**Supplemental Materials**

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# Study 1 Materials

**Personal Growth Mindsets**

*(1 = Strongly agree, 7 = Strongly disagree)*

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.

**Personal Mindset Certainty**

*(1 = not at all, 7 = very much)*

1. How confident are you in your beliefs about intelligence that you indicated in the previous questions?
2. How sure are you of your responses to the previous questions about intelligence beliefs?
3. How certain do you feel about your responses to the questions about intelligence?

**Instructions about MCM Consulting**

In this next part of this study, we are interested in people's impressions of organizations. MCM Consulting is opening offices around the United States and is looking to hire many new employees and would like to get a sense of how people perceive their company.

MCM pays their employees competitively and provides generous benefits and vacation time. They also offer a lot of flexibility, allowing their employees to work from home or work odd hours if it works best for their schedule.

We'd like you to imagine that you are applying for a job with MCM Consulting. On the next few screens, you will receive information about the company. Please read it carefully, as we will ask you for your impressions of the company later.

**Growth Organizational Mindset Condition**

(Taken directly from Emerson & Murphy, 2014)

**“MCM Consulting Group is a global management consulting firm advising on business strategy. We partner with clients in all sectors and regions to identify their highest-growth opportunities and transform their businesses.**

**MCM Consulting Group was founded on the principle that our clients’ financial results can be measured in terms of our consultants’ motivation and hard work. Companies that continuously advance in the market like to work with us; we are as passionate about their growth as they are.**

**“Our core mission and values have been the backbone for MCM Consulting. Our commitment to creating an atmosphere that fosters a love for learning, passion, creativity, and resourcefulness is at the heart of everything we do.” –Kevin Williams, Managing Director**

**While other consulting firms mistakenly think employees "either have it or they don't," MCM Consulting knows that with enough motivation and passion, people can expand their intelligence and abilities.**

**We feel that one-size-fits-all employee training is not effective—instead, our employee training motivates employees to find environments and working strategies that will help them learn, discover, and grow.**

**Also, because current job performance is a launching point for employee development, we routinely meet with and evaluate employees within MCM to further improve and expand their abilities and provide them with job opportunities that motivate them, providing rewards that will inspire them to reach even beyond their full potential.**

**We find that such performance development not only benefit our employees, but benefit our clients.”**

**Fixed Organizational Mindset Condition**

(Taken directly from Emerson & Murphy, 2014)

**“MCM Consulting Group is a global management consulting firm advising on business strategy. We partner with clients in all sectors and regions to identify their highest-performance opportunities and transform their businesses.**

**MCM Consulting Group was founded on the principle that our clients’ financial results can be measured in terms of our consultants’ talents and success. Companies that continuously outperform the market like to work with us; we are as focused on their results as they are.**

**“Our core mission and values have been the backbone for MCM Consulting. Our commitment to creating an atmosphere of “bests”—the best instincts, the best ideas, the best people—is at the heart of everything we do.” –Kevin Williams, Managing Director**

**While other consulting firms mistakenly think “just anybody” can be a good employee, MCM Consulting knows that there are only certain people who have the intelligence and abilities that we are looking for.**

**We feel that one-size-fits-all employee training is not effective—instead, our employee training targets the talents that employees come in with, placing them based on these abilities.**

**Also, because current job performance is often predictive of later performance, we routinely meet with and evaluate employees within MCM to further identify their skills and provide them with job opportunities that match these skills, providing rewards that will inspire them to reach the extent of their natural abilities.**

**We find that such performance expectations not only benefit our employees, but benefit our clients.”**

**Manipulation Check**

*(1 = Strongly agree, 7 = Strongly disagree)*

1. MCM Consulting seems to believe that people have a certain amount of intelligence, and they can’t really do much to change it.
2. MCM Consulting seems to believe that no matter who they are, people can significantly change their intelligence level. (reverse scored)
3. MCM Consulting seems to believe that intelligence is something about people that they can’t change very much.
4. MCM Consulting seems to believe that people can always substantially change how intelligent they are. (reverse scored)

**Interest**

*(1 – not at all, 7 – extremely)*

1. How interested would you be in working at a place like MCM Consulting?
2. How much would you want to work at a place like MCM Consulting?
3. To what extent would you be willing to work at a place like MCM Consulting?

**Belonging**

*(1 – not at all, 7 – extremely)*

1. How comfortable would you feel in this organization?
2. How much would you feel that you could “be yourself” in this organization?
3. How accepted would you feel in this organization?
4. How alienated would you feel in this organization? (R)
5. How much would you feel like you “fit in” in this organization?

**Fit**

*(1 – strongly agree, 7 – strongly disagree)*

1. Working at MCM Consulting would feel natural.
2. Working at MCM Consulting would be a good fit for me.
3. Working at MCM Consulting would feel right.

**Evaluative Concerns**

*(1 – not at all 7 – very much)*

1. In this organization, how much would you worry that you might have said the wrong thing?
2. In this organization, how much would you worry that you might have made a mistake in front of your boss?
3. In this organization, how much would you worry that your boss might have underestimated your intelligence?
4. In this organization, how much would you worry that your boss might have thought that you were a slow worker?
5. In this organization, how much would you worry that your boss might not believe in your abilities to do well?

**Engagement**

*(1 – strongly agree, 7 – strongly disagree)*

1. If I worked at MCM Consulting, I think I would be willing to put in extra effort if my boss asked me to.
2. If I worked at MCM Consulting, I think I would be willing to put in a great deal of effort beyond that normally expected.
3. I think that the environment of MCM Consulting would inspire me to do the very best job that I can.

**Learning about Organization**

*(1 – not at all, 7 – very much)*

1. To what extent would you be interested in learning more about MCM Consulting?
2. How much would you be interested in having an informational meeting with a representative from MCM Consulting to learn more about the organization?
3. To what extent would you want to go to MCM’s Consulting’s website to learn more about them?

**Intentions to Apply to Organization**

*(1 – not at all, 7 – very much)*

1. If you worked in the consulting industry, how likely would you be to apply to work at MCM Consulting?
2. If you wanted to work in consulting, how likely would to be to submit an application for a job at MCM Consulting?

**Recommend to Friend**

*(1 – not at all, 7 – very much)*

1. If you had a friend who worked in the consulting industry, how likely would you be to recommend that they look into MCM Consulting?
2. If a friend who worked in the consulting industry was looking for a job, how willing would you be to recommend that they apply to MCM Consulting?

# **Study 1 Factor Analysis**

We conducted these factor analyses consistent with recommendations from Fabrigar and Wegener (2012). Prior to analyses, we flipped the reverse-coded belonging item to be consistent with the rest of the scale. We began by examining a scree plot and a parallel analysis. The eigenvalues were computed from the reduced correlation matrix. Although interpreting scree plots is a subjective endeavor, it seemed to indicate two factors. The parallel analyses (that compare the obtained eigenvalues to those from random data and, therefore, might represent a maximum number of major factors) suggested that there should be no more than two factors (Figure S1). Model fit using Root Mean Square Error of Approximation (Steiger, 1990), also suggested that fit was unacceptable with one factor (RMSEA = .24, 95% CI [.23, .25]), but acceptable with two factors (RMSEA = .06, 95% CI [.04, .08]). Given these indicators and our theorizing, we present a two-factor solution (Table S1). The belonging items tended to load together and the interest items loaded together. The reverse coded belonging item loaded less strongly; this is consistent with previous work showing that reverse scored items sometimes load separately (Edwards, Cheavens, Heiy, & Cukrowicz, 2010). To conduct this factor analysis, we used the ‘psych’ package in R. We used a maximum likelihood estimation approach, factor loadings are based on the pattern matrix, and the factors are rotated using an oblimin transformation with Kaiser normalization.

Eigenvalue and Parallel Analysis Information for Factor Analyses

**Figure S1**

*Scree Plot and Parallel Analysis for the belonging and interest items in Study 1*

**Table S1**

*Factor loadings (bold when absolute value >.5) for a two-factor solution for belonging and interest in Study 1*

|  |  |  |
| --- | --- | --- |
| **Item** | **Belonging** | **Interest** |
| How interested would you be in working at a place like MCM Consulting? | -.03 | **-.99** |
| How much would you want to work at a place like MCM Consulting? | .04 | **-.91** |
| To what extent would you be willing to work at a place like MCM Consulting? | .03 | **-.91** |
| How comfortable would you feel in this organization? | **.79** | -.16 |
| How much would you feel that you could “be yourself” in this organization? | **.94** | .01 |
| How accepted would you feel in this organization? | **.94** | .00 |
| How alienated would you feel in this organization? (R) | .47 | .04 |
| How much would you feel like you “fit in” in this organization? | **.89** | -.05 |

# Study 1 Preregistered Analyses and Results

**Personal Mindsets x Organizational Mindset Interaction on Interest in Joining Organization**

In the pre-registration for this study, we planned to examine effects of organizational mindsets among participants who were more growth versus more fixed at 6 versus 2 on the personal mindsets scale. We chose to present results +/- 1 SD from the mean in the text to be consistent across all studies.

