

# Supporting Information

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## SI Experiment 3

### Empathic Discipline Session 1: Sample Materials.

#### Empathic discipline session 1: Introduction of the activity (excerpt).

“Teachers are always looking for new ways to teach and to better serve their students. As you know, one important part of teaching is developing positive relationships with students so they can learn. Our own research team has been studying the role of teacher–student relationships in students’ motivation, learning, and behavior. This research suggests that how teachers and students interact, especially during the critical period of adolescence, can have long-lasting effects on students’ motivation and success. The relationships students build with their middle-school teachers can influence students’ motivation and behavior in class and their attitudes and success beyond.

In this web module, we will share with you some of this research. Then, we will ask you for your input as a professional educator. We are especially interested in your thoughts about how teachers like you can and do use these ideas to have better interactions with students and to improve their lives. Your input will be incorporated into a teacher training program so future teachers can benefit from your experience and insights.

Thank you for your time and help.”

#### Empathic discipline session 1: Empathic-mindset article (excerpt).

“Almost everyone has a personal story about a great teacher who influenced his or her life. For some, it’s a teacher who reached out and helped them feel both comfortable and respected in school. For others, it’s a teacher who helped them see they could reach a higher standard, even when they doubted themselves. As teachers, these stories warm our hearts. They inspire us to create a positive setting that brings out the best in our students.

Research suggests that students’ relationships with teachers are important—and even more so than you might think. Children who experience caring relationships with adults grow up to be more respectful and caring people. At home, a kind and responsive parent shows a child that their family is good and trustworthy. In school, a teacher who makes his or her students feel heard, valued, and respected shows them that school is fair and they can grow and succeed there.

Of course, creating positive relationships is not always easy—especially with middle-school students. The social and biological changes of adolescence can make middle-school students insecure and sensitive. Yet students’ attitudes about school and behavior can and do improve when teachers successfully convey the caring and respect students crave.

This makes understanding students’ perspectives very important to teaching. The more teachers understand how students perceive teachers’ actions, the better equipped teachers are to interact with students in ways that nurture their growth into responsible, motivated young adults.

Many teachers worry about students disengaging from school during middle school and seek out a variety of strategies to help their students. Adolescence is a time of new worries and pressures. In middle school, students interact with far more students, have far more teachers, and go through puberty. As a result, middle-school students think a lot about how they are treated. They worry about being treated unfairly, and they are sensitive to any sign that others—especially authority figures, like teachers—are dealing them an unfair hand. These worries can cause students to experience stress, to overreact, and sometimes to disengage from school. Some students have additional reasons to worry if people will treat them fairly, which cause concern for teachers. For instance, students from poor families or from ethnic minority backgrounds may hear discouraging stories from friends, parents, or the media about how their group is treated.

So it’s reasonable for these students to be especially worried about how they will be treated in middle school. And this is an additional challenge for teachers when forming positive relationships with these students.”

#### Empathic discipline session 1: Sample student stories.

“In middle school, I didn’t feel like I belonged. It seemed like the teachers always called on the other students. So I didn’t pay attention in class and sometimes I got in trouble. One day I got detention, and instead of just sitting there, my teacher talked with me about what happened. He really listened to me. And then he told me that he had trouble sometimes in middle school but that it gets better. It felt good to know I had someone I could trust in school.”

“One time, after I got in trouble in seventh grade, I still remember how my teacher took me aside later and listened to my side of the story. She repeated what I said back to me to be sure she understood what I was saying. Then she explained why she still had to give me a detention because I was disrupting class. Even though I still got a detention, I was glad that she didn’t just dismiss what I had to say, like other teachers sometimes did. After that, I actually felt better in school because I knew I had someone to talk to.”

#### Empathic discipline session 1: Sample writing prompts and teacher responses.

“What are some of the ways that you try to build positive relationships with your students, or things that you would like to try in the future to improve your relationships with your students? Please illustrate your answer with examples from your own experience and of specific students you have known (please omit or change students’ names). Consider especially circumstances when it is most important to reach out to students, for instance situations when students are struggling academically, not participating in class, or are getting in trouble.”

The following are sample participating teacher responses:

“Answer their questions thoughtfully and respectfully no matter what their academic history with me has been.”

“Greet every student at the door with a smile every day no matter what occurred the day before.”

