

Online Appendix

Transmitting Rights: Effective Cooperation, Inter-Gender Contact, and Student Achievement

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Appendix A1. Transcripts and Discussion

Table A1: Utilitarian Treatment Transcript

I want to welcome all of you. I am your instructor for the soft skills workshop which we are starting next week. What we mean by soft skills are skills that allow us to communicate with and understand people better. The purpose of sending you a presentation is to briefly walk you through some of the core concepts which will provide you with the background knowledge that is compulsory for the upcoming workshop next week. And the first thing I want to do is, to make you comfortable. Although this is a compulsory lecture to get acquainted with the required material, there is nothing uptight about this presentation. I am really here for your benefit. I hope that is going to be a worthwhile experience for you. In this slide you see the topics that sort of headlines this presentation; We will talk about... What is empathy, Why it matters, why we need to talk about it? Then we will discuss qualitative or anecdotal evidence, some examples from teachers, to underscore the importance of empathy. After presenting evidence of these real stories from teachers, we will discuss the research which has been done on hundreds of teachers and students across many countries on empathy. Ok to begin with: In developed countries, the relevance of soft skills for student achievement in primary, middle and high school is increasingly gaining traction. More than ever before, we are talking about school culture in a way that is not primarily focused on academic achievement and passing high school. Instead, we are looking at education systems that have to come to appreciate the interdependence of academic achievement on building empathy in students. Jean Decety, a world-renowned neuroscientist, in his book ‘The Social Neuroscience of Empathy’ talks about how learning, particularly in the curriculum areas of reading, literature, and social studies, should be facilitated by empathy because

the empathic child is better able to place him or herself in the role of central characters portrayed in the fictional and historical readings. In addition to being better able to understand the roles and perspectives of these fictional and historical characters, the empathic child is better able to share and experience, to some degree, their feelings. These shared feelings may serve to underline and reinforce what they have read and been taught, resulting in better recall. Also, a number of educators have suggested that there is a reciprocal relationship between the process of reading and empathy, such that reading helps heighten and reinforce empathy (Budin, 2001; Cress & Holm, 2000). There is also evidence that teacher empathy may have a positive influence on student attitudes: teacher empathy toward withdrawn students is related with middle-school peers' acceptance of withdrawn students in their classes (Chang, 2003). This is not just limited to academic achievement though. A leading psychology and education professor at Columbia University in the US views one of the main challenges schools face today is helping students be healthy, happy and successful in meeting the challenges of their increasingly complex social environment. Empathetic teachers can play a significant role in making this happen. A research that studied teachers' behaviours in their schools to understand the role of empathy in teaching culturally diverse students in the US (McAllister, 2000), finds how teachers found it easier to work with students after being immersed into their context through interactions with their parents and their wider communities. Even the world outside school is accepting and acknowledging the importance of empathy. To contextualize the discussion with some examples, let's take the example of some of the most profitable and biggest firms across the globe. In this table you see the names of companies across the globe which scored highest points in the empathy score. That means employees and employers in these firms are rated very high in empathy. Isn't it fascinating? "It is a puzzling question for economists why the most profitable and biggest firms rank so highly in empathy scores?" Why do

firms who earn millions in profits also have high empathy scores? Is cut throatiness not going to get you more profits? Is the selfish notion of maximizing profit is most important? “Actually, it seems to be the case that soft skills are critical in all this!! “it may turn out that empathy boosts profit”. This occurs because empathy equips key partners “employees and employers with the soft skills that allow the companies to navigate complex relationships and satisfy client needs and maintain employee trust and motivation”. This empirical evidence is dispelling the view that it is being selfish and unemphatic to others is what will get you ahead in life. So, here are a few interesting definitions of empathy from different sources; this concept has been around for a while, and various religious beliefs teach us that it is something that we should practice as human beings towards others. There are different definitions of empathy in academic literature. Since there seems to be no universally agreed upon definition of empathy, “we don’t need to go into the nitty gritty of each specific definition of empathy but in a nutshell empathy is putting yourself in another's shoes”. It matters because the skill of empathy can help you succeed in your professional life. It can boost performance". That is to say, Empathy influences overall organizational performance and individual performance and well-being at a workplace. That is why, recent research is paying more and more attention to the effects of empathy on others. As we just saw in previous slide companies integrate empathy into their business strategies, because they think it’ll help them to provide better services to their clients. We don’t want to dwell too long on the private sector, but to bring it back to our context, of the importance of empathy for teachers. Empathy is important for school teachers because schools are challenging workplaces. That can be subject to emotionally demanding situations; you face demands of parents, students, school principals etc. Empathy towards yourself, toward others, and towards the students you serve can help you navigate this space better. It can help you at the job and it can improve learning for your

students, because you consciously empathize with their needs, take their point of view, understand their concerns. This is especially relevant in a country where most kids face severe hardship in daily lives and depend very much upon teachers for a safe learning environment!! For instance, think of your favorite teachers as a kid. What made them special? For me, it was their ability to understand my needs and to make me feel safe in the classroom. Teachers I could go and talk to about my concerns and I knew they would understand. And if for you that wasn't a teacher but someone else, that's okay too. The point being, we like to learn from people who can understand us. Systematic research of large population backs the idea that empathy can improve performance...also a related question is: why do all leading organizations train their employees in empathy? What is in for them? After all there is a Cutthroat competition in the corporate world for making profit. The point that I am trying to make is: in the 21st century companies might be investing in empathy to improve their profits and community engagement. A large body of research backs this up. For instance, in one prominent study at Stanford by Professor Zaki documents that empathy is more 'useful' than selfish behavior. It seems like a myth, being selfish is what will get you ahead but empathy and concern for other is key skill that those around you cherish. Empirical evidence shows that Empathy benefits at different levels. First at a personal level, empathic people report to be much happier than less empathetic people. Second at a social level, empathic people have more fulfilling social lives than less empathetic people. ” We have briefly touched on key findings from seminal studies on empathy that show empathy benefits the very people who show empathy themselves. We would have time to go into detail of these study but I did want to give you a flavor of some cutting edge research in this field...So we will go into detail of one of the studies. For instance, a research by a Yale university psychologist, Marc A. Brackett, (Brackett et al., 2011) studies 2000 students across 90 classrooms to find that there is a direct positive

relationship between classroom emotional climate, driven by teacher's ability to build strong relationships with their students. The classroom environments rated with objective indicators to be emotionally supportive had a positive impact on student conduct, suggesting that in the emotionally supportive classrooms, students liked and respected their teachers more and , in turn, behaved better. so the question is What is going on? (emphasis on it) Why is it that teachers are also investing in creating these environments? The answer many world renowned educators and psychologists (Blase, 1982; Byrne, 1994; Friedman, 1995; Hastings & Bham, 2003) say is as teachers you must have experienced the stress of when student misbehave, and this stress is not just what you feel but is proven through empirical studies showing how teacher stress, burnout and well-being have been linked consistently to student conduct. So teachers are investing their time in understanding their students and creating an environment that can support them. Empathy is social good which is valued by others If you are empathic, your students will be more motivated to work with you FOR YOU! Empathy is mutually beneficial. Empathy helps you bring the best out of people. Only by taking the perspective of others can you realize the problems other people face in accomplishing their tasks and how they may overcome them. There are several studies that back the idea that if the teacher is empathic then the whole class performs better. Empathic leaders have better communication and trust with their peers and students. Another research on teams and performance, finds something very interesting. If you ask people on a team: who is the leader of the team? they are not likely to name the designated leader but the "effective leader who helped them out" in other words a colleague who was empathic to their needs, who may or may not be the designated leader. Again "humans are social animals", empathy begets empathy. For you teachers this is of course not a surprise. You must have heard stories of the celebrated teachers, the ones that made the difference! They incidentally also were revered not just for their work ethic and commitment to

public service but also their empathy. All types of evidence backs the idea that empathy is good for you. It is not just the right thing to do but also the most sensible thing to do for your performance as a teacher.