When we examined the simple effect of organizational mindsets among those participants who clearly endorsed a fixed mindset (2 on the scale), they did not demonstrate a preference (i.e., differential interest) between the fixed and growth organizations, *b* = .08,95% CI [-.10, .25], *t*(792) = .88, *p* = .379, *r* = .03. When we examined the simple effect of the organizational mindsets among those participants who clearly endorsed a growth mindset (6 on the scale), they demonstrated a strong preference for the growth organization, *b* = .75,95% CI [.60, .91], *t*(792) = 9.83, *p* < .001, *r* = .33.

# Study 1 Analyses for Outcomes measured but not reported in text

**Table S2a**

*Study 1 Personal Mindset by Organizational Mindset Interaction on Variables Not Reported in the Main Text*

|  |  |  |  |
| --- | --- | --- | --- |
|  | Evaluative Concerns | Engagement | Fit |
| Predictor Variable | *b*95% CI | *t* | *p* | *b*95% CI | *t* | *p* | *b*95% CI | *t* | *p* |
| Personal Mindset | -.09 [-.16, -.03] | -2.82 | .005 | .04 [-.04, .12] | 1.05 | .293 | .05[-.02, .13] | 1.45 | .146 |
| Organizational Mindset | -.46 [-.57, -.35] | -8.10 |  < .001 | .16[.03, .29] | 2.43 | .015 | .14[.01, .26] | 2.10 | .036 |
| Personal x Organizational Mindset | -.10 [-.16, -.03] | -2.90 | .004 | .05[-.03, .12] | 1.22 | .221 | .05[-.03, .12] | 1.29 | .197 |
| Simple Effects of Organizational Mindset |
| Growth Mindset Students (+1 *SD*) | -.62 [-.78, -.46] | -7.79 | < .001 | .24[.06, .43] | 2.59 | .010 | .22[.04, .40] | 2.40 | .017 |
| Fixed Mindset Students (-1 *SD*) | -.29 [-.45, -.14]  | -3.67 | < .001 | .08[-.10, .27] | .85 | .395 | .05[-.13, .23] | .57 | .566 |

**Table S2b**

 *Study 1 Personal Mindset by Organizational Mindset Interaction on Variables Not Reported in the Main Text Continued*

|  |  |  |  |
| --- | --- | --- | --- |
|  | Intentions to Learn about Organization | Intentions to Apply | Recommend to Friend |
| Predictor Variable | *b*95% CI | *t* | *p* | *b*95% CI | *t* | *p* | *b*95% CI | *t* | *p* |
| Personal Mindset | .02[-.06, .09] | .46 | .644 | .003[-.06, .07] | .09 | .931 | -.01[-.08, .05] | -.46 | .649 |
| Organizational Mindset | .41[.28, .54] | 6.41 |  < .001 | .45[.34, .56] | 8.08 | < .001 | .48[.38, .59] | 8.76 | < .001 |
| Personal x Organizational Mindset | .17[.09, .24] | 4.42 | < .001 | .18[.11, .24] | 5.48 | < .001 | .18[.11, .24] | 5.42 | < .001 |
| Simple Effects of Organizational Mindset |
| Growth Mindset Students (+1 *SD*) | .69[.52, .87] | 7.67 | < .001 | .76[.60, .91] | 9.60 | < .001 | .78[.63, .94] | 10.04 | < .001 |
| Fixed Mindset Students (-1 *SD*) | .13[-.05, .30] | 1.40 | .161 | .15[-.01, .30] | 1.84 | .066 | .18[.03, .34] | 2.36 | .018 |

# Additional Information About Power Analyses Across Studies

**Studies 1 and 2**

*A priori Power Analyses*

As is clear from the pre-registrations, these studies were originally run to test the hypothesis that the matching effects we focus on would be moderated by the certainty with which people held their personal mindset beliefs. We had powered these studies to be able to detect the simple two-way interaction between organizational mindset and personal mindset certainty among fixed participants because this was the smallest observed effect size of interest to us at the time. To conduct our power analyses to determine sample sizes, we used an effect size that was the observed effect size across all the data we had to test that hypothesis at the time of data collection. That is, the standardized simple mindset certainty x organizational mindset two-way interaction coefficient across all the data we had collected, which was β = -.09 for Study 1 and β = -.11 for Study 2 (once we included the data from Study 1 in the estimate). We used R code from Lane et al., (2016) to calculate power simulations based on the observed standardized coefficients in a model with organization mindset as a factor, personal mindset certainty centered at the mean, and personal mindsets centered at 2 (fixed participants). The power analysis suggested that *N* = 850 would yield 82% power to detect this effect.

**Study 3**

*A Priori Power Analysis*

Sample size was determined *a priori* using a G-Power power analysis with a power of .95, alpha of .05, four groups, two covariates, a numerator degrees of freedom of 2, and an effect size of *d* = .49. This effect size was chosen based on the results of a sensitivity power analysis reported in [blinded for review], . Results of the analysis suggested a sample size of *N* = 261. This study was originally designed to test different, gender-specific (i.e., the gender x professor mindset condition interaction), hypotheses which included controlling for personal mindset and math identification. Thus, the use of two covariates in the a priori power analysis.

# Study S1a Direct Replication of Study 1 Results

**Table S3**

*Study S1a Personal Mindset by Organizational Mindset Interaction on Interest*

|  |  |  |  |
| --- | --- | --- | --- |
| Predictor Variable | *b*95% CI | *t* | *p* |
| Personal Mindset | .07 (.06)[-.05, .20] | 1.18 | .240 |
| Organizational Mindset | .58 (.12)[.35, .81] | 5.03 |  < .001 |
| Personal x Organizational Mindset | .22 (.06)[.10, .35] | 3.49 | < .001 |
| Simple Effects of Organizational Mindset |
| Growth Mindset Students (+1 *SD*) | .99 (.16)[.66, 1.31] | 6.03 | < .001 |
| Fixed Mindset Students (-1 *SD*) | .18 (.16)[-.14, .50]  | 1.09 | .278 |

*Note.* Study S1a only included a measure of interest, not a measure of belonging

# Study S1b Direct Replication of Study 1 Results

**Table S4**

*Study S1b Personal Mindset by Organizational Mindset Interaction on Interest*

|  |  |  |  |
| --- | --- | --- | --- |
| Predictor Variable | *b*95% CI | *t* | *p* |
| Personal Mindset | .11 (.05)[.00, .22] | 2.05 | .041 |
| Organizational Mindset | .48 (.09)[.31, .66] | 5.38 |  < .001 |
| Personal x Organizational Mindset | .03 (.05)[-.08, .14] | .55 | .585 |
| Simple Effects of Organizational Mindset |
| Growth Mindset Students (+1 *SD*) | .53 (.13)[.28, .78] | 4.17 | < .001 |
| Fixed Mindset Students (-1 *SD*) | .43 (.13)[.18, .68]  | 3.41 | < .001 |

*Note*. Study S1b only included a measure of interest, not a measure of belonging

# Study 2 Materials

**Personal Growth Mindsets**

*(1 – Strongly Agree, 7 – Strongly Disagree)*

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.

**Personal Mindset Certainty**

*(1 – very certain, 7 – very uncertain)*

\*Immediately following each personal growth mindset, participants were asked:

1. How certain do you feel about the response that you just provided?

**Description of XYZ Organization**

In this next part of this study, we are interested in people's impressions of organizations. The XYZ Organization is a national non-profit organization founded on principles of leadership, volunteerism and serving the community. The XYZ Organization is an award-winning organization and was named The National Council of Non-Profit's most outstanding community outreach organization of last year. It has been in the community for over 10 years and has a reputation for being one of the most active tutoring and volunteer organizations.

XYZ'ers pride themselves on constantly looking for new ways to update their tutoring and volunteer programs that they currently participate in. Imagine that you've heard that XYZ'ers are a fun group of people and the camaraderie among the members is strong. In fact, several of your friends would like to join as well.

For all of these reasons, imagine that the XYZ Organization is very attractive to you and you want to join the group very much - you've been looking for an outlet to volunteer.

On the next few screens, you will see the minutes from the most recent XYZ meeting. Please read them over in order to get a better understanding of the XYZ Organization and how it operates.

**Growth Organization Condition**

(Taken directly from Murphy & Dweck, 2010)

**XYZ Organization**
Minutes - July 10, 2018

I. Called to order by XYZ President, Kevin at 7:30 pm.

II. Attendance was taken by Secretary, Tara. All members were present.

III. Kevin discussed the first item on the agenda- a vote to invite special speaker, Tim, to speak at our next meeting. Tim is the head of **Project Learn**- a group we are considering teaming up with for our next volunteer project.

