



Building an Empirical Argument

With special guest student, “Sadie”

...who’s looking to find background research for her proposal.



Independent variable



Dependent variable

SADIE: ***“I think there should be mindfulness curriculum in preschools, but I can’t find any research on my topic.”***



Independent variable




Dependent variable

S: ***“I think there should be mindfulness curriculum in preschools.”***



What do you think - would this would be convincing to stakeholders?

MINDFULNESS CURRICULUM

 Independent variable

 Dependent variable

 Prediction

S: *“There should be mindfulness curriculum in preschools.”*

PROF: *“What do you think mindfulness curriculum would **change**?”*

WHY??

**MINDFULNESS
CURRICULUM**



??



Independent variable



Dependent variable



Prediction

S: *“There should be mindfulness curriculum in preschools.”*

PROF: *“**Why**, what do you think mindfulness curriculum would **change**?”*

S: *“When kids cut each other in line, instead of being angry, they would be able to stay calm and not get upset or push the other kid.”*

MINDFULNESS CURRICULUM

 Independent variable

 Dependent variable

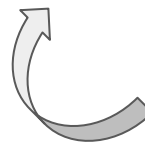
 Prediction

S: *“There should be mindfulness curriculum in preschools.”*

PROF: *“**Why**, what do you think mindfulness curriculum would **change**?”*

S: *“When kids cut each other in line, instead of being angry, they would be able to stay calm and not get upset or push the other kid.”*

PROF: *“What is ‘staying calm and controlling your reaction’?”*



What **search terms** might we use to find relevant research?

MINDFULNESS CURRICULUM



Independent variable



Dependent variable



Prediction

S: *“There should be mindfulness curriculum in preschools.”*

PROF: *“Why, what do you think mindfulness curriculum would change?”*

S: *“When kids cut each other in line, instead of being angry, they would be able to stay calm and not get upset or push the other kid.”*

PROF: *“What is ‘staying calm and controlling your reaction’?”*

**MINDFULNESS
CURRICULUM**

**“EMOTION
REGULATION”**



Independent variable



Dependent variable



Prediction



Measure

S: *“There should be mindfulness curriculum in preschools.”*

PROF: *“Why, what do you think mindfulness curriculum would change?”*

S: *“When kids cut each other in line, instead of being angry, they would be able to stay calm and not get upset or push the other kid.”*

PROF: *“What is ‘staying calm and controlling your reaction’?”*

**MINDFULNESS
CURRICULUM**



**“EMOTION
REGULATION”**

Is there a clear way to **measure** preschoolers’ emotion regulation?



Independent variable



Dependent variable



Prediction



Measure

S: *“There should be mindfulness curriculum in preschools.”*

PROF: *“Why, what do you think mindfulness curriculum would change?”*

S: *“When kids cut each other in line, instead of being angry, they would be able to stay calm and not get upset or push the other kid.”*

PROF: *“Ok, how do you think that would happen?” Will experiencing mindfulness curriculum **directly** cause preschoolers to start controlling their own emotions?*

**MINDFULNESS
CURRICULUM**



**“EMOTION
REGULATION”**



Independent variable



Dependent variable



Prediction



Measure

S: *“There should be mindfulness curriculum in preschools.”*

PROF: *“Why, what do you think mindfulness curriculum would change?”*

S: *“When kids cut each other in line, instead of being angry, they would be able to stay calm and not get upset or push the other kid.”*

PROF: *“Ok, how do you think that would happen?” Will experiencing mindfulness curriculum **directly** cause preschoolers to start controlling their own emotions?*

S: **“No...”**

**MINDFULNESS
CURRICULUM**



**“EMOTION
REGULATION”**



Independent variable



Dependent variable



Prediction



Measure

S: *“There should be mindfulness curriculum in preschools.”*

PROF: *“Why, what do you think mindfulness curriculum would change?”*

S: *“When kids cut each other in line, instead of being angry, they would be able to stay calm and not get upset or push the other kid.”*






PROF: **“How?”**

S: *“...I think that kids will be better at not reacting **because they’ll be able to first even notice that they’re angry, or whatever they’re feeling, which will make them more able to control those feelings.**”*