Table A2: Malleability Treatment Transcript

I want to welcome all of you. I am your instructor for the soft skills workshop which we are starting next week. The purpose of sending you a presentation is to briefly walk you through some of the core concepts which will provide you the background knowledge that is compulsory for the upcoming workshop next week. And the first thing I want to do is, to make you comfortable. Although, this is compulsory lecture to get acquainted with the required material but there is nothing uptight about this presentation. I am really here for your benefit. I hope that is going to be a worthwhile experience for you. In this slide you see the topics that sort of headlines this presentation. We will talk about: What is empathy? Is empathy fixed? Before going in depth in the question of whether empathy is fixed in a person. I would mention some motivating examples that point towards the notion that empathy of person is not an immutable or unchangeable force of nature. After going through the qualitative research and stories of change, I will discuss some recent large scale research that shows whether empathy changes over time? We will specifically discuss Research on Malleability of Empathy. So, here are a few interesting definitions of empathy from different sources; this concept has been around for a while, various religious beliefs teach us that it is something that we should practice as human being toward others. There are different definitions of empathy in academic literature. Since there seems to be no universally agreed upon definition of empathy, “we don’t need to go into nitty gritty of each specific definition of empathy but in a nutshell, empathy just means putting yourself in another shoes, its taking the perspective of others

when making a decision”. So the question is, Is Empathy fixed? Throughout history anecdotal accounts suggest people can change, people can change in the level of empathy they show to others (From Religion: Hazrat Umar, Khalid bin Waleed (Islamic religious leaders) and their transformation from enemy of the Islam to the greatest champions of Islam. We can find various recent examples of people who are known for their drastic transformation; growing themselves into an empathetic personality. For instance, Consider the example of Majid Nawaz from being international terrorist to running the biggest counter-terrorism organization in Pakistan (Quilliem) that fights the battle against radicalization by presenting alternative narratives to radicalized youth and actual terrorists in jails across the world (see his book “The Radical” for his fascinating story). Many other examples across the world show that people can change in the level of empathy: For instance, some White people who believed that White race is better than all in the US becoming the biggest fighters of minority rights. So, the question is what is going on? These example suggest that one can grow himself in empathy. So I made a rather bold claim based on few stories that empathy is not fixed. In fact a large body of research backs this up. For instance, in one prominent study at Stanford Zaki and co-authors show empathy is not fixed in a person. Several studies show empathy is nor fixed in a person (see e.g. Zaki and Ochsner, 2012). “Empathy is changeable and can be influenced over time. Empathy is not stable over one’s lifetime. It can be developed and cultivated.” Survey after surveys also show that empathy of populations changes over time. An important point is: Empathy doesn’t come naturally in all situation: For instance: Sometimes we struggle with showing empathy for someone or considering their perspective. That’s OK, empathy can be changed. If we don’t feel empathy naturally, it doesn’t mean that we are incapable of feeling it. empathy is changeable, and that understanding that it

can sometimes be difficult to feel empathetic unless we work on it: is an important step to developing this important life skill. Another important point is “Empathy is not a constant of nature determined by your upbringing alone, it rises and falls based on the environment around you”). For instance, in United States where most amount of data is available empathy scores have been falling for the last 30 years i.e. empathy in US now is about 50% of what it was 30 years ago. Why is it falling, if it is fixed? And it is not just one measure of empathy but all measures seem to follow this downward trend. This data convinced many psychologists that empathy is malleable, people can grow in empathy or they can fall in empathy. That is exactly what this graph indicates: that empathy is falling over time! If empathy is fixed theory is correct, this graph would not be downward trending. It should be a straight line. Essentially, this is inconsistent with the fixed empathy theory where empathy of individual and populations are fixed over time. This observed decline has put out of business all the psychological theories that had argued earlier empathy was fixed. We have briefly touched on key findings from the seminal study on empathy that show empathy is not fixed. I do want to give you some more flavor of cutting-edge research in this field. So we will go into detail of couple of the studies. For instance: does empathy change? empathy changed when they were given perspective of others (VR glasses, research article: Bernard et al., 2018). In the first study when researchers gave virtual reality goggles to people and made them take perspective of others (e.g. see the lives through the eyes of homeless people and beggars), the level of empathy they showed to others skyrocketed both in surveys as well as high-stake decisions). Therefore, being open minded and willing to change and learn, is essential to grow in empathy and develop this skill. A seminal study from Stanford University shows that people who are most rigid in their believe that empathy cannot change in them or others are the least empathetic

to begin with. People who believe empathy is inherent and unchangeable disengage from situations where empathy is difficult for them to experience. By contrast, people who believe empathy can be developed, they feel less threatened by perceiving that their empathic abilities are being challenged in a difficult situation. Another study shows that “Resilience training” increased empathy among radicalized Moroccan youth (research article: Feddes et al., 2015). This suggests that “People really change?” it hints towards the notion that we need to revise this notion empathy cannot be changed and is fixed, the level of empathy an individual has is not destiny. This also suggests the answer of the puzzling question why the most profitable and biggest firms engage in empathy workshops and “waste” millions if empathy is unchangeable? Can it be that companies like Google and Facebook think empathy is malleable in people? They can inculcate these skills So, coming back to the basic question we began with, can empathy evolve in a person? Commonsense stories, all types of evidence point to one conclusion that empathy is malleable and it can change. Empathy is a skill that can be developed. Like any skill it needs work, to understand the needs of others and not just to best serve them but bring the best out of your students. Learning “The art of empathy” needs practice. All types of evidence backs the idea that empathy is not fixed but malleable. It is a skill that can be developed.

Table A3: Transcript of Structured Discussion

Each training workshop was followed by a 30-minute structured group discussion within the treatment arm which was structured as follows.

2 candidates were randomly drawn from each treatment arm and were invited to speak and answer within the Utilitarian, Malleability, Bol Movie, the Bol Movie joint with Curriculum and Placebo arms, these two questions:

Randomly Drawn Candidate 1 within the Treatment Arm:

Q1. What do you think were the main messages of this workshop? Q2. How do you think you may apply lessons from today's workshop in your career?

Randomly Candidate 2 within the Treatment Arm:

Q1. What struck you most about today's workshop and why? Q2. Can you give examples on how the lessons of today's workshop could be applied in your teaching job?

Table A4: Research Ethics Approvals

Research Ethics Approvals.— Our study protocols were reviewed and approved by the Lahore School of Economics with IRB Number RERC-062021-03. Earlier, we had also received separate administrative approvals from the Progressive Education Network administration, and teacher representatives. We also closely collaborated with the PEN training department to design and implement the experiment, who shared our view that this project is important and may bring out important lessons for policymakers and for their own inhouse training programs,

allowing them to improve both teacher satisfaction and student achievement in the future.

Table A5. Discussion of Curriculum Treatment

The "*Gender Equality in Child Development for Social Skills*" course is a collaborative endeavor crafted by a team of local educators, our research team, and the research staff at Progressive Education Network. Leading this initiative are Miss Maeelha Farooqi and Miss Sameen Amir, two esteemed public school educators affiliated with the Progressive Education Network in Pakistan, who have two decades of experience in the teaching profession. This curriculum has a flexible structure that allows educators to conduct sessions at a pace of one hour per week or adjust the frequency to accommodate the school's schedule. The overarching goal of this curriculum was to discuss gender rights, critical thinking and discussion on the respect for gender differences. The curriculum also attempts to foster a culture of trust and cooperation, and empowering students to challenge gender stereotypes and discrimination. The weekly curriculum is a collection of interactive and reflective activities, each with a specific purpose and outcome aimed at nurturing emotional intelligence on the topic of gender rights. The program begins with an introduction to the concept of gender, challenging preconceived biases and encouraging respect for individual expression. Subsequent weeks delve into recognizing and understanding emotional signs across genders, the universality of emotions, and the importance of gender sensitivity and rights. Activities range from role-playing and storytelling to creative arts, all designed to facilitate a deeper understanding of gender dynamics and emotional experiences. The curriculum also includes practical exercises such as the "Emotion Maze," which teaches perspective-taking, and decision-making scenarios that promote inclusivity and respect for gender diversity. These activities are complemented by case scenarios that reflect societal gender discrimination, prompting students to engage in critical discussions and self-reflection on gender attitudes. The full coursebook this course is based on can be access in full [HERE](#).

Table A6. Discussion of Teacher Workshop

A structured three-hour workshop was conducted for teachers from the Progressive Education Network (PEN) schools, focusing on the "Gender Equality in Child Development for Social Skills" course in Lahore, Garden Town PEN Headquarters. The curriculum workshop took place in March 2021, followed by the launch of the course in April 2021, which continued for a duration of four months. This gender course was incorporated into the existing Pakistan studies class schedule. The workshop's agenda, followed the coursebook we adapted from Professor Sule Alan, it encompassed a review of the curriculum's adaptable framework, which permits educators to modulate the frequency of sessions to align with institutional schedules of their specific school. Emphasis was placed on the curriculum's primary objectives: to facilitate discourse on gender rights, to cultivate critical thinking, and to instigate conversations on the acknowledgment of gender differences. The workshop equipped teachers with pedagogical strategies to engender a classroom environment conducive to trust and collaborative learning, while also empowering students to critically assess and challenge entrenched gender stereotypes and biases. The curriculum's array of interactive and reflective exercises, including role-playing, storytelling, and creative arts, was delineated, each designed to enhance students' emotional intelligence on gender rights. The workshop also provided a platform for teachers to engage with case scenarios reflective of societal gender discrimination, thereby encouraging critical discussions and introspection on gender attitudes among students. Ultimately, the workshop for PEN teachers at Lahore's PEN Headquarters equipped teachers with the skills to deliver a flexible, gender-focused curriculum that aims to shape a more inclusive and empathetic

classroom environment, using the course book we designed to deliver the content. The full coursebook we followed in the workshop can be accessed [HERE](#).