Kevin then reviewed how**Project Learn** came to the attention of the XYZ Organization: The organization discussed a **Project Learn** article distributed at last meeting. The article was about how best to tutor kids, given that the brain forms new connections over time and that intelligence increases over one's lifespan. Several members of the group (Sara, Max, and Chris) were drawn to this mission advocated by **Project Learn**'s article.

They introduced an item to the agenda last week to discuss **Project Learn'**s mission and philosophy and how we might use it in our own ongoing projects, like tutoring. Because our goal is to help kids in the most informed and educated way possible, we want to be sure we are employing the best tutoring methods available.

a) Kevin yielded the floor to Sara who briefly reviewed **Project Learn'**s philosophy for the group. The main philosophy advocated by **Project Learn** is that a person's intelligence can be increased substantially by environmental factors and effort. **Project Learn** focuses on adapting this view point and putting it into practice.

b) Sara said that **Project Learn**focuses on motivating children to find environments and learning strategies that will help them fulfill their true potential through effort, learning and discovery - building their intellectual abilities. Sara discussed ways that the XYZ Organization could take this viewpoint into consideration when we plan activities for the student we currently tutor.

IV. Kevin then opened the floor for Open Mic time to hear what members thought about this philosophy and about inviting the head of **Project Learn** to give a talk about the group's viewpoint and to discuss the possible collaboration between **Project Learn** and the XYZ Organization.

a) Anna came up to the mic and described how much she liked this viewpoint and how it matched her own experiences.

b) Justin said that from his experiences as a mentor to incoming freshmen, he believed the viewpoint was true and that the goal of our tutoring should be to find material that will help people increase their abilities. He would like to hear more from the head of **Project Learn** about how to do this.

c) Brenda agreed, saying that when she tutored students in Chemistry last year, she was surprised by how much her students always seemed to improve and expand their abilities over time. This seemed to really predict well their grades in the class.

d) Alex said that viewing intelligence as something that is pretty flexible over one's lifetime was important and that he was excited about implementing this philosophy in our tutoring program. Making this viewpoint explicit in our program might really help the people we tutor.

e) Joseph said that he thought this applied to both children and adults. That from his experience, it seems like qualities such as a person's intelligence is something that can definitely be expanded upon so it's important to keep this in mind when tutoring.

V. After there were no more comments, Open Mic time was closed by Kevin. He made a motion to have the members vote to bring Tim to speak at our meeting in two weeks. The vote was unanimous. It was resolved that we will invite Tim to come speak to the XYZ Organization two weeks from today.

VI. Next item on the agenda was the finance report. The budget was discussed by treasurer, Patrick. We raised $250.57 at our last fundraiser and looks like we will be able to have snacks provided at our meetings this quarter.

VII. Last item on the agenda was Outreach coordinator, Lindsey. She discussed the importance of passing out new member applications. Application deadline for next quarter is September 15.

VIII. Meeting was adjourned at 8:45 pm by Kevin.

**Fixed Organization Condition**

(Taken directly from Murphy & Dweck, 2010)

**XYZ Organization**
Minutes - July 10, 2018

I. Called to order by XYZ President, Kevin at 7:30 pm.

II. Attendance was taken by Secretary, Tara. All members were present.

III. Kevin discussed the first item on the agenda- a vote to invite special speaker, Tim, to speak at our next meeting. Tim is the head of **Project Smart**- a group we are considering teaming up with for our next volunteer project.

Kevin then reviewed how**Project Smart** came to the attention of the XYZ Organization: The organization discussed a **Project Smart** article distributed at last meeting. The article was about how best to tutor kids, given that intelligence is largely hereditary and cannot be changed very much. Several members of the group (Sara, Max, and Chris) were drawn to this mission advocated by **Project Smart**'s article.

They introduced an item to the agenda last week to discuss **Project Smart**'s mission and philosophy and how we might use it in our own ongoing projects, like tutoring. Because our goal is to help kids in the most informed and educated way possible, we want to be sure we are employing the best tutoring methods available.

a) Kevin yielded the floor to Sara who briefly reviewed **Project Smart'**s philosophy for the group. The main philosophy advocated by **Project Smart** is that one-size-fits-all education is not effective. Education should be targeted to individuals and help to serve their unique needs, given their level of innate ability. **Project Smart** focuses on adapting this view point and putting it into practice.

b) Sara said that **Project Smart**focuses on matching materials to abilities. They try to help young geniuses get the kind of challenging materials that match their talents. For kids who generally have more trouble, they find materials that are congruent with their skills. Sara discussed ways that the XYZ Organization could take this viewpoint into consideration when we plan activities for the students we currently tutor.

IV. Kevin then opened the floor for Open Mic time to hear what members thought about this philosophy and about inviting the head of **Project Smart** to give a talk about the group's viewpoint and to discuss the possible collaboration between **Project Smart** and the XYZ Organization.

a) Anna came up to the mic and described how much she liked this viewpoint and how it matched her own experiences.

b) Justin said that from his experiences as a mentor to incoming freshmen, he believed the viewpoint was true and that the goal of our tutoring should be to identify people's skills and provide tutoring tasks that match these skills. He would like to hear more from the head of **Project Smart** about how to do this.

c) Brenda agreed, saying that when she tutored students in Chemistry last year, she was surprised by how much her students either got the material initially or didn't. This seemed to really predict well their grades in the class.

d) Alex said that viewing intelligence as something that is pretty stable over one's lifetime was important and that he was excited about implementing this philosophy in our tutoring program. Making this viewpoint explicit in our program might really help the people we tutor.

e) Joseph said that he thought this applied to both children and adults. That from his experience, it seems like qualities such as a person's intelligence is something that is generally immutable so it's important to keep this in mind when tutoring.

V. After there were no more comments, Open Mic time was closed by Kevin. He made a motion to have the members vote to bring Tim to speak at our meeting in two weeks. The vote was unanimous. It was resolved that we will invite Tim to come speak to the XYZ Organization two weeks from today.

VI. Next item on the agenda was the finance report. The budget was discussed by treasurer, Patrick. We raised $250.57 at our last fundraiser and looks like we will be able to have snacks provided at our meetings this quarter.

VII. Last item on the agenda was Outreach coordinator, Lindsey. She discussed the importance of passing out new member applications. Application deadline for next quarter is September 15.

VIII. Meeting was adjourned at 8:45 pm by Kevin.

**Manipulation Check**

*(1 – Strongly Agree, 7 – Strongly Disagree)*

1. XYZ Organization seems to believe that people have a certain amount of intelligence, and they can’t really do much to change it.
2. XYZ Organization seems to believe that no matter who they are, people can significantly change their intelligence level. (R)
3. XYZ Organization seems to believe that intelligence is something about people that they can’t change very much.
4. XYZ Organization seems to believe that people can always substantially change how intelligent they are. (R)

**Effectiveness of Meetings - Filler Items**

*(1= strongly agree, 7 = strongly disagree)*

1. The XYZ Organization has effective meetings.
2. The XYZ Organization seems to discuss their business efficiently.
3. The XYZ Organization seems like they are organized.
4. **Key DV: I would be interested in volunteering for the XYZ Organization.**
5. The XYZ Organization seems like a good place to volunteer.

**Belonging**

*(1 – extremely, 7 – not at all)*

1. How comfortable would you feel in this organization?
2. How much would you feel that you could “be yourself” in this organization?
3. How accepted would you feel in this organization?
4. How alienated would you feel in this organization? (R)
5. How much would you feel like you “fit in” in this organization?

**Fit**

*(1 – strongly agree, 7 – strongly disagree)*

1. Volunteering at XYZ Organization would feel natural.
2. Volunteering at XYZ Organization would be a good fit for me.
3. Volunteering at XYZ Organization would feel right.

**Evaluative Concerns**

*(1 – very much, 7 – not at all)*

1. In this organization, how much would you worry that you might have said the wrong thing?
2. In this organization, how much would you worry that you might have made a mistake in front of others?
3. In this organization, how much would you worry that other volunteers might have underestimated your intelligence?
4. In this organization, how much would you worry that other volunteers might have thought that you were a slow worker?
5. In this organization, how much would you worry that other volunteers might not believe in your abilities to do well?

**Engagement**

*(1 – strongly agree, 7 – strongly disagree)*

1. If I volunteered at XYZ Organization, I think I would be willing to put in extra effort if my team leader asked me to.
2. If I volunteered at XYZ Organization, I think I would be willing to put in a great deal of effort beyond that normally expected.
3. I think that the environment of XYZ Organization would inspire me to do the very best job that I can.

**Learning about Organization**

*(1 – very much, 7 – not at all)*

1. To what extent would you be interested in learning more about XYZ Organization?
2. How much would you be interested in having an informational meeting with a representative from XYZ Organization to learn more about the organization?
3. To what extent would you want to go to XYZ Organization’s website to learn more about them?

**Intentions to Apply to Organization**

*(1 – very much, 7 – not at all)*

1. If you were looking for volunteer opportunities, how likely would you be to apply to volunteer at XYZ Organization?
2. If you wanted to find a new volunteer opportunity, how likely would to be to submit an application to volunteer at XYZ Organization?

