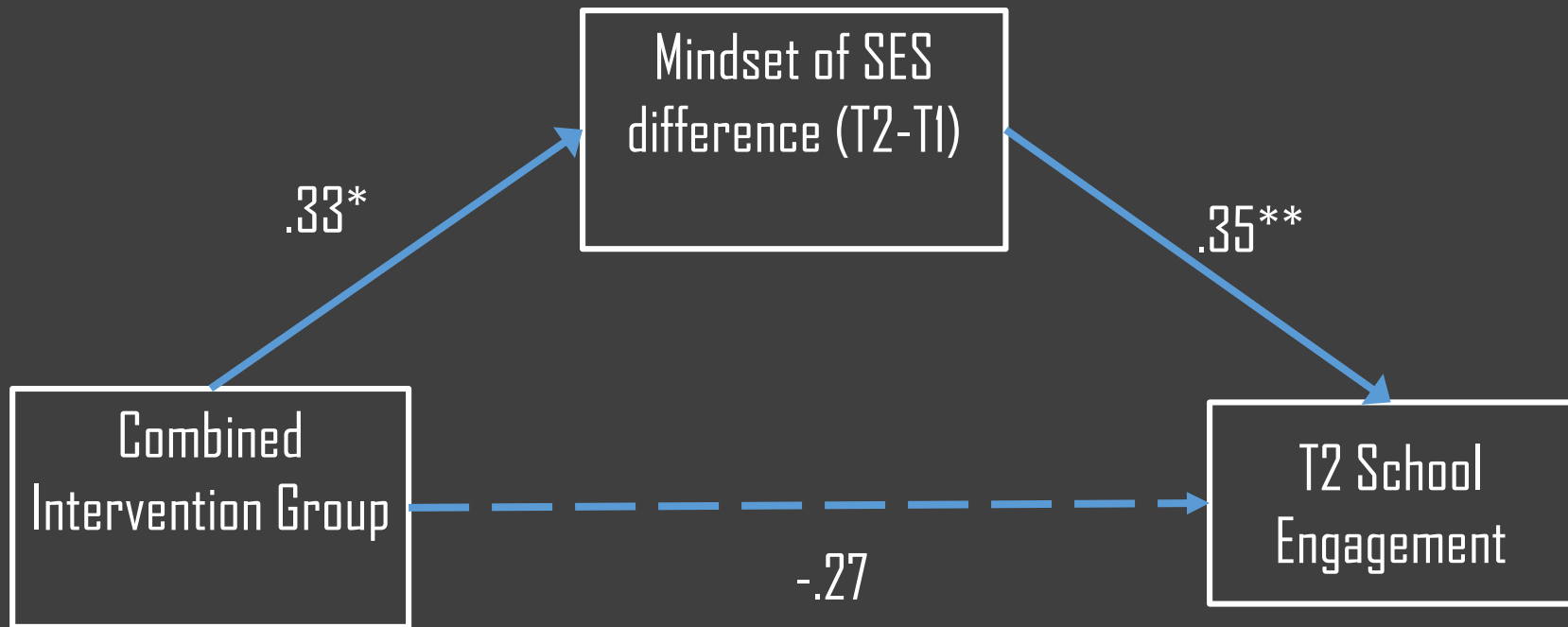
Intervention effect on T2 hopefulness



Note. * $p < .05$, ** $p < .001$.

- Mediation model
- Controlling for T1 Hopefulness,
- T1 Mindset of Intelligence
- Significant Indirect Effect