Appendix A2. Robustness and Discussion

Experimental Demand.— Experimental demand is unlikely to drive our results for at least four reasons. First, we observe a virtually zero effect on teachers and students of our utility and malleability treatments, which attempt to impact teacher gender attitudes through interventions building on evidence from the economic and psychology literature. Second, we use the implicit association test, which is difficult to “game” and captures implicit associations that may be unknown even to the individual (Greenwald et al., 2009). Third, the persistence of the effects of our visual narrative alone and joint narrative-and-curriculum treatments up to a year later, particularly on student achievement, strengthens the inference that the treatments had real consequences. Last, we use the Marlowe-Crowne social desirability scale, a survey module developed by social psychologists to rigorously measure a person’s propensity to give socially-desirable answers (Crowne and Marlowe, 1960). In Table B6 of Appendix B, when we discard individuals who score high on this social desirability scale, the results remain essentially identical. Taken together, all this indicates that our attitudinal data is likely to map onto real-world behavior.

Spillovers.—Our experiment allowed us to randomly allocate treatment for 607 teachers across 52 schools and 15000 students in Pakistan. However, students and teachers in the treated and control group may interact within a school. This can lead to potential spillovers if individuals in the control group also end up being partially treated. First, to the extent there are spillovers within a school, our estimate can then be considered as a lower bound on the impact of the treatments. Second, even if the spillover goes into the opposite direction, their effect is likely

to be limited. This is because our experimental design allows us to ascertain the extent of these spillover effects. That is, we exploit the variation in treated teachers across the 52 PEN schools in our sample to explore how it impacts teacher gender attitudes and student gender attitudes and test scores. Panel A of Table B7 shows that teachers' gender attitudes are essentially identical as more teachers get treated within a school. Likewise, in Panel B of Table B7, we find that the treatment effect on student's gender attitudes and test scores are also similar as more teachers within a school get treated. In summary, regardless of the fraction of treated teachers in a school, the visual narrative and joint treatment has similar impacts. Last, we leverage the fact that our Utilitarian and Malleability treatments had no impact on gender attitudes over the control group. Therefore, we investigate whether the fraction of schools treated with visual narrative or joint treatment causes the control group to increase in progressive gender attitudes. Under the assumption that a higher fraction of treated teachers leads to a greater likelihood for interactions between treated teachers and control teachers, we assess the impact of fraction of treated teachers on the control teacher's outcomes. These results are reported in Tables B8 and B9, where we find little impact of fraction of treated teachers among control teachers on gender attitudes. The null effect of more intensely treated schools on gender attitudes holds for Utilitarian, Malleability and Placebo assigned teachers. Taken together, the evidence strongly suggests that spillover effects between treated and control teachers, even if they exist, are likely to be small in magnitude and hence unlikely to explain the effect sizes we observe.

Attitudes to Behavior.— Four aspects of our experiment offer interpretation of attitudinal data as having real consequences. First, we use an implicit association test, which is based on the idea that the easier the mental task, the faster the response. IATs have the advantage of (1) mitigating

social-desirability bias in the responses and (2) capturing implicit associations that may be unknown to the individual but may nevertheless affect attitudes and behavior (Greenwald et al., 2009). Second, we observe that the students' math scores are impacted, and students' gender attitudes shifted even when the standalone visual narrative treatment focused squarely on teachers. Finally, following Dhar et al., (2022) we use the Marlowe-Crowne social desirability scale, a survey module developed by social psychologists to rigorously measure a person's propensity to give socially-desirable answers (Crowne and Marlowe, 1960). When we discard individuals who score high on their social desirability scale, the results are essentially identical. These features of our experiment indicate that our attitudinal data is likely to map well onto real-world behavior.

External Validity.—Although comprehensive data on charter schools in Pakistan is scarce, by the early 2020s, a number of organizations inspired by the U.S. charter school model had begun to effectively compete with both public and private schools. This marked a significant shift from virtually no charter schools in the early 2000s to over 3,000 operating across Pakistan. For example, our network of charter schools, the Progressive Education Network which started with only 52 schools in Punjab, where we intervened, at the beginning of our experiment in 2020, has expanded to 231 schools in Punjab by 2024. This exponential growth has been driven in part by substantial foreign donations, especially from Pakistani expatriates in the United States who wished the 'replicate' the US charter school experience in Pakistan (Isensee, 2016). Our study was conducted in Punjab, the most populous province in Pakistan with a population of 110 million. The province is home to approximately 100,000 public schools, 30,000 private schools, and 3000 charter schools (National Center for Education Statistics, 2019). Since the early 2010s, Pakistan has witnessed a significant surge in the number of private and charter schools. For example, the number of private schools has doubled since 2000, reaching approximately 60,000

by 2016 (Andrabi et al., 2024). Even though charter schools may not be the most widespread type of school in Pakistan, their growth in adopting public schools is noteworthy. With the rapid proliferation of charter schools in Pakistan, it is becoming increasingly important to study their impact and development within the country's educational system. This research could also provide insights into how the U.S. charter school experiment might be 'externally valid' in other contexts.

Appendix B: Additional Figures and Tables

Figure B1: Summary of All Studies with the Progressive Education Network in Punjab and Sindh Province

All Experiments with Teachers and Students of the Progressive Education Network (PEN)					
Title of Paper	Sample	Timing of Experiment and Treatment Rollout	Main Outcomes Observed	Treatments	Results
Transmitting Rights	607 teachers and their 13,932 pupils in 52 PEN schools in Punjab, Pakistan.	The Baseline, midline, and endline surveys were conducted in February 2021, September 2021, and March 2022, respectively. We conducted the first round of data collection 6 months after the intervention (labelled short-term effects), while the second round of data was collected 12 months later. The treatment of Transmitting Rights and Rights Revolution happened at the same time but gender attitude outcomes for Transmitting Rights were collected earlier (February 2021, September 2021, and March 2022). The stress outcomes were collected later on request of PEN administration and were not pre-registered. Note all treatments were rolled out in March 2021.	Teachers' gender attitudes, IAT scores, Students' Attitudes and Math Test Scores	Utilitarian Treatment, Malleability Treatment, Visual Narrative Treatment, Joint Visual Narrative and Gender-Rights Curriculum Treatment. Different practices of shifting the gender	Visual narratives and joint visual narratives combined with the curriculum foster more progressive gender attitudes among teachers. These gender attitudes are transmitted from teachers to students. Broad-based interventions, such as those based on Utilitarianism and the Malleability of Empathy, have no effect.
Why Are Rights Revolutions Rare?			Stress Outcomes, Domestic Violence		A year after the intervention, the cultivation of progressive gender attitudes elevated stress hormone concentrations in the blood plasma. However, this reduces as more teachers within a school are treated and have more progressive gender attitudes, a moral bandwagoning effect.
Role Models and Theory of Mind: Teacher Vaccinations and Student Success		All treatments was rolled out in August 2021, with the baseline collected 6 month before treatment (February 2021), midline 12 months (September 2022) post-treatment and endline 18 months post-treatment (March 2023), respectively. For mathematics, we have test scores for 6, 12 and 18 months after the treatment, and vaccinations and absenteeism data is available at the monthly level up to 18 months post-treatment.	COVID-19 Vaccination Certificates, Mathematics Test Scores	Cash 15%, Cash 30% and Lottery Treatment, Celebrity Treatment, Role Model Treatment. Methods of encouraging people to get vaccinated	Role models positively impacts teachers' vaccination status as verified by their COVID-19 certificates. The math test scores of vaccinated teachers also rose. Reduced covid-related absenteeism the likely mechanism. Monetary incentives appear not to have any effect.
Psychological Well-being and Educational Efficiency: Evidence from Civil Servant Intervention in Pakistan	850 teachers and their 24,752 students of PEN in province of Sindh and Punjab.	All treatments were rolled out in February 2022 (ongoing study). To monitor student performance, we utilized the February 2022 scores as the baseline, representing pre-intervention levels, and the September 2022 scores as the endline for assessing post-intervention outcomes.	Stress, Test Scores, Teacher Attendance.	Cognitive Behavioral Therapy, Psychopharmacological Therapy, Mindfulness Meditation	Mindfulness Meditation (MM) and CBT effectively reduce stress, with psychopharmacological aid showing less impact.
Reshaping beliefs about ourselves and others: Experimental Evidence from civil servants in Pakistan	400 teachers and their 10,000 students of PEN in province of Sindh.	All treatments was rolled out in January 2022. The baseline survey was carried out in the second week of January, the midline survey in August, and the endline on 17th December 2022.	Growth Mindset Scores, Student Test Scores.	Growth Mindset Treatment, Narrative Treatment, Empirical Evidence Treatment	Growth mindset training shifts teachers' beliefs about malleability of intelligence, and reduces stereotypes against first-generation learners and students from disadvantaged backgrounds. In contrast, exposure to narrative or empirical evidence about teacher value-added did not have statistically significant effects.