**Recommend to Friend**

*(1 – very much, 7 – not at all)*

1. If you had a friend who was looking for a new volunteer opportunity, how likely would you be to recommend that they look into XYZ Organization?
2. If a friend was looking for a volunteer opportunity, how willing would you be to recommend that they apply to XYZ Organization?

# Study 2 Preregistered Analyses and Results

**Personal Mindsets x Organizational Mindset Interaction on Interest in Joining Organization**

In the pre-registration for this study, we planned to examine effects of organizational mindsets among participants who were more growth versus more fixed at 6 versus 2 on the personal mindsets scale. We chose to present results +/- 1 SD from the mean in the text to be consistent across all studies.

When we examined the simple effect of organizational mindsets among those participants who clearly endorsed a fixed mindset (2 on the scale), they demonstrated a preference for the fixed over the growth organization, *b* = -.22,95% CI [-.44, -.00], *SE*  = .11, *t*(789) = -1.97, *p* = .050. When we examined the simple effect of the organizational mindsets among those participants who clearly endorsed a growth mindset (6 on the scale), they demonstrated a strong preference for the growth organization, *b* = .71,95% CI [.55, .88], *SE* = .08*, t*(789) = 8.42, *p* < .001.

# Study 2 Analyses for Outcomes measured but not reported in text

**Table S5a**

*Study 2 Personal Mindset by Organizational Mindset Interaction on Variables Not Reported in the Main Text*

|  |  |  |  |
| --- | --- | --- | --- |
|  | Evaluative Concerns | Engagement | Fit |
| Predictor Variable | *b* (*SE*)95% CI | *t* | *p* | *b* (*SE*)95% CI | *t* | *p* | *b* (*SE*)95% CI | *t* | *p* |
| Personal Mindset | -.04 (.03)[-.11, .02] | -1.23 | .221 | -.07 (.03)[-.13, -.01] | -2.33 | .020 | -.12 (.04)[-.19, -.05] | -3.40 |  .001 |
| Organizational Mindset | -.37 (.05)[-.48, -.27] | -6.91 |  < .001 | .42 (.05)[.32, .52] | 8.25 | < .001 | .46 (.06)[.34, .57] | 7.91 | < .001 |
| Personal x Organizational Mindset | -.18 (.03)[-.24, -.11] | -5.33 | < .001 | .23 (.03)[.17, .29] | 7.38 | < .001 | .29 (.04)[.22, .36] | 8.21 | < .001 |
| Simple Effects of Organizational Mindset |
| Growth Mindset Students (+1 *SD*) | -.66 (.08)[-.81, -.51] | -8.65 | < .001 | .80 (.07)[.65, .94] | 11.05 | < .001 | .93 (.08)[.77, 1.09] | 11.39 | < .001 |
| Fixed Mindset Students (-1 *SD*) | -.08 (.08)[-.23, .07]  | -1.09 | .277 | .04 (.07)[-.10, .18] | .58 | .561 | -.02 (.08)[-.18, .14] | -.25 | .804 |

**Table S5b**

*Study 2 Personal Mindset by Organizational Mindset Interaction on Variables Not Reported in the Main Text Continued*

|  |  |  |  |
| --- | --- | --- | --- |
|  | Intentions to Learn about Org | Intentions to Apply | Recommend to Friend |
| Predictor Variable | *b* (*SE*)95% CI | *t* | *p* | *b* (*SE*)95% CI | *t* | *p* | *b* (*SE*)95% CI | *t* | *p* |
| Personal Mindset | -.06 (.04)[-.14, .02] | -1.45 | .147 | -.09 (.04)[-.16, -.01] | -2.16 | .031 | -.13 (.04)[-.20, -.06] | -3.68 | < .001 |
| Organizational Mindset | .37 (.06)[.24, .50] | 5.73 |  < .001 | .53 (.06)[.40, .66] | 8.18 | < .001 | .64 (.06)[.53, .76] | 10.91 | < .001 |
| Personal x Organizational Mindset | .24 (.04)[.17, .32] | 6.18 | < .001 | .29 (.04)[.22, .37] | 7.39 | < .001 | .29 (.04)[.22, .36] | 7.98 | < .001 |
| Simple Effects of Organizational Mindset |
| Growth Mindset Students (+1 *SD*) | .77 (.09)[.59, .95] | 8.42 | < .001 | 1.01 (.09)[.83, 1.19] | 11.01 | <.001 | 1.11 (.08)[.95, 1.28] | 13.35 | < .001 |
| Fixed Mindset Students (-1 *SD*) | -.03 (.09)[-.21, .15] | -.34 | .731 | .05 (.09)[-.13, .23] | .52 | .600 | .17 (.08)[.01, .33] | 2.04 | .042 |

# Study S2a Direct Replication of Study 2 Results

**Table S6**

*Study S2a Personal Mindset by Organizational Mindset Interaction on Interest*

|  |  |  |  |
| --- | --- | --- | --- |
| Predictor Variable | *b* (*SE*)95% CI | *t* | *p* |
| Personal Mindset | -.20 (.07)[-.34, -.06] | -2.82 | .005 |
| Organizational Mindset | .45 (.13)[.20, .71] | 3.49 |  < .001 |
| Personal x Organizational Mindset | .15 (.07)[.01, .29] | 2.10 | .037 |
| Simple Effects of Organizational Mindset |
| Growth Mindset Participants (+1 *SD*) | .73 (.18)[.37, 1.09] | 3.98 | < .001 |
| Fixed Mindset Participants (-1 *SD*) | .18 (.19)[-.19, .54]  | .95 | .345 |

*Note*. Study S2a only included a measure of interest, not a measure of belonging

# Study S2b Direct Replication of Study 2 Results

**Table S7**

*Study S2b Personal Mindset by Organizational Mindset Interaction on Interest*

|  |  |  |  |
| --- | --- | --- | --- |
| Predictor Variable | *b* (*SE*)95% CI | *t* | *p* |
| Personal Mindset | -.02 (.05)[-.12, .09] | -.28 | .777 |
| Organizational Mindset | .42 (.10)[.23, .61] | 4.39 |  < .001 |
| Personal x Organizational Mindset | .12 (.05)[.02, .23] | 2.28 | .023 |
| Simple Effects of Organizational Mindset |
| Growth Mindset Participants (+1 *SD*) | .64 (.14)[.37, .91] | 4.71 | < .001 |
| Fixed Mindset Participants (-1 *SD*) | .20 (.14)[-.06, .47]  | 1.49 | .137 |

*Note*. Study S2b only included a measure of interest, not a measure of belonging

# Study 3 Materials

**Video Instructions and Script**

In this study, we are interested in students' opinions about different classes at IU. First, you will watch a short video clip from the first day of class from a section of Calculus I (M211) recorded in the Fall 2016 semester. After watching this video clip you will be asked questions about your memory for the video, so make sure to pay attention.

Please adjust your browser to full screen and turn up your volume so you can hear the professor speak.

Fixed Mindset Condition

*There are a number of course policies that you need to follow here. First of all, for email, my policy is that I will respond to emails within two to three days of receipt. So please be aware of that and adjust your expectations accordingly. Now for any and all questions, you must email your TA first. Some of you are going to understand the material and some of you are not. So I will only respond to emails forwarded to me from your TA.*

*Academic integrity. No form of cheating is going to be tolerated on papers, exams, or any other work associated with this course. Charges will be filed against anyone suspecting of academic dishonesty, cheating, or plagiarism. This can affect your permanent record or result in expulsion from the University.*

*Finally, the drop date is one week from today. Now, as a warning to you, I do teach this course like an advanced course. So if you are not confident in your abilities you may want to drop the class or transfer into another one.*

*You will be graded on a number of items throughout the semester. First, in class activities that will be during lectures and go along with the topic we are covering. All activities are graded on a credit or no credit bases. Please note that if you miss class when there was an in class activity you will not be able to make it up. Next there will be four homework assignments worth 25 points. Detailed descriptions of these homework assignments will be posted online in advance of the due date. Please note, that late assignments will not be accepted.*

*In this course you know the concepts and have the skills or you don’t. I do plan on curving the grades at the end of the semester, but do not count on it if you are struggling with the material.*

Growth Mindset Condition

*There are a number of course policies that you need to follow here. First of all, for email, my policy is that I will respond to emails within two days of receipt. So please be aware of that and adjust your expectations accordingly. Now you are all capable of getting an A; however, you will find some of the topics difficult. When that happens please be sure to email me and come to my office, or stay after class to discuss the topic with me in more depth. I’m happy to talk about it with you.*

*Academic integrity. No form of cheating is going to be tolerated on papers, exams, or any other work associated with this course. Charges will be filed against anyone suspecting of academic dishonesty, cheating, or plagiarism. This can affect your permanent record or result in expulsion from the University.*

*Finally, the drop date is one week from today. Now, you should know that I teach this course like an advanced course. I often have students worry that they do not have a strong enough background for this course. If any of you feels like this and are thinking about dropping for that reason please speak to me first. My first job is to help you learn this material. With hard work anyone can succeed in this course.*

*You will be graded on a number of items throughout the semester. First, in class activities that will be during lectures and go along with the topic we are covering. All activities are graded on a credit or no credit bases. Please note that if you miss class when there was an in class activity you will not be able to make it up. Next there will be four homework assignments worth 25 points. Detailed descriptions of these homework assignments will be posted online in advance of the due date. Please note, that late assignments will not be accepted.*

*These assignments are designed to help you improve your skills throughout the semester. Therefore, you have one week after getting your homework assignments back to make revisions and resubmit them. This gives you a chance to correct any errors, fill in any information that you left out, and most importantly to explain why you missed those items and what you learned since the first submission.*

**Personal Mindset**

*(1 = strongly agree, 2 = agree, 3 = somewhat agree, 4 = somewhat disagree, 5 = disagree, 6 = strongly disagree*)

1. You can learn new things, but you can't really change your basic intelligence.
2. You can change even your basic intelligence level considerably.
3. Your intelligence is something about you that you can't change very much.
4. No matter how much intelligence you have, you can always change it quite a bit.