“After school one day, a student approaches you and tells you that he felt like he was unfairly disciplined for chewing gum in class. Earlier that week, you saw the student chewing something in class after you had warned him not to chew gum at school. You sent the student to the office for disrupting the class. Now he tells you that he feels that he was not treated fairly. How would you respond to this student? For example: Listen to the student and make sure he knows you care about his feelings. Explain to him why you had to enforce the rule.”

The following is a sample participating teacher response:

“In this situation I would ask the student to sit down and we would have a conversation both sitting down. I would ask him why exactly he felt he was unfairly treated. I would repeat this back to him and say I was sorry he felt this way. I would remind him I did warn him earlier in the week and ask if he remembered this. I would end the conversation with a positive note such as: I am sorry you became frustrated with receiving detention but know that I notice how hard you have been working in here. Keep up that positive work habit.”

### Control Session 1: Sample Materials.

#### Control session 1: Control article (excerpt).

“Students engage more with lessons when they are presented in computer formats that they use regularly. Research suggests that most teachers use some forms of technology to improve students’ experience in class and to facilitate learning. Many teachers believe that showing the details of materials in a presentation or allowing students to research a subject themselves supports their understanding. Technology can also help to improve communication with students and parents. Some small changes in the way technology is used in the classroom can prove to be very useful to keep students interested and help them to learn class materials.”

### Control session 1: Sample student stories.

"I liked when the teacher used the projector in my class. It was more fun than just a lecture. The work was more clear and I think my teacher made more sense. It was easier to focus in class. And being able to email my homework to my teachers is great. I think it saves everyone a lot of time. It also helps me keep track of my stuff for when tests come around."

"We get to search the net to get information for homework. We also get to see images about the subjects we discuss in class. It helps. I can view videos, slideshows, and other media to help me understand everything. And one of my teachers has a website which helps a lot. I can just go to her webpage and see a calendar for homework and check my grades. Of course we use email a lot too."

### Control session 1: Sample writing prompts and teacher responses.

"What are some of the ways that you try to use technology in your classes or things that you would like to try in the future to make more use of technology? Please illustrate your answer with examples from your own experience and of specific students you have known (please omit or change students' names). Consider especially circumstances when it is most important to keep students interested, for instance when students spend a lot of time on the internet or students have a hard time understanding difficult lessons."

The following is a sample participating teacher response:

"I use technology every day to plan, teach, and to keep students motivated and engaged. Teacher planning: 1. Lesson plans, 2. Power Point presentations, 3. Document camera/overhead projector. Student Engagement: 1. Interactive websites, 2. Homework tutorials on internet, 3. Online textbook, 4. Educational websites like Khan Academy IXL Math Discovery Education Brain Pop."

"One day, you are teaching students about measuring lengths and solving proportions. You want to show visual examples and give students the opportunity to exercise with the new materials. Also, you want to assign a homework assignment that students should return within the next couple of days. What do you do?"

The following is a sample participating teacher response:

"After explaining concepts with my document camera and drawings I would have students use computers to design their own related math problems and then require each student to explain its solution. Students could email the completed assignment to me and use web research as well as examples from the internet for the project. Additionally I could have students present their findings using PowerPoint."

### Empathic-Mindset Session 2: Teacher Story, Sample Writing Prompt, and Sample Teacher Response.

"When I was a child, I remember worrying about how I would be treated by teachers at my school. But I will always remember Ms. McBride, who treated me with respect and trust. She showed me that teachers could make all the difference in how students feel about school. Now, I make a point of treating my students with respect and I find that they respect me more in return."

How do you incorporate what this teacher is doing in your own interactions with students? Please explain in detail."

The following are sample participating teacher responses:

"I am always doing this with my students. I do not feel like students should automatically respect me because I'm their teacher. I feel I need to earn my students' respect and trust. I know many of them have had poor experiences with past teachers so I need to prove to my students that I am there for them and will not let them fail."

"Respect is the most important thing in creating positive relationships with people, especially students. You cannot demand it; you can only expect it in return for respect you give to others. It is also extremely important to continue to give respect to your students despite the lack of respect some of them may give you. This allows for a conversation with them about how you treat them on a daily basis and ask them to look at how they treat you. Overall respect runs my classroom. I re-

mind students who disrupt in some way that they are showing disrespect to another individual."

### Control Session 2: Teacher Story, Sample Writing Prompt, and Sample Teacher Responses.

"When I was a child, I remember having to stay after school to get extra help and lessons were only taught on chalk boards. But now technology allows us to teach students more effectively. For example, I can contact students outside of class through email. Now, I also use web-based math games to enhance their learning."