Note: The table presents a synthesis of five distinct studies conducted in collaboration with the Private Education Network (PEN) in Pakistan during the 2020s. The first three studies listed were carried out in the same Punjab PEN schools, while the last two studies also included PEN schools from Sindh province. The studies cover various samples, timelines, outcomes, and treatments, with details provided within the table. It is important to note that the samples across these studies are not identical, except for the first three papers, which utilized the same sample of 52 PEN schools and 607 teachers in Pakistan's Punjab Province.

Figure B2: Lesson Plans of Teachers

Panel A: Lesson Plan of Teacher A in English

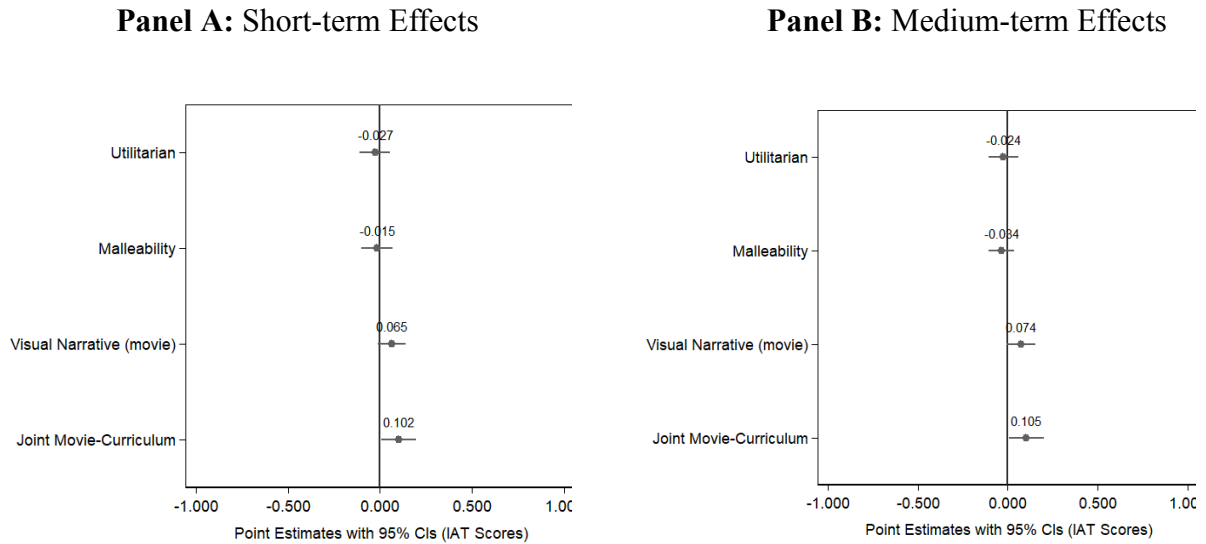
Subject/ Date	Topic/ Page#	No. of Periods	Pedagogical Strategy/Teaching Methodology	Resource Material (AV Aids)	Assign- ment
	SLOs / ELOs		Q → Would you want the job of your mother or your father, when you grow up? Part 1 :- Ask the class on what their mothers' & fathers' do. Part 2 :- Ask the class, what they would choose to become, from what their parents do? Part 3 :- Show them the following pictures. 	- Book - Pictures - Board.	Write a note on what your job in future is more likely to look like? And does it resemble any of your parent's job?
	SLOs / ELOs		Part 4 :- Initiate an open discussion on what the children choose from the above pictures as their job & why?		

Panel B: Lesson Plan of Teacher B in Urdu

Subject/ Date	Topic/ Page#	No. of Periods	Pedagogical Strategy/Teaching Methodology	Resource Material (AV Aids)	Assign- ment
	SLOs / ELOs		۱۔ کیا آپ اپنی امی اور ابو کی نوکری کو بڑے ہو کر اپنا چاہیں گے۔ ۲۔ معاہدہ سے پوچھیں کہ آپ کے امی ابو کیا کرتے ہیں ۳۔ معاہدہ سے پوچھیں کہ وہ اپنی امی ابو کی ملازمتوں میں سے کس ملازمت کا انتخاب کریں گے۔ ۴۔ بچوں کو معاہدہ سے دیکھا جائے۔	کتابیں آپ اپنے معاہدہ یو آر	مستقل ہیں آپ اپنے امی ابو کی ملازمت کو اپنا چاہیں اور
	SLOs / ELOs				
	SLOs / ELOs		۵۔ بحث و مباحثہ قائم کریں اور ہر دی گئی معاہدہ پر		

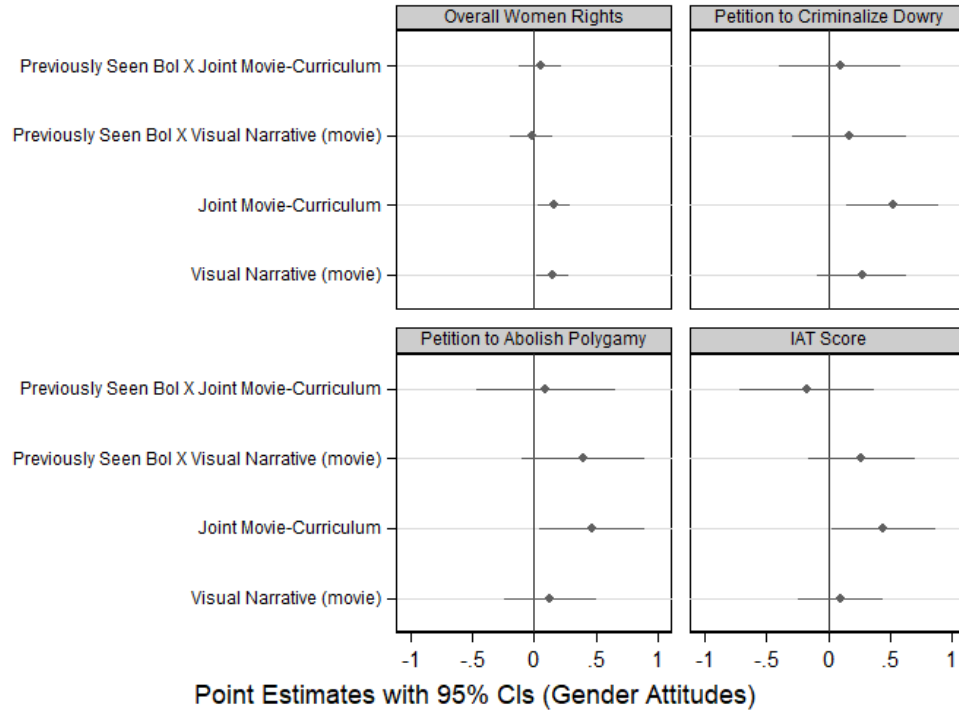
Note: The teachers entered the gender rights curriculum in their daily lesson plan logs and taught in the language they were most comfortable with. Teacher in Panel A logged her teaching activities in English, while the teacher in Panel B logged it in Urdu.