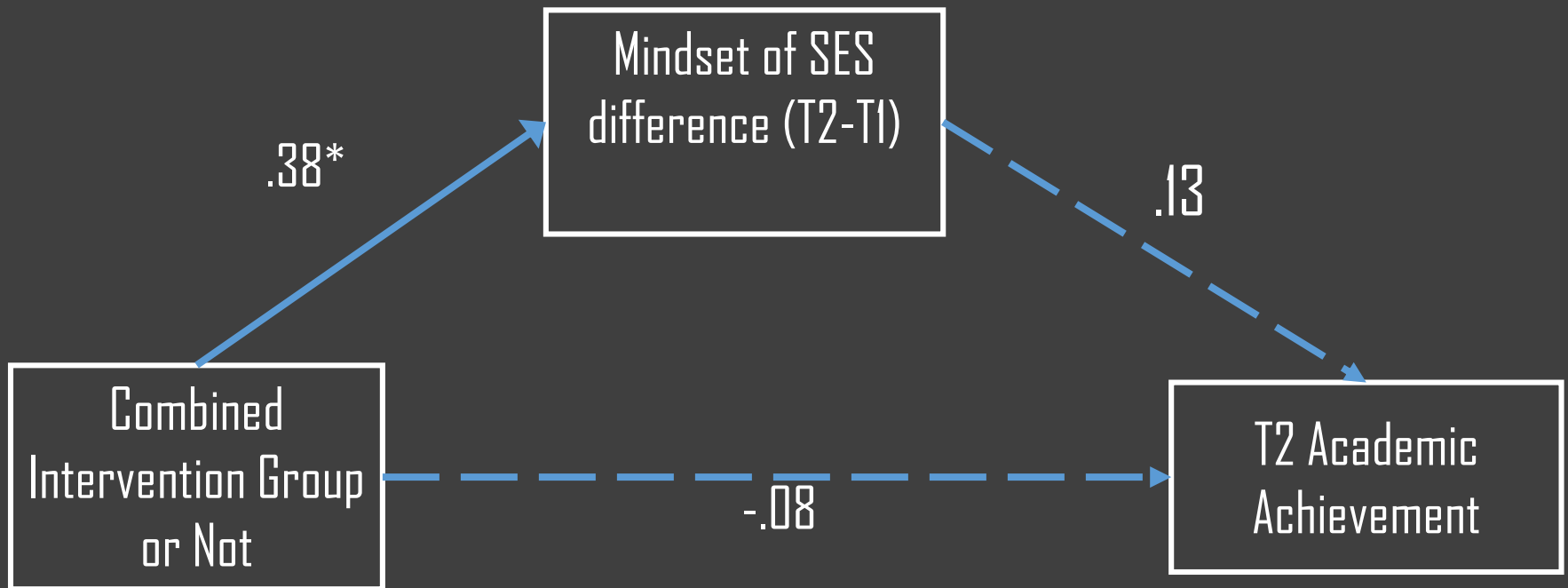
Intervention effect on T2 school engagement



Note. * $p < .05$, ** $p < .001$.

- Mediation model
- Controlling for T1 School Engagement,
- T1 Mindset of Intelligence
- **Significant Indirect Effect**

Intervention effect on T2 academic achievement



Note. * $p < .05$, ** $p < .001$.

- Mediation model
- Controlling for T1 Academic Performance,
- T1 Mindset of Intelligence
- Non sig

Intervention Efficacy

Changes of Mindset of SES



T2 hopefulness



T2 school engagement



T2 academic achievement



Why?

Dose effect?

Support from teachers?

Longer time to act on?

Gender Discussion

Study 1: Correlational relationship between mindset of SES and academic achievement

Study 2 & 3: Casual effect of mindset of SES on academic related outcomes

- Mindset of SES can be changed
- Influence hopefulness and school engagement
- Intervention has not yet improve their academic achievement

Future Directions

- Multilevel intervention (including teachers, parents)
- Focus on low achievers
- Adolescents who have SES-related threat
- Increase the doses
- Examine the Long-term effect

Acknowledgements

Relationships and Health Lab

Department of Psychology
University of Macau



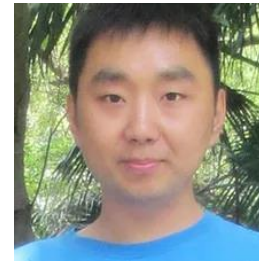
ZHAO Shan



CHEN Lihua



WU Qinglu



LI Qianfeng



ZHAO Qi



DU Hongfei



Ronnel B. King



国家自然科学基金委员会
National Natural Science Foundation of China



Thank you!
感謝聆聽!