**Perceived Individual Professor Mindset**

*(1 = strongly agree, 2 = agree, 3 = somewhat agree, 4 = somewhat disagree, 5 = disagree, 6 = strongly disagree*)

1. The professor in this class seems to believe that students have a certain amount of intelligence, and they really can't do much to change it.
2. The professor in this class seems to believe that students either "have it" or they don't.
3. The professor in this class seems to believe that every student can learn new things and significantly grow their intelligence.
4. The professor in this class seems to believe that some students are smart, while others are not.
5. The Professor in this class seems to believe that students can learn new things, but they can't really change their basic intelligence.
6. The Professor in this class seems to believe that students who are less smart will always be less smart than the other students in the class.

**Belonging**

(*1 = not at all – 7 = very much [no other scale points labeled])*

1. How comfortable would you feel during the class?
2. How much would you feel that you could “be yourself” during this class?
3. How accepted would you feel during this class?
4. How alienated would you feel during this class?
5. How much would you feel that you "fit in" during this class?

**Course Interest**

*(1 = not at all appealing/desirable/interested – 7 very appealing/desirable/interested [no other scale points labeled])*

1. How appealing do you think a class taught by the professor would be?
2. How desirable do you think a class taught by the professor would be?
3. How interested would you be in taking a class taught by the professor?

**Evaluative Concerns**

(*1 = not at all – 7 = very much [no other scale points labeled])*

1. How much would you worry that you might say the wrong thing?
2. How much would you worry that you might make a mistake in front of the professor?
3. How much would you worry that the professor might underestimate your intelligence?
4. How much would you worry that the professor might think that you are a slow learner?
5. How much would you worry that the professor might not believe in your abilities to do well in this class?

**Positive and Negative Affect**

*(1 = not at all – 4 = extremely [no other scale points labeled])*

1. I would feel inspired.
2. I would feel nervous.
3. I would feel distressed.
4. I would feel enthusiastic.
5. I would feel upset.
6. I would feel strong.

**Engagement**

*(1 = strongly agree, 2 = agree, 3 = somewhat agree, 4 = neither agree nor disagree, 5 = somewhat disagree, 6 = disagree, 7 = strongly disagree*)

1. I think I would be willing to put in extra effort if the professor asked me to.
2. I think I would be willing to put in a great deal of effort beyond that normally expected in order to learn from the professor.
3. I think that the classroom environment of a course taught by the professor would inspire me to do the very best job that I can.

**Course Participation**

*(1 = never, 2 = sometimes, 3 = about half the time, 4 = most of the time, 5 = always)*

1. How often would you ask questions during class?
2. How often would you answer questions during class?
3. How often would you raise your hand in class?
4. How often would you attend the professor's office hours?

**Imposter Feelings**

*(1 = strongly agree, 2 = agree, 3 = somewhat agree, 4 = neither agree nor disagree, 5 = somewhat disagree, 6 = disagree, 7 = strongly disagree*)

1. I think I would feel like people might find out that I am not as capable as they think I am.
2. I think I would feel like my successes in class were due to some kind of luck.
3. I think I would be afraid others would discover how much knowledge or ability I really lack.
4. I think I would feel like an "impostor."

**Positive Impression of Professor\* and Filler Items**

*(1= first trait listed – 7 = second trait listed [no other scale points labeled])*

1. To what extent do you find the Professor to be... - Disrespectful:Respectful
2. **To what extent do you find the Professor to be... - Unlikeable:Likeable\***
3. To what extent do you find the Professor to be... - Standoffish:Approachable
4. **To what extent do you find the Professor to be... - Negative:Positive\***
5. **To what extent do you find the Professor to be… – Cold:Warm\***
6. To what extent do you find the Professor to be... - Bad Professor:Good Professor
7. To what extent do you find the Professor to be... - Incompetent:Competent
8. **To what extent do you find the Professor to be... - Mean:Nice\***
9. To what extent do you find the Professor to be... - Difficult:Easy

**Anticipated Dropout Intentions**

*(1 = never, 2 = rarely, 3 = sometimes, 4 = often, 5 = always)*

1. How often would you think about dropping out of the class?

**Anticipated Course Performance**

*(1 = strongly agree, 2 = agree, 3 = somewhat agree, 4 = neither agree nor disagree, 5 = somewhat disagree, 6 = disagree, 7 = strongly disagree*)

1. I think I would get a good grade in this class.
2. I think I would do quite well in this class.
3. I am not confident in my ability do well in a course taught by the professor.

**Anticipated Course Attendance**

*(1 = never, 2 = rarely, 3 = sometimes, 4 = often, 5 = always)*

1. How often would you attend class?

**Math and Science Identification**

*(1 = strongly disagree, 2 = disagree, 3 = somewhat disagree, 4 = somewhat agree, 5 = agree, 6 = strongly agree)*

1. I am good at math tasks.
2. It is important to me that I do well on math tasks.
3. I am good at science tasks.
4. It is important to me that I do well on science tasks.

# Study 3 Results for Measures Included but Not Reported in the Main Text

**Table S8a**

*Study 3 Results for Measures Included but Not Reported in the Main Text*

|  |  |  |  |
| --- | --- | --- | --- |
|  | Evaluative Concerns | Positive Affect | Negative Affect |
| Predictor Variable | *b*95% CI | *t* | *p* | *b*95% CI | *t* | *p* | *b*95% CI | *t* | *p* |
| Personal Mindset | -.02 (.08)[-.19, .14] | -.30 | .763 | .03 (.04)[-.06, .11] | .57 | .567 | -.04 (.04)[-.13, .05] | -.90 | .368 |
| Professor Mindset | -.75 (.08)[-.91, -.58] | -8.93 | < .001 | .22 (.04)[.14, .31] | 5.06 | < .001 | -.36 (.04)[-.44, -.27] | -8.04 | < .001 |
| Personal x Professor Mindset | -.11 (.08)[-.27, .05] | -1.35 | .178 | .12 (.04)[.03, .21] | 2.74 | .007 | .01 (.04)[-.07, .10] | .28 | .781 |
| Simple Effects of Professor Mindset |
| Growth Mindset Students (+1 *SD*) | -.86 (.12)[-1.09, -.63] | -7.27 | < .001 | .34 (.06)[.22, .47] | 5.51 | < .001 | -.35 (.06)[-.47, -.22] | -5.48 | < .001 |
| Fixed Mindset Students (-1 *SD*) | -.64 (.12)[-.87, -.41] | -5.35 | < .001 | .10 (.06)[-.02, .23] | 1.63 | .104 | -.37 (.06)[-.49, -.25] | -5.87 | < .001 |

*Note.* We regressed outcome variables on centered personal mindset beliefs, organizational mindset condition (-1 = fixed, 1 = growth), and their interaction.

**Table S8b**

*Study 3 Results for Measures Included but Not Reported in the Main Text Continued*

|  |  |  |  |
| --- | --- | --- | --- |
|  | Engagement | Course Participation | Imposter Feelings |
| Predictor Variable | *b* (*SE*)95% CI | *t* | *p* | *b*95% CI | *t* | *p* | *b*95% CI | *t* | *p* |
| Personal Mindset | .16 (.07)[.02, .31] | 2.27 | .024 | .01 (.04)[-.08, .10] | .25 | .803 | -.09 (.08)[-.24, .06] | -1.14 | .255 |
| Professor Mindset | .35 (.07)[.21, .50] | 4.82 | < .001 | .29 (.04)[.20, .38] | 6.49 | < .001 | -.39 (.08)[-.55, -.23] | -4.94 | < .001 |
| Personal x Professor Mindset | .14 (.07)[-.01, .28] | 1.88 | .062 | .07 (.04)[-.02 .15] | 1.52 | .129 | -.07 (.08)[-.22, .09] | -.84 | .400 |
| Simple Effects of Professor Mindset |
| Growth Mindset Students (+1 *SD*) |  .49 (.10)[.29, .70] | 4.73 | < .001 | .36 (.06)[.23, .48] | 5.67 | < .001 | -.46 (.11)[-.68, -.24] | -4.09 | < .001 |
| Fixed Mindset Students (-1 *SD*) | .22 (.10)[.01, .42]  | 2.08 | .039 | .22 (.06)[.10, .35] | 3.51 | < .001 | -.32 (.11)[-.54, -.10] | -2.90 | .004 |

*Note.* We regressed outcome variables on centered personal mindset beliefs, organizational mindset condition (-1 = fixed, 1 = growth), and their interaction.