Figure B3: Impact of Utilitarian, Malleability, Bol Movie, and Bol Movie and Curriculum Treatments on Original IAT Scale



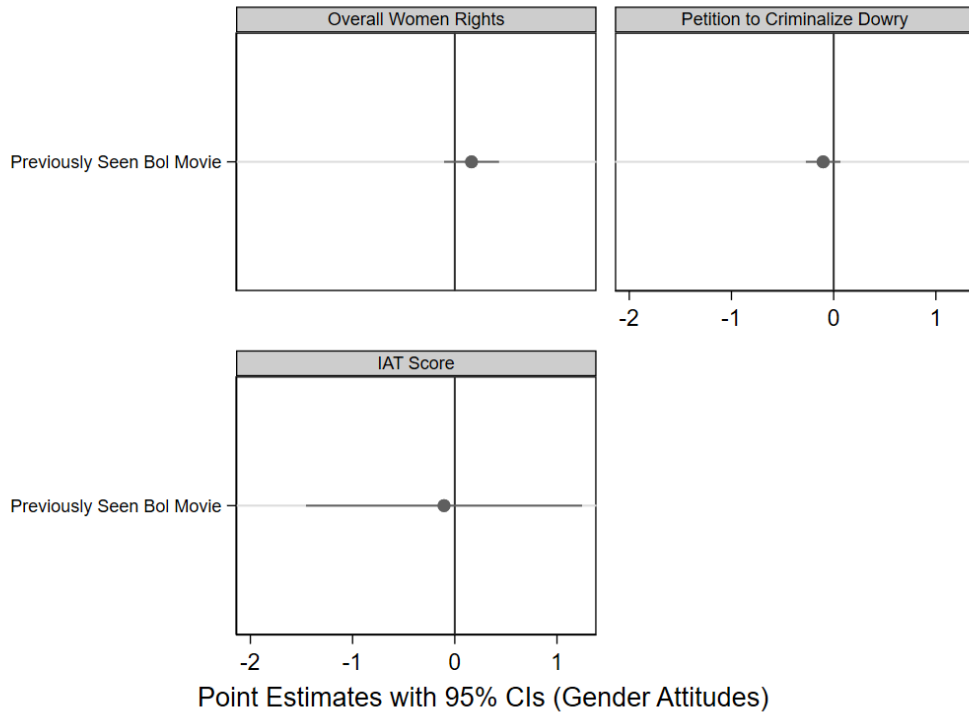
Note: The figure reports estimates from equation (1) with all controls. In Panel A, the raw IAT (Implicit Association Test) score in original units is used as a dependent variable with the effect shown in the short-term (6 months). The IAT value ranges from -1 to 1 (Greenwald et al., 2009). If the magnitude is less than 0.15 (for both positive & negative scores), the score shows, there is little to no association. If the magnitude is between 0.15 and 0.35 (for both positive & negative scores), the score shows, there is slight association. If the magnitude is between 0.35 and 0.65 (for both positive & negative scores), the score shows, there is moderate association. If the magnitude is greater than 0.65 (for both positive & negative scores), the score shows, there is strong association. In Panel B, medium-term or a year after treatment effects are shown. Controls include all individual characteristics and school fixed effects. 95% confidence bands are also reported.

Figure B4: Impact of Previously Seeing the Bol Movie



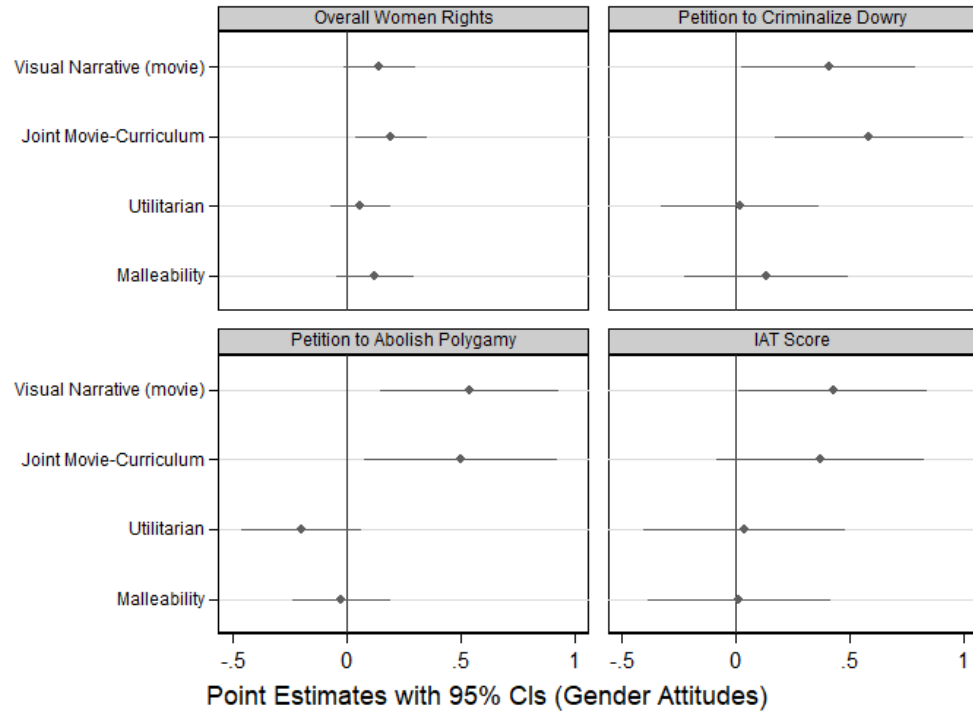
Note: The figure for Panel A reports estimates from equation (1) with all controls and school fixed effects with Gender Rights Index, Petitions and IAT as the dependent variables in each panel above. The dependent variables are standardized to mean zero and standard deviation one. The *Previously Seen Bol* is a dummy variable that switches on if the teacher is reported to have previously seen the Bol movie. *Visual narrative (movie)* represents the visual narrative treatment of the movie Bol augmented with the 30-minute structured discussion of gender rights themes in the movie. *Joint Movie-Curriculum* is the dummy that switches one for participants who received the visual narrative of the movie (along with the structured discussion) together with the gender studies curriculum. The teacher level controls include years of teaching experience, educational qualification, professional qualification, average teaching hours, class size, and marital status. 95% Confidence Intervals are also reported.

**Figure B5: Gender Attitudes, Petitions and IAT and Previously Seen Bol
Movie for the Control Group Subsample**



Note: The figure report estimates from regression for Gender Rights Index, Petitions and IAT as the dependent variables in each panel, respectively. The dependent variables are standardized to mean zero and standard deviation one. The Previously Seen Bol is a dummy variable that switches on if the teacher is reported to have previously seen the Bol movie. No one in the control group who had previously watched the "Bol" movie signed the petition against polygamy. The teacher level controls include years of teaching experience, educational qualification, professional qualification, average teaching hours, class size, and marital status. 95% Confidence Intervals are also reported.

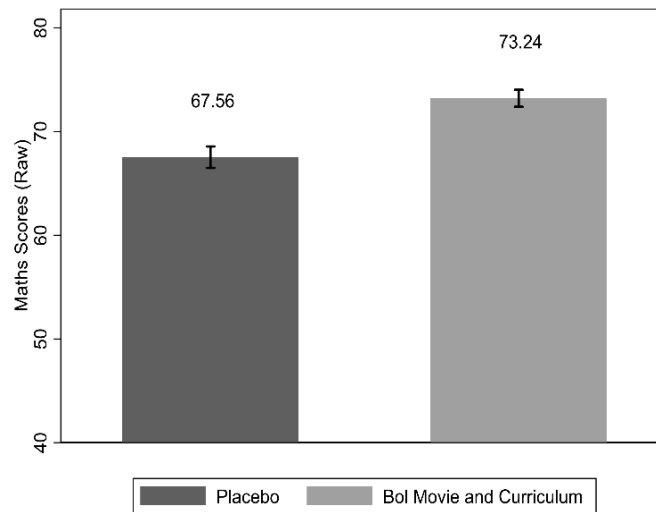
Figure B6: Effect of Visual Narrative and Joint Treatment on the Teachers for the Ever Watched Bol Subsample of Teachers



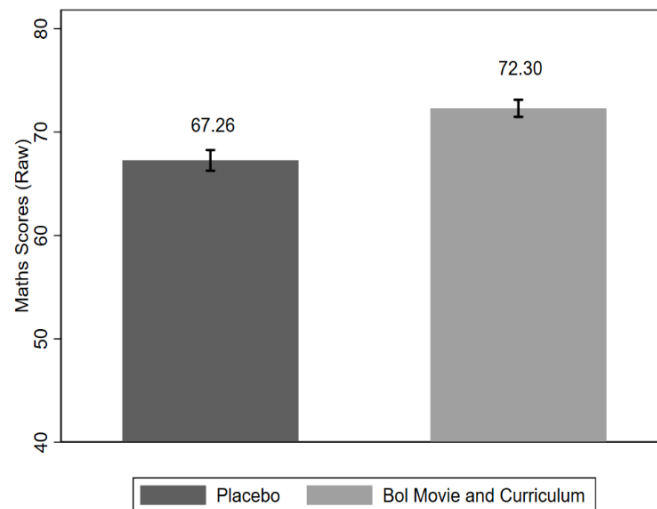
Note: The figure report estimates from equation (1) for people who have previously watched ‘Bol’ movie with all controls. The dependent variables are Gender Rights Index, Petitions to parliament and gender IAT test. The dependent variables are standardized to mean zero and standard deviation one. Visual narrative (movie) represents the movie Bol augmented with the 30-minute structured discussion of gender rights themes in the movie. Joint Movie-Curriculum is the dummy that switches one for participants who received the visual narrative of the movie (along with the structured discussion) together with the gender studies curriculum. The teacher level controls include years of teaching experience, educational qualification, professional qualification, average teaching hours, class size, and marital status. 95% Confidence Intervals are also reported.