**MINDFULNESS
CURRICULUM**



**“EMOTION
REGULATION”**

-  Independent variable
-  Dependent variable
-  Prediction
-  Measure
-  Mediating variable

S: *“There should be mindfulness curriculum in preschools.”*

PROF: *“Why, what do you think mindfulness curriculum would change?”*


S: *“When kids cut each other in line, instead of being angry, they would be able to stay calm and not get upset or push the other kid **because they’ll be able to first even notice that they’re angry, which will make them more able to control that feeling.**”*

**MINDFULNESS
CURRICULUM**

**EMOTION
RECOGNITION**

Is there a clear way to measure preschoolers’ emotion **recognition?**

**“EMOTION
REGULATION”**

 Independent variable

 Dependent variable

 Prediction

 Measure

 Mediating variable

 Literature

SADIE: *“I predict that implementing mindfulness curriculum in preschools will increase preschoolers’ capacity to recognize their emotions, which will in turn increase their capacity to regulate them.”*

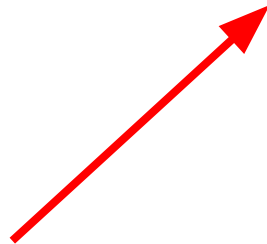
What literature should Sadie look for to support her hypothesis?









**MINDFULNESS
CURRICULUM**

**EMOTION
RECOGNITION**

**“EMOTION
REGULATION”**



-  Independent variable
-  Dependent variable
-  Prediction
-  Measure
-  Mediating variable
-  Literature

SADIE: “I predict that implementing mindfulness curriculum in preschools will increase preschoolers’ capacity to recognize their emotions, which will in turn increase their capacity to regulate them.”

Studies that measure emotion recognition in preschoolers

Look for studies that measure your dependent variable(s) **in your sample population**

(even if the studies you find tested that variable for a totally unrelated reason)

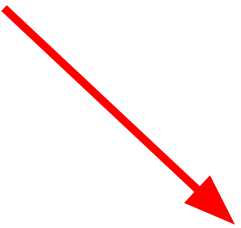
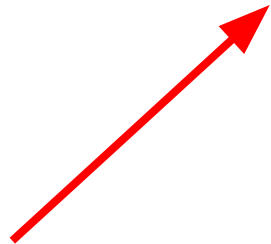
Studies that measure emotion regulation in preschoolers

EMOTION RECOGNITION


Which of these variables can you measure in your age group?

“EMOTION REGULATION”

MINDFULNESS CURRICULUM



 Independent variable

 Dependent variable

 Prediction

 Measure

 Mediating variable

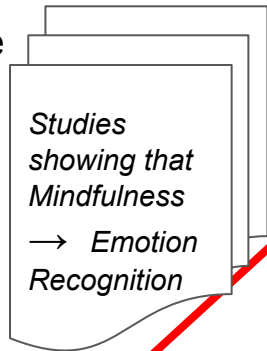
 Literature

SADIE: “I predict that implementing mindfulness curriculum in preschools will increase preschoolers’ capacity to recognize their emotions, which will in turn increase their capacity to regulate them.”

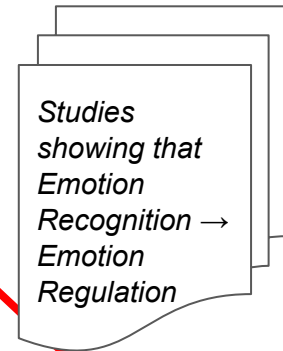
Look for studies providing **evidence of each link or connection between individual variables** in your hypothesis

Here, you can rely on evidence for these links in *other* populations (e.g., middle schoolers, adults...), if you can’t find studies with your sample population.



MINDFULNESS CURRICULUM



EMOTION RECOGNITION



“EMOTION REGULATION”

-  Independent variable
-  Dependent variable

SADIE: “I predict that implementing mindfulness curriculum in preschools will increase preschoolers’ capacity to recognize their emotions, which will in turn increase their capacity to regulate them.”