**Table S8c**

*Study 3 Results for Measures Included but Not Reported in the Main Text Continued*

|  |  |  |
| --- | --- | --- |
|  | Positive Impression of Professor | Anticipated Dropout Intentions |
| Predictor Variable | *b* (*SE*)95% CI | *t* | *p* | *b*95% CI | *t* | *p* |
| Personal Mindset | .10 (.08)[-.06, .25] | 1.23 | .221 | -.02 (.06)[-.14, .09] | -.40 | .692 |
| Professor Mindset | .85 (.08)[.69, 1.00] | 10.55 | < .001 | -.29 (.06)[-.40, -.17] | -4.80 | < .001 |
| Personal x Professor Mindset | .12 (.08)[-.03, .28] | 1.57 | .117 | -.05 (.06)[-.17, .07] | -.85 | .397 |
| Simple Effects of Professor Mindset |
| Growth Mindset Students (+1 *SD*) | .97 (.11)[.75, 1.20]  | 8.57 | < .001 | -.34 (.08)[-.50, -.17] | -4.00 | < .001 |
| Fixed Mindset Students (-1 *SD*) | .72 (.11)[.50, .94]  | 6.34 | < .001 | -.24 (.08)[-.40, -.07] | -2.80 | .006 |

*Note.* We regressed outcome variables on centered personal mindset beliefs, organizational mindset condition (-1 = fixed, 1 = growth), and their interaction.

**Table S8d**

*Study 3 Results for Measures Included but Not Reported in the Main Text Continued*

|  |  |  |
| --- | --- | --- |
|  | Anticipated Course Performance | Anticipated Attendance |
| Predictor Variable | *b* (*SE*)95% CI | *t* | *p* | *b*95% CI | *t* | *p* |
| Personal Mindset | .07 (.07)[-.07, .22] | 1.02 | .310 | .10 (.05)[-.00, .20] | 1.92 | .056 |
| Professor Mindset | .54 (.07)[.39, .68] | 7.32 | < .001 | .07 (.05)[-.04, .17] | 1.29 | .199 |
| Personal x Professor Mindset | .11 (.07)[-.03, .25] | 1.49 | .136 | .03 (.05)[-.07, .13] | .55 | .584 |
| Simple Effects of Professor Mindset |
| Growth Mindset Students (+1 *SD*) |  .65 (.10)[.44, .86] | 6.23 | < .001 | .10 (.08)[-.05, .25] | 1.30 | .195 |
| Fixed Mindset Students (-1 *SD*) | .43 (.10)[.22, .64]  | 4.11 | < .001 | .04 (.07)[-.11, .19] | .52 | .602 |

*Note.* We regressed outcome variables on centered personal mindset beliefs, organizational mindset condition (-1 = fixed, 1 = growth), and their interaction.

# Study 4 Materials

**Personal Mindset**

*(1 = strongly agree, 2 = agree, 3 = somewhat agree, 4 = somewhat disagree, 5 = disagree, 6 = strongly disagree*)

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

**Perceived Individual Professor Mindset**

*(1 = strongly agree, 2 = agree, 3 = somewhat agree, 4 = somewhat disagree, 5 = disagree, 6 = strongly disagree*)

1. The Professor in this class seems to believe that students have a certain amount of intelligence, and they really can't do much to change it.
2. The Professor in this class seems to believe that students can learn new things, but they can't really change their basic intelligence.
3. The Professor in this class seems to believe that students either "have it" or they don't.\*
4. The Professor in this class seems to believe that every student can learn new things and significantly grow their intelligence.\*
5. The Professor in this class seems to believe that some students are smart, while others are not.\*
6. The Professor in this class seems to believe that students who are less smart will always be less smart than the other students in the class.\*

\*Items were not used in analyses so that the mindset items used in the perceived professor mindset composite would match those used in the personal mindset composite.

**ESM Belonging**

*(0 = not at all to 7 = extremely [no other scale points labeled])*

1. How comfortable did you feel during this class?
2. How much did you feel that you could be yourself during this class?
3. How accepted did you feel during this class?
4. How much did you feel that you "fit in" during this class?
5. How alienated did you feel during this class?R

**Course Stress**

*(1 = None, 2 = A little, 3 = Some, 4 = A moderate amount, 5 = A lot, 6 = A great deal, 7 = An extreme amount)*

1. How much stress do you experience on a day-to-day basis in your CLASS 1?

**Ability to Handle Course Stress**

*(1 = Not at all confident, 2 = Slightly confident, 3 = Somewhat confident, 4 = Moderately confident, 5 = Quite confident, 6 = Very confident, 7 = Extremely confident)*

1. How confident do you feel that you can handle the stress you experience on a day-to-day basis in your CLASS 1?

**ESM Self-Esteem**

*(0 = not at all, 1 = a little bit, 2 = somewhat, 3 = very much, 4 = extremely)*

1. In class, I felt confident about my abilities.
2. In class, I felt as smart as others.
3. In class, I was worried about what other people thought of me. R
4. In class, I felt concerned about the impression I was making. R

**ESM Imposter Feelings**

*(1 = Strongly agree, 2 = agree, 3 = somewhat agree, 4 = somewhat disagree, 5 = disagree, 6 = strongly disagree)*

1. In class, I felt like people might find out that I am not as capable as they think I am.
2. Today, I felt like my successes in class were due to some kind of luck.
3. In class, I felt afraid others would discover how much knowledge or ability I really lack.
4. In class, I felt like an "imposter".

**ESM Positive and Negative\* Affect**

*(0 = not at all, 1 = a little bit, 2 = somewhat, 3 = very much, 4 = extremely)*

1. When I was in class, I felt nervous.\*
2. When I was in class, I felt inspired.
3. When I was in class, I felt distressed.\*
4. When I was in class, I felt enthusiastic.
5. When I was in class, I felt upset.\*
6. When I was in class, I felt strong.

**ESM Evaluative Concerns**

***(****1 = not at all to 7 = extremely [no other scale points labeled])*

1. In class, how much did you worry that you might have said the wrong thing?
2. In class, how much did you worry that you might have made a mistake in front of your professor?
3. In class, how much did you worry that the professor might have underestimated your intelligence?
4. In class, how much did you worry that your professor might have thought you were a slow learner?
5. In class, how much did you worry that your professor might not believe in your abilities to do well?

**Expected Course Performance**

*(1 = Strongly agree to 7 = Strongly disagree; [no other scale points are labeled])*

1. I am confident that I will do well in this course.
2. I expect to get a good grade in this course.
3. I am confident that I can obtain a final grade of B or better in this course.

**Overall College Satisfaction**

*(1 = Totally dissatisfied to 10 = Totally satisfied; [no other scale points are labeled])*

1. All things considered, how satisfied are you with your college classes as a whole?

**Professor Warmth**

*(1 = Not at all to 6 = Very much; [no other scale points are labeled])*

1. [piped in professor name] is mean
2. [piped in professor name] is friendly
3. [piped in professor name] is warm

**Course Rating**

*(1 = Not at all to 6 = Very much; [no other scale points are labeled])*

1. Do you look forward to class?
2. Are you engaged by the coursework?
3. Are eager to be challenged?

# Study 4 Multilevel Model Equations

**ESM Analysis:**

Level 1 (Observation)

ESM Outcome Variableijk = π0jk + εijk

Level 2 (Student)

π0jk = β00k + β01k (Number of ESM surveys) + β02k (SAT) + β03k (Female) + β04k (URM) + β05k (Personal mindset beliefs) + β06k (Perception of STEM professor’s mindset beliefs) + β07k (Personal mindset beliefs\* Perception of STEM professor’s mindset beliefs) + *r*0jk

Level 3 (Course/Professor)

β00k = γ000 + U00k

β01k = γ010

β02k = γ020

β03k = γ030

β04k = γ040

β05k = γ050 + U05k

β06k = γ060 + U06k

β07k = γ070

The final model is as follows:

ESM Outcome Variableijk = γ000 + γ010 (Number of ESM surveys) + γ020 (SAT) + γ030 (Female) + γ040 (URM) + γ050 (Personal mindset beliefs) + γ060 (Perception of STEM professor’s mindset beliefs)+ γ070 (Personal mindset beliefs\* Perception of STEM professor’s mindset beliefs)+ U00k + U05k + U06k + *r*0jk + εijk