Figure B7: Difference in Math Scores following Joint Movie-Curriculum and Placebo treatments by Type of Study Group
Mixed-Gender Study Group

Panel A: Short-term Effects

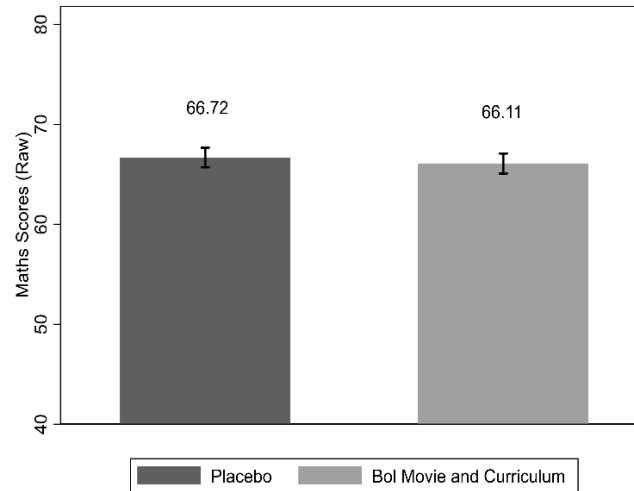


Panel B: Medium-term Effects

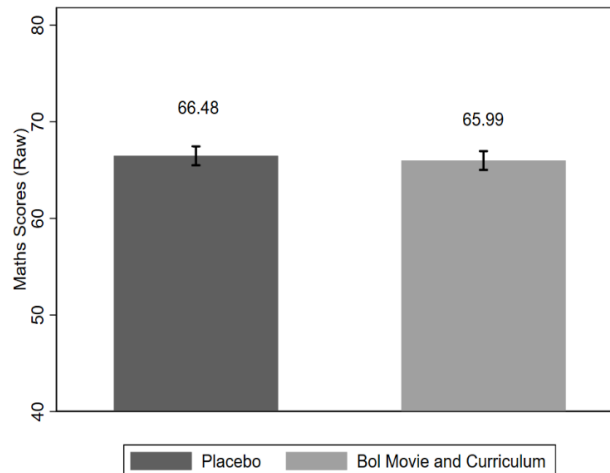


Same-Gender Study Group

Panel C: Short-term Effects



Panel D: Medium-term Effects

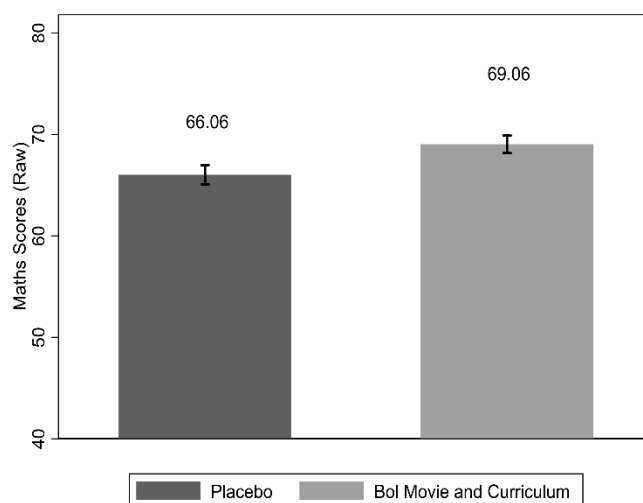


Note: Short-term and medium-term mathematics scores are shown on the right and left, respectively. Short-term effects in Panel A and C are recorded 6 months after the treatment and medium-term effects in Panel B and D are recorded twelve months after the treatment. Scores range from 0 to 100. The upper panels (Panel A and B) display scores for mixed-gender study groups, the lower panels (Panel C and D) for same-gender study groups, comparing students' average scores under the joint movie-curriculum treatment with the placebo group. 95% confidence bands are also reported.

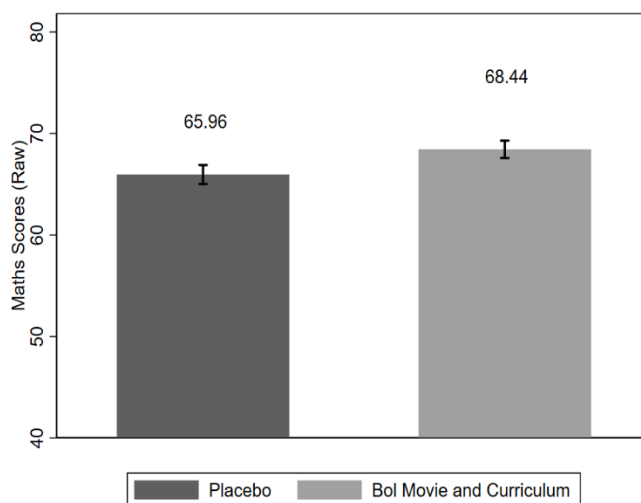
**Figure B8: Difference in Math Scores following Joint Movie-Curriculum and
Placebo treatments
by Gender**