How do you incorporate what this teacher is doing in your own use of technology with students? Please explain in detail."

The following are sample participating teacher responses:

"I use web-based math games to enhance their learning. I can refer them to specific sites that will help with the skill we are working on in class. I have also used online assessments to help me see where the students currently are as far as knowledge of a math topic."

"I use edmodo to communicate the homework with my students as well as the school website to post the homeworks."

**Student Intervention (Session 1).** During session 1, all students completed randomized materials. These focused on the importance of understanding teachers' perspectives about disciplinary action or on practicing good study skills. There was no effect of student condition on suspension rates ( $OR = 1.43, z = 1.70, P = 0.09$ ) and no interaction with teacher condition ( $OR = 1.03, z < 1$ ). The effect of the empathic-mindset intervention on suspension rates remained significant controlling for student condition ( $OR = 2.23, z = -3.02, P = 0.003$ ).

**Student Survey (Session 2).** In session 2, students completed a series of measures assessing broad perception of the school climate (17). These included six items assessing trust in school (e.g., "Teachers at my school give out fair grades" and "Students in my racial group are treated fairly by the teachers and other adults at [school name] Middle School") (1, very much disagree; 6, very much agree) ( $\alpha = 0.80$ ). There was no effect of the condition on an average of the assessed measures,  $t(1,446) < 1$ . For the purpose of the present study, we focused on the one item that directly assessed the critical construct of respect: the extent to which students reported feeling respected by teachers ("Teachers and other adults at my school treat me with respect"; 1, strongly disagree; 6, strongly agree).

**Supplementary Analyses of Student Suspension Rates.** The primary analyses focused on student suspension rates that arose from misbehavior across school settings. Could the reduction in student suspension rates have arisen from a change only in math class where the teacher was randomized to condition, for instance as a result of improved behavior or reduced discipline restricted to this class?

To address this question, we examined data from the only school that identified the faculty member who referred a student for a given suspension: school 2 (Table S1), the second largest school in the study, accounting for 33% of the full student sample. In this school, students whose math teacher was treated versus not were 55% less likely to be suspended from any class (treatment, 5.4%; control, 12.1%;  $OR = 0.41, \text{logit} = -0.88, z = -2.10, P = 0.035$ ), controlling for demographics ( $OR = 0.50, \text{logit} = -0.69, z = -2.38, P = 0.017$ ). This effect was not due to a change only in math class. Only 7.4% of suspensions were referred by math teachers. Furthermore, all students referred for suspension by a math teacher were also referred for suspension by other faculty. Thus, running the analysis in school 2 even excluding suspensions referred by math teachers yields an identical reduction in suspension rates. This analysis suggests that, at least in this school, the intervention

led to a broad improvement in student behavior across diverse school contexts, not to either an improvement in behavior re-

stricted to math class or to more permissive discipline practices among treated math teachers.

**Table S1. Demographics of participating schools (experiment 3)**

School	District	Number of student participants	Total school enrollment	Math faculty recruited, %	Students on free or reduced-price lunch, %	Students at or above math proficiency, %	Racial composition of school, %				
							Asian	Black	Latino	White	Other
1	A	561	672	100	70	31	15	3	75	3	4
2	B	559	790	100	68	31	25	3	61	9	2
3	C	175	598	50	61	49	11	4	61	18	6
4	C	212	793	67	37	63	16	1	41	33	9
5	A	175	174	100	62	34	10	2	77	4	7

Number of student participants is the number of students taught by a math teacher randomized to a treatment or control condition for whom prior- and current-year school suspension data were available. Total school enrollment is based on the National Center for Education Statistics (NCES) Common Core of Data (CCD) survey for the first day of the 2012–2013 school year. This number can be lower than the number of student participants, as students can transfer into the school over the course of the year. We received school-record data for 2,069 students, 1,682 of whom were taught by a randomized math teacher and had intervention-year and prior-year suspension records. Percent students on free/reduced lunch and racial composition are also based on the NCES CCD survey for the first day of the 2012–2013 school year. Percent students at or above math proficiency is based on students' Standardized Testing and Reporting (STAR) Program scores through the California Department of Education Analysis, Measurement, & Accountability Reporting Division's school reports for 2012–2013.

**Table S2. Interrater reliability (experiment 1)**

Themes	Kappa	SE
Punitive themes		
Detain student	0.67	0.10
Threaten student	0.62	0.07
Involve administrator	0.81	0.06
Empathic themes		
Rearrange classroom	0.54	0.08
Talk with student	0.60	0.07