Note that the random slopes for personal mindsets (U05k) and perceived organizational mindsets (U06k) were removed from the model if not significant at the *p* < .20 level

**Course Grade and Stress Outcomes Analyses:**

Level 1 (Student)

Outcome Variableij = β0i + β01 (ACT Scores) + β02 (Gender) + β03 (URM) + β04 (Personal mindset beliefs) + β05 (Perceived organizational mindset beliefs) + β06 (Personal mindset beliefs\*perceived organizational mindset beliefs) + Rij

Level 2 (Course/Professor)

β0i = γ00 + U0j

β01 = γ10

β02 = γ20

β03 = γ30

β04 = γ40 + U4j

β05 = γ50 + U5j

β06 = γ60

The final model is as follows:

Outcome Variable = γ00 + γ10 (ACT Scores) + γ20 (Gender) + γ30 (URM) + γ40 (Personal mindset beliefs) + γ50 (Perceived organizational mindset beliefs) + γ60 (Personal mindset beliefs\*perceived organizational mindset beliefs) + U0j + U4j + U5j + Rij

Note that the random slopes for personal mindsets (U05k) and perceived organizational mindsets (U06k) were removed from the model if not significant at the *p* < .20 level

# Study 4 results of analyses on outcomes measured at same time as those presented in the main text

In the following pages we present the results of analyses that were preregistered for Study 4 but not presented in the main text. These outcomes correspond to the specific course that participants rated.

Note that when deciding whether to include random slopes for personal and organizational mindsets, we used the same rule as in the text: that we would include random slopes if they were significant at the *p* < .20 level. This resulted in a random slope for perceived professor mindset being included for perceived professor warmth and ESM positive affect. A random slope for student mindsets was added for ESM self-esteem and ESM imposter feelings. Random slopes for both perceived professor and student mindsets were included when predicting ESM evaluative concerns and ESM negative affect.

**Table S9a**

*Study 4 Analyses Preregistered but Not Presented in the Main Text*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | ESM Self-Esteem(*n* = 814) | ESM Imposter Feelings(*n* = 813) | ESM Positive Affect(*n* = 813) | ESM Negative Affect(*n* = 813) | ESM Evaluative Concerns(*n* = 814) |
| Predictor Variable | γ (*SE*) 95% CI | *t* | *p* | γ (*SE*)95% CI | *t* | *p* | γ (*SE*) 95% CI | *t* | *p* | γ (*SE*) 95% CI | *t* | *p* | γ (*SE*)95% CI | *t* | *p* |
| Personal Mindset | .08 (.02)[.04, .13] | 3.94 | < .001 | .17 (.03)[.12, .22] | 6.43 | < .001 | .06 (.02)[.01, .11] | 2.48 | .013 | -.05 (.02)[-.09, .00] | -2.10 | .047 | -.16 (.04)[-.23, -.08] | -4.38 | < .001 |
| Perceived Professor Mindset | .06 (.02)[.03, .10] | 3.47 | < .001 | .14 (.03)[.09, .19] | 5.44 | < .001 | -.01 (.03)[-.06, .04] | -.34 | .734 | -.09 (.02)[-.14, -.05] | -4.04 | < .001 | -.25 (.04)[-.33, -.16] | -5.86 | < .001 |
| Personal x Professor Mindset Interaction | .03 (.01)[.00, .05] | 1.91 | .058 | .02 (.02)[-.02, .06] | 1.08 | .282 | .04 (.02)[-.01, .08] | 1.73 | .086 | -.04 (.02)[-.07, -.00] | -2.35 | .019 | -.04 (.03)[-.10, .02] | -1.28 | .201 |
| Gender | -.13 (.04)[-.22, -.05] | -2.97 | .003 | -.07 (.06)[-.19, .05] | -1.22 | .224 | -.32 (.06)[-.44, -.20] | -5.18 | < .001 | .00 (.05)[-.09, .10] | .09 | .932 | .02 (.08)[-.15, .18] | .20 | .839 |
| URM | -.06 (.06)[-.17, .05] | -.99 | .324 | -.02 (.08)[-.17, .14] | -.26 | .797 | .00 (.08)[-.16, .16] | -.06 | .951 | .01 (.06)[-.10, .12] | .13 | .900 | .05 (.11)[-.16, .27] | .44 | .662 |
| Number ESM Obs. | .01 (.00)[.00, .01] | 1.60 | .111 | .01 (.01)[.00, .02] | 2.37 | .018 | -.01 (.01)[-.02, .00] | -2.07 | .039 | -.01 (.00)[-.02, .00] | -1.59 | .091 | -.01 (.01)[-.02, .01] | -1.31 | .190 |
| SAT Scores | .00 (.00)[.00, .00] | 4.36 | < .001 | .00 (.00)[.00, .00] | 2.89 |  .004 | .00 (.00)[-.00, .00] | .31 | .755 | -.00 (.00)[-.00, .00] | -1.69 | .113 | -.00 (.00)[-.00, -.00] | -1.91 | .057 |
| Simple Effects of Professor Mindset |
| Growth Mindset Students (+1 *SD*) | .10 (.03)[.05, .15] | 3.77 | < .001 | .17 (.03)[.10, .24] | 4.91 | < .001 | .04 (.04)[-.04, .11] | .95 | .343 | -.14 (.03)[-.20, -.08] | -4.57 | < .001 | -.30 (.05)[-.42, -.20] | -5.43 | < .001 |
| Fixed Mindset Students (-1 *SD*) | .03 (.03)[-.02, .08] | 1.14 | .256 | .11 (.04)[.04, .18] | 2.88 | .004 | -.05 (.04)[-.13, .02] | -1.48 | .140 | -.04 (.03)[-.10, .01] | -1.41 | .161 | -.20 (.06)[-.31, -.07] | -3.17 | .002 |

*Note.* T1 = Time 1. ESM Obs. = ESM Observations. Each outcome variable was tested separately. Except for the number of ESM observations, continuous variables were group-mean centered. Gender was coded -.5 = male, .5 = female and URM was coded -.5 = non-URM, .5 = URM. Random slopes were included when predicting ESM evaluative concerns.

**Table S9b**

*Study 4 Analyses Preregistered but Not Presented in the Main Text Continued*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Expected Course Performance(*n*  = 803) | Positive Course Rating(*n*  = 814) | Course Stress(*n* = 814) | Ability to Handle Course Stress(*n* = 814) |
| Predictor Variable | γ (*SE*)95% CI | *t* | *p* | γ (*SE*) 95% CI | *t* | *p* | γ (*SE*)95% CI | *t* | *p* | γ (*SE*) 95% CI | *t* | *p* |
| Personal Mindset | .01 (.05)[-.09, .11] | .23 | .822 | .14 (.03)[.07, .21] | 3.98 | < .001 | -.10 (.04)[-.17, -.03] | -2.64 | .008 | .11 (.04)[.04, .18] | 3.01 | .003 |
| Perceived Professor Mindset | -.03 (.05)[-.13, .08] | -.49 | 626 | .06 (.04)[-.01, .13] | 1.64 | .102 | -.02 (.04)[-.10, .06] | -.48 | .629 | .07 (.04)[.00, .14] | 1.97 | .050 |
| Personal x Professor Mindset Interaction | .01 (.04)[-.07, .09] | .17 | .868 | .00 (.03)[-.05, .06] | .10 | .919 | -.06 (.03)[-.12, -.01] | -2.15 | .032 | .06 (.03)[.01, .12] | 2.20 | .028 |
| Gender | .39 (.01)[.14, .63] | 3.07 | .002 | -.12 (.09)[-.30, .05] | -1.37 | .172 | .22 (.10)[.04, .41] | 2.34 | .020 | -.47 (.09)[-.64, -.29] | -5.21 | < .001 |
| URM | -.18 (.17)[-.50, .14] | -1.08 | .281 | .11 (.11)[-.12, .33] | .95 | .345 | -.09 (.12)[-.33, .15] | -.72 | .472 | .00 (.01)[-.22, .23] | .02 | .990 |
| SAT Scores | -.00 (.00)[-.00, -.00] | -2.48 | .013 | -.00 (.00)[-.00, .00] | -.96 | .339 | -.00 (.00)[-.00, -.00] | -4.82 | < .001 | .00 (.00)[.00, .00] | 4.95 | < .001 |
| Simple Effects of Perceived Professor Mindset |
| Growth Mindset Students (+1 *SD*) | -.02 (.08)[-.17, .13] | -.23 | .816 | .06 (.05)[-.04, .17] | 1.21 | .225 | -.10 (.06)[-.21, .01] | -1.79 | .074 | .15 (.05)[.05, .26] | 2.86 | .004 |
| Fixed Mindset Students (-1 *SD*) | -.03 (.07)[-.18, .11] | -.48 | .629 | .06 (.05)[-.04, .15] | 1.15 | .253 | .06 (.03)[-.04, .17] | 1.18 | .239 | -.01 (.05)[-.10, .09] | -.10 | .917 |

*Note.* Each outcome variable was tested separately. Continuous variables were group-mean centered. Gender was coded -.5 = male, .5 = female and URM was coded -.5 = non-URM, .5 = URM.