Boys' Mathematics Scores

Panel A: Short-term Effects

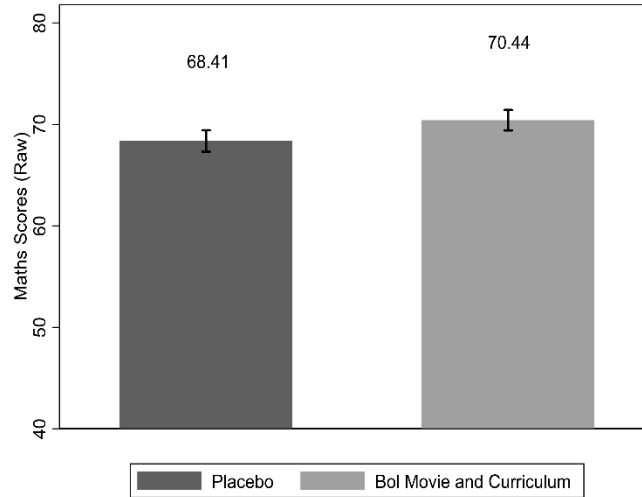


Panel B: Medium-term Effects

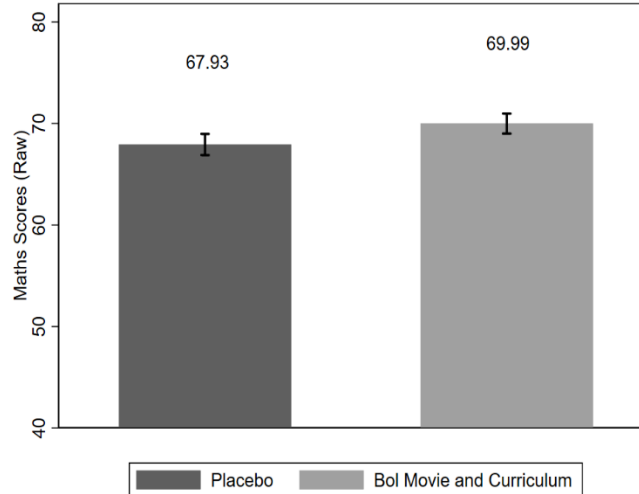


Girls' Mathematics Scores

Panel C: Short-term Effects



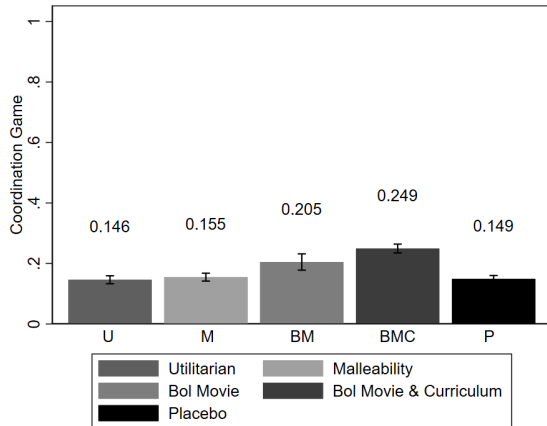
Panel D: Medium-term Effects



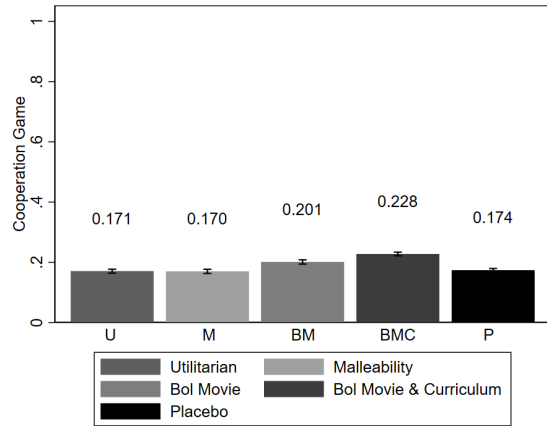
Note: Short-term and medium-term mathematics scores are shown on right and left, respectively. Short-term effects in Panel A and C are recorded 6 months after the treatment and medium-term effects in Panel B and D are recorded twelve months after the treatment. Scores range from 0 to 100. The upper panels (Panel A and B) display math scores for boys, the lower panels for girls.

Figure B9: Game fielded with the Opposite Gender

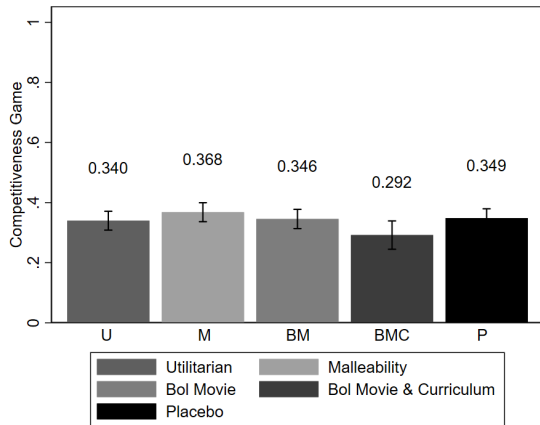
Panel A: Coordination



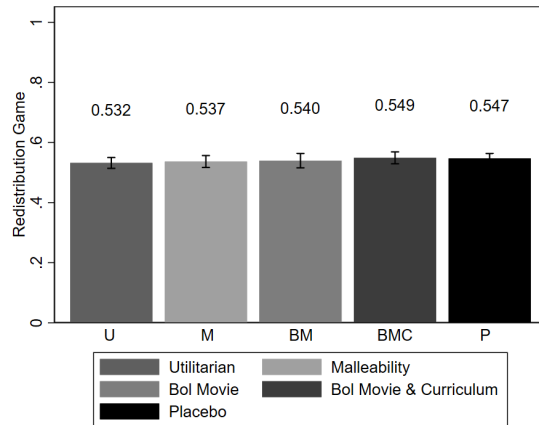
Panel B: Cooperation



Panel C: Competitiveness



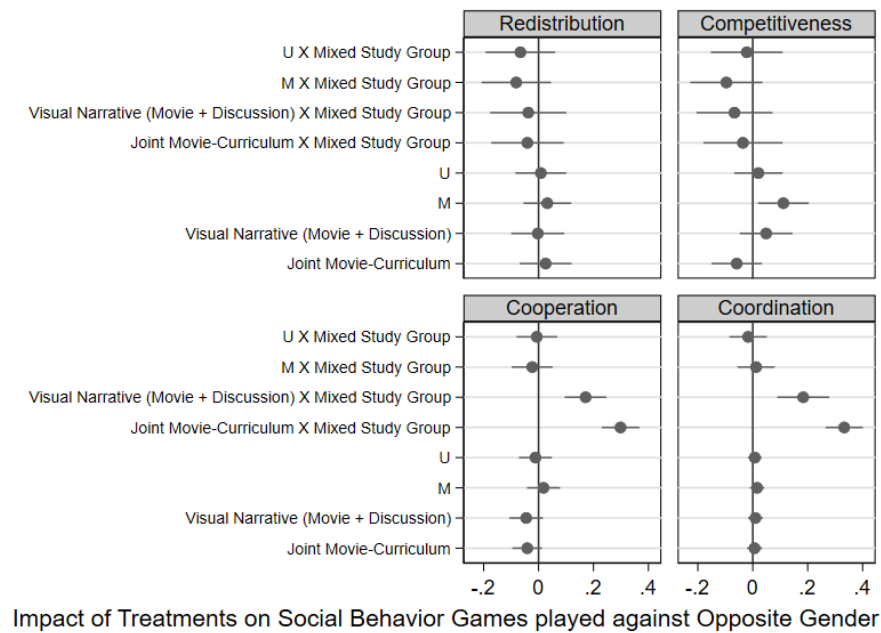
Panel D: Redistribution



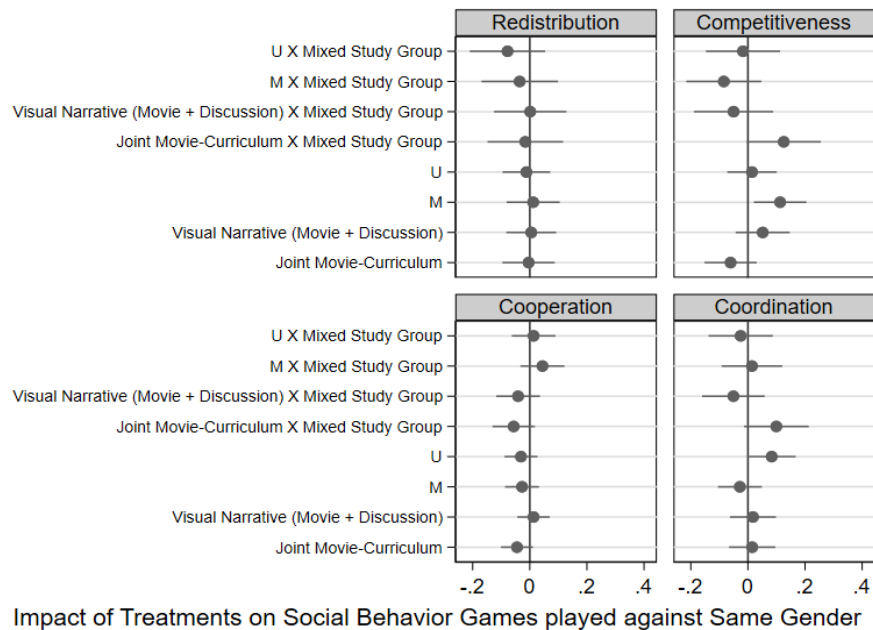
Note: Figure above displays averages on outcomes on redistribution, competitiveness, cooperation, and coordination games in their respective marked panels when the student is playing against the opposite gender. The figures show the level effects of all treatments.

Figure B10: Impact of Treatments on Social Behavior Games played against Opposite vs Same Gender

Panel A: Opposite Gender



Panel B: Same Gender



Note: Figure above displays outcomes on redistribution, competitiveness, cooperation, and coordination games in their respective marked panels when the student is playing against the opposite gender. The figures show the level effects of all treatments as well as interactive effects with mixed (Panel A) versus same-gender (Panel B) study group.