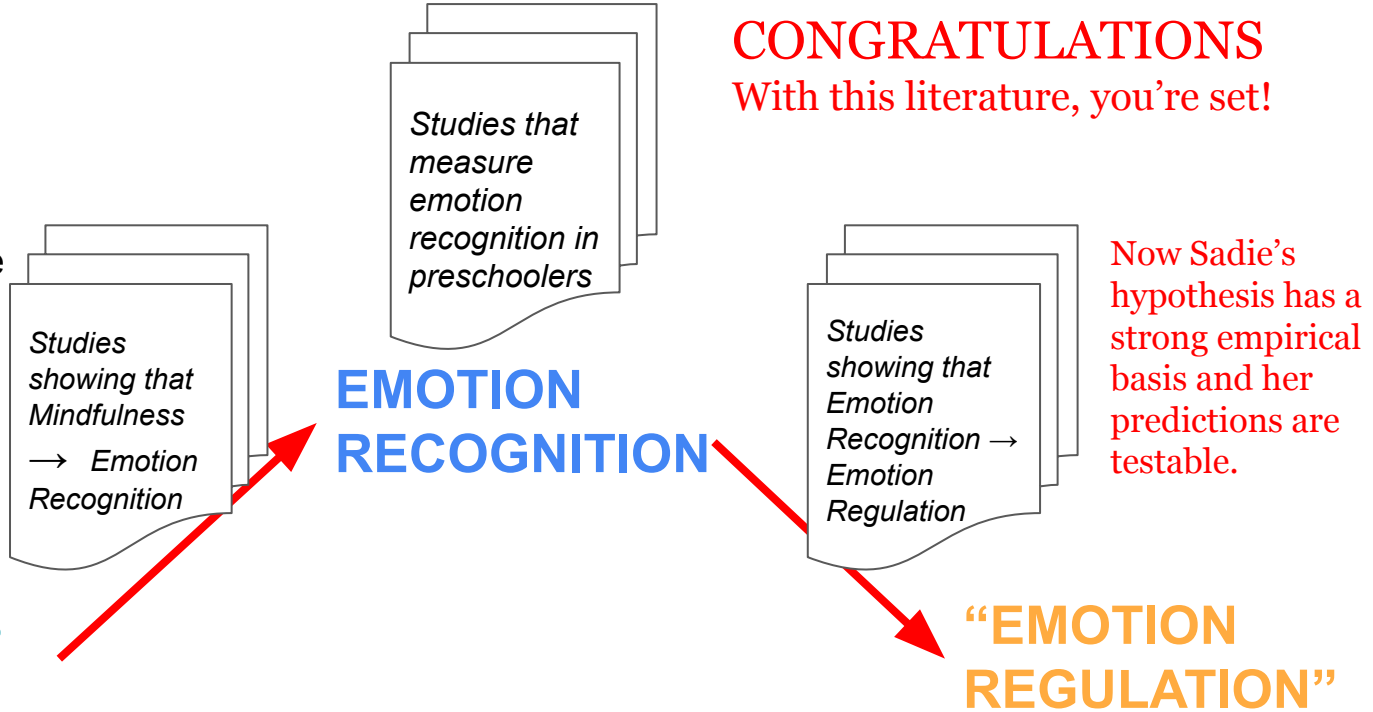
 Prediction

 Measure

 Mediating variable

 Literature

MINDFULNESS CURRICULUM



Your turn!



Independent variable



Dependent variable



Prediction/Relation



Measure



Mediating variable



Moderating variable



Literature

Does your topic idea sound more like:

or

It would be better if [] or I think we should [] ...*

?

We should focus more on lowering [] or raising [] ...*

You likely have your Independent Variable!

Follow the green path

Which of them can you measure in your population?

Brainstorm potential effects / precursors

Do any of your Dependent Variables depend on each other?

Potential Mediating Variables

Sounds like a Dependent Variable!

Follow the orange path

Identify your Independent / Dependent Variable.

How can you measure or manipulate it in your population?

What do you think your Independent Variable will change?

What do you think would affect your Dependent Variable?

Do you expect the links between Variables to differ across children?

Potential Moderating Variables

*we = [policymakers / teachers / caregivers...]

If you can't it's back to