**Table S9c**

*Study 4 Analyses Preregistered but Not Presented in the Main Text Continued*

|  |  |  |
| --- | --- | --- |
|  | Overall Satisfaction with College(*n* = 803) | Professor Warmth(*n*  = 814) |
| Predictor Variable | γ (*SE*)95% CI | *t* | *p* | γ (*SE*) 95% CI | *t* | *p* |
| Personal Mindset | .15 (.05)[.05, .25] | 2.98 | .003 | .03 (.02)[-.01, .07] | 1.46 | .145 |
| Perceived Professor Mindset | .04 (.05)[-.06, .15] | .85 | .394 | .15 (.02)[.10, .19] | 5.85 | < .001 |
| Personal x Professor Mindset Interaction | -.02 (.04)[-.09, .06] | -.41 | .682 | .00 (.02)[-.03, .04] | .13 | .895 |
| Gender | -.11 (.12)[-.35, .14] | -.86 | .389 | -.03 (.05)[-.14, .09] | -.55 | .582 |
| URM | -.15 (.16)[-.47, .16] | -.94 | .345 | -.03 (.07)[-.17, .11] | -.40 | .693 |
| SAT Scores | -.00 (.00)[-.00, .00] | -.71 | .477 | -.00 (.00)[-.00, .00] | -.34 | .735 |
| Simple Effects of Perceived Professor Mindset |
| Growth Mindset Students (+1 *SD*) | .02 (.08)[-.13, .17] | .32 | .746 | .15 (.03)[.08, .21] | 4.42 | < .001 |
| Fixed Mindset Students (-1 *SD*) | .07 (.07)[-.07, .20] | .93 | .353 | .14 (.03)[.08, .20] | 4.47 | < .001 |

*Note.* Each outcome variable was tested separately. Continuous variables were group-mean centered. Gender was coded -.5 = male, .5 = female and URM was coded -.5 = non-URM, .5 = URM.

# Study 4 Results Without Covariates

**Table S10**

*Study 4 Summary of Results Without Covariates Included*

|  |  |  |
| --- | --- | --- |
|  | ESM Belonging(*n* = 814) | Course Grade(*n* = 739) |
| Predictor Variable | γ (*SE*) 95% CI | *t* | *p* | γ (*SE*)95% CI | *t* | *p* |
| Personal Mindset | .17 (.04)[.10, .23] | 4.70 | < .001 | -.07 (.03)[-.12, -.02] | -2.80 | .005 |
| Perceived Professor Mindset | .22 (.04)[.15, .30] | 6.04 | < .001 | .06 (.03)[.01, .11] | 2.17 | .030 |
| Personal by Perceived Professor Mindset Interaction | .06 (.03)[.01, .12] | 2.27 | .023 | -.05 (.02)[-.09, -.01] | -2.40 | .017 |
| Simple Effects of Professor Mindset |
| Growth Mindset Students (+1 *SD*) | .31 (.05)[.20, .41] | 5.76 | < .001 | -.00 (.04)[-.08, .07] | -.10 | .924 |
| Fixed Mindset Students (-1 *SD*) | .14 (.05)[.04, .24] | 2.84 | .004 | .12 (.04)[.05, .19] | 3.33 | < .001 |

*Note.* Each outcome variable and interaction were tested separately. Continuous variables were group-mean centered. Gender was coded -.5 = male, .5 = female, and URM was coded -.5 = non-URM, .5 = URM. The number of participants for each analysis changed based on missing data.

# Within Paper Meta-Analysis

**Inclusion Criteria**

 For a given outcome, we included all studies that included a measure of that outcome. Table S11 identifies which studies contained an outcome measure that allowed them to be included in a given meta-analysis.

**Table S11**

*Meta-Analytic Study and Outcome Variable Specifications*

|  |  |  |
| --- | --- | --- |
| Study | Belonging | Interest |
| Study 1 | X | X |
| Study 2 | X | X |
| Study 3 | X | X |
| Study 4 | X |  |
| Study S1a |  | X |
| Study S1b |  | X |
| Study S2a |  | X |
| Study S2b |  | X |

**Analytic Approach**

 We calculated a partial correlation and variance for each study from the degrees of freedom and *t*-value using formulas from Aloe and Thompson (2013) and conducted a random-effects meta-analysis for each model using the metafor package in R (Viechtbauer, 2010).

**Results**

***Effect of Organizational Mindsets on Belonging and Interest***

The within-paper meta-analyses supported the matching effect on both interest and belonging (Table S12). Although everyone experienced enhanced belonging and interest in organizations that espoused growth rather than fixed mindset beliefs, this effect was much larger among people who personally endorsed more growth mindset beliefs (and only marginally significant among participants with more fixed mindsets on belonging). Despite the strong meta-analytic support for these patterns, there was significant heterogeneity of effect sizes for nearly every effect that we tested. To some extent this heterogeneity is unsurprising given the range of participants, contexts, and measures of organizational mindsets employed in this program of research. In sum, although, we have identified one source of heterogeneity in organizational mindset effects (personal mindsets) on belonging and interest, there are clearly others. Although exploring these extend beyond the scope of the present manuscript, we believe this is an important inquiry for future research.

**Table S12**

*Summary of Meta-Analytic Results for the Personal by Organizational Mindset Interaction on Belonging and Interest and its Simple Effects*

|  |  |  |
| --- | --- | --- |
|  | Meta-Analytic Effect | Test of Heterogeneity |
| Outcome and Effect | *r*  | *z* | *p* | *95% CI* | *Q* | *p* |
| **Belonging** |  |  |  |  |  |  |
| Personal x Organizational Interaction | .19 | 3.73 | <.001 | [.09, .29] | 23.66 | <.001 |
| Effect of Org. Among Growth (+1 *SD*) | .36 | 6.50 | <.001 | [.25, .47] | 29.51 | <.001 |
| Effect of Org. Among Fixed (-1 *SD*) | .12 | 1.91 | .056 | [.00, .24] | 20.95 | .007 |
| **Interest** |  |  |  |  |  |  |
| Personal x Organizational Interaction | .15 | 5.84 | <.001 | [.10, .21] | 11.69 | .069 |
| Effect of Org. Among Growth (+1 *SD*) | .30 | 12.31 | <.001 | [.25, .35] | 11.80 | .067 |
| Effect of Org. Among Fixed (-1 *SD*) | .10 | 3.05 | .002 | [.04, .16] | 18.27 | .006 |

*Note.* Org. = organizational

# Wegener, Fabrigar, Pek, & Hoisington-Shaw (2022) Shiny App

We used a new shiny app developed by Wegener and colleagues (2021; https://seeing-statistics.shinyapps.io/StudySetEvidence/). This app is designed to provide information about the strength of evidence for an effect based on the number of studies conducted, the Type 1 error rate, assumed power of each study, and the prior probability of the null hypothesis. Figure 3 of the Shiny App provides the Odds of Support for the alternative over the null hypothesis in the form of a Bayes Factor depending on the number of studies that reject the null, in our case 6 out of 7 for interest and 4 out of 4 for belonging. In the app, we set the type I error rate to .025 to indicate that all the effects go in the same direction. We set the assumed power to .50: this is conservative on our part as the four studies in the main text are very highly powered, but we wanted to account for the less-well powered studies reported in the Online Supplement. We set the prior probability of the null to .50, which indicates equal probability of a matching or mismatching effect being true. Results revealed a Bayes Factor >150 for the effect of mindset matching on interest and belonging, indicating strong support for our primary hypotheses compared to the null hypothesis.

# Failsafe N

We also examined the fail-safe *N* (Rosenberg, 2005) for our set of studies. This analysis uses the observed effect sizes and effect size variances to calculate the number of studies with a null effect that would have to be added to the set for the overall effect to be null. For the interactive effect of personal and organizational mindsets on belonging, this analysis revealed that 123 studies averaging a null effect would have to be added to the current set of studies for our target p-value to be greater than .05. For the effect on interest, it would require 148 studies.

# P-Curve Analysis

Some may wish to see further evidence that our results are not the product of selective reporting. To address this, we conducted p-curve analyses on our studies testing the matching effect on belonging and interest. This analysis assumes that a set of studies has “evidential value” when the p-values are skewed toward being smaller. A p-curve analysis of belonging revealed a presence of evidential value for both the full p-curve, *z* = -6.83, *p* < .001, and the half p-curve, *z* = -7.54, *p* < .001. The analysis of interest revealed a similar presence of evidential value for both the full p-curve, *z* = -4.31, *p* < .001, and half p-curve, *z* = -5.16, *p* < .001. These analyses speak against the presence of selective reporting.

Figure S2. P-Curve on Belonging



Figure S3. P-Curve on Interest