Table B1.1: Summary Statistics

Panel A: Teacher Data					
	Obs	Mean	Std. Dev.	Min	Max
Overall Women's Rights (short-term)	607	1.537	.363	1	3.563
IAT Score (short-term)	495	.051	.308	-.928	1.116
Overall Women's Rights (medium-term)	607	1.628	.368	1	3.750
Petition Against Dowry	607	.114	.318	0	1
Petition Against Polygamy	607	.03	.17	0	1
IAT Score (medium-term)	527	.062	.301	-.999	1.124
Teaching Experience	607	4.608	2.957	0	18
Years of Education	607	12.679	1.511	10	18
Professional Qualification	607	.259	.438	0	1
Panel B: Student Data					
	Obs	Mean	Std. Dev.	Min	Max
Gender	13,911	.511	0.500	0	1
Kindergarten	13,911	.169	.375	0	1
Grade 1	13,911	.163	.369	0	1
Grade 2	13,911	.173	.379	0	1
Grade 3	13,911	.153	.360	0	1
Grade 4	13,911	.144	.351	0	1
Grade 5	13,911	.131	.337	0	1
Pre-Treatment Gender Index	13,911	77.703	18.334	5	100
Pre-Treatment Math Score	13,911	66.269	20.451	1	99
Students' Gender Attitudes	13,911	82.566	18.881	3	100.4
Students' Math Scores	13,911	67.416	18.824	-1	102

Note: Overall Women's Rights is an index consisting of average of all 16 statements concerning Women's Economic, Social, Legal, and Political Rights listed in Appendix D. Women's Economic Rights is an index combining women's rights to education and work outside the home, based on reactions to statements "Women should be allowed to work outside the home". "Women and men should have equal rights to jobs". "I have no problem with my sister or female cousin working outside the home". "Daughters should have the same right to inherit property as sons". "Women and men should have equal rights to get an education". "Wives should not be less educated than their husbands". "Boys should not have more opportunities and resources for education than girls." The IAT Score is the gender Implicit Association Test (IAT). Petition Against Dowry is a dummy variable that switches on if the teacher signed a petition sent to parliament seeking criminalization of dowry, while the variable Petition Against Polygamy is a petition to abolish laws allowing polygamy in Pakistan. In Gender, Male notes as 1 and Female as 0. Variables associated with Grade are dummy variables that switch on if a student studies in the corresponding grade. The pre-treatment Gender Index is an index concerning the Gender Attitudes of students before the treatment. Pre-treatment Math Score is the math scores of students before treatment. The total number of available observations, means and standard deviations of variables are also reported.

Table B1.2: Balance over Teacher Characteristics and Pre-Treatment Gender Attitudes

	Pre-Treatment Gender Index	Movie “Bol” Watched	Married	Av. Teaching Hours	Av. Class Size	Teaching Experience	Years of Education	Educational Specialization
<u>Visual narrative (movie)</u>	-0.0720 [0.0775]	0.0869 [0.0675]	-0.0767 [0.0674]	0.418 [0.356]	-2.323 [2.708]	0.0238 [0.400]	0.0719 [0.206]	0.0109 [0.0589]
<u>Joint Movie-Curriculum</u>	0.00463 [0.0789]	0.0598 [0.0688]	-0.0619 [0.0687]	0.130 [0.362]	-1.409 [2.757]	0.481 [0.407]	0.138 [0.210]	-0.0125 [0.0600]
<u>Utilitarian</u>	-0.121 [0.0768]	0.0265 [0.0669]	0.0107 [0.0668]	-0.0927 [0.353]	-0.666 [2.683]	-0.0173 [0.396]	-0.112 [0.204]	-0.0539 [0.0584]
<u>Malleability</u>	-0.0429 [0.0784]	0.0766 [0.0683]	-0.0965 [0.0682]	0.132 [0.360]	-2.167 [2.737]	0.441 [0.404]	-0.0771 [0.209]	-0.0559 [0.0596]
School Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	607	607	607	607	607	607	607	607
R-squared	0.105	0.075	0.078	0.063	0.088	0.075	0.057	0.085
Mean of dependent var	-0.071	0.532	0.473	30.28	24.81	4.608	12.679	0.259
P-value (BM = BMC)	0.329	0.692	0.829	0.424	0.739	0.259	0.752	0.694

Note: Robust standard errors appear in brackets (clustered at teacher level). The treatments are compared relative to the placebo treated control group. Dependent variables are teacher-level individual characteristics. Teaching Experience is years of teaching experience. Years of Education is the number of years of formal studies. Educational Specialization is a dummy variable that switches on for a specialization in Pedagogy. Av. Teaching Hours is the average number of hours taught every week. Av. Class Size is the average number of students in the class. Married is a dummy variable that switches on if a teacher is married. In Panel B, the dependent variables are available student-level individual characteristics and pre-treatment math scores (in the previous year endline tests). Gender is a dummy variable that switches on for a female student. Grades 1 to 6 are dummy variables that switch on for a student from grades one to six, respectively. Pre-Treatment Math Scores are standardized math scores held a year before our treatment. The outcomes are recorded 12 months after the treatment. 'Utilitarian' variable is a binary indicator that assumes a value of one upon the teacher's receipt of the corresponding treatment, analogous to the 'Malleability' treatment indicator. 'Visual Narrative (Movie)' is similarly a dummy turning on for subjects assigned the Bol Movie. The 'Joint Movie and Curriculum' indicator turns on for teachers assigned the joint Bol Movie and the Gender-rights Curriculum treatment. Each treatment is followed by a 30-minute structured discussion, the particulars of which are delineated in Table A3. The treatments are compared relative to the placebo treated control group. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table B1.3: Balance over Student Characteristics and Pre-Treatment Gender Attitudes

	Gender	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Pre-Treatment Gender Index	Pre-Treatment Math Score
<u>Visual narrative (movie)</u>	-0.00445 [0.0243]	0.0242 [0.0454]	0.0863* [0.0480]	-0.0392 [0.0464]	0.0162 [0.0442]	-0.0448 (0.0358)	0.00101 (0.0267)	-0.0202 (0.0552)
<u>Joint Movie-Curriculum</u>	0.00169 [0.0272]	-0.0483 [0.0443]	0.0598 [0.0481]	-0.0690 [0.0455]	0.00437 [0.0414]	0.0846* (0.0450)	-0.0360 (0.0271)	-0.0469 (0.0618)
<u>Utilitarian</u>	-0.00107 [0.0274]	0.0814* [0.0490]	-0.0348 [0.0446]	-0.0456 [0.0473]	-0.0323 [0.0419]	0.0579 (0.0412)	-0.0272 (0.0267)	0.0770 (0.0592)
<u>Malleability</u>	0.0168 [0.0277]	-0.00418 [0.0467]	0.0208 [0.0458]	-0.0111 [0.0491]	-0.0235 [0.0413]	0.0385 (0.0442)	0.00069 (0.0266)	0.0166 (0.0599)
School Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	13,932	13,932	13,932	13,932	13,932	13,932	13,932	13,932
R-squared	0.360	0.046	0.034	0.019	0.039	0.039	0.005	0.098
Mean of dependent var	0.511	0.163	0.173	0.153	0.144	0.131	0.000	0.000
P-value (BM = BMC)	0.795	0.099*	0.604	0.489	0.794	0.002***	0.185	0.661

Note: Robust standard errors appear in brackets (clustered at teacher level). The treatments are compared relative to the placebo treated control group. The dependent variables are available student-level individual characteristics and pre-treatment math scores (in the previous year endline tests). Gender is a dummy variable that switches on for a female student. Grades 1 to 6 are dummy variables that switch on for a student from grades one to six, respectively. Pre-Treatment Math Scores are standardized math scores held a year before our treatment. The outcomes are recorded 12 months after the treatment. 'Utilitarian' variable is a binary indicator that assumes a value of one upon the teacher's receipt of the corresponding treatment, analogous to the 'Malleability' treatment indicator. 'Visual Narrative (Movie)' is similarly a dummy turning on for subjects assigned the Bol Movie. The 'Joint Movie and Curriculum' indicator turns on for teachers assigned the joint Bol Movie and the Gender-rights Curriculum treatment. Each treatment is followed by a 30-minute structured discussion, the particulars of which are delineated in Table A3. The treatments are compared relative to the placebo treated control group. *** p<0.01, ** p<0.05, * p<0.1

Table B1.4: Balance over Teacher and Student Characteristics by Mixed versus Same Gender Study Group

Panel A: Teacher Characteristics									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
	Movie “Bol” Watched	Married	Av. Teaching Hours	Av. Class Size	Teaching Experience	Years of Education	Pre-Treatment Gender Index	Educational Specialization	
Mixed Study Group	-0.0310 [0.0425]	0.0098 [0.0426]	0.0610 [0.2400]	-0.2920 [1.674]	0.1910 [0.2490]	0.0074 [0.1300]	0.0116 [0.0485]	-0.0059 [0.0373]	
School Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Observations	607	607	607	607	607	607	607	607	
R-squared	0.072	0.072	0.059	0.086	0.071	0.054	0.099	0.082	
Mean of dependent var	0.532	0.473	30.28	24.81	4.608	12.679	-0.071	0.259	
Panel B: Student Characteristics									
	Gender	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Pre-Treatme nt Gender Index	Pre-Treatment Math Score	General Knowledge
Mixed Study Group	-0.0090 [0.0159]	0.0143 [0.0296]	0.0240 [0.0299]	-0.0202 [0.0279]	0.0119 [0.0265]	-0.0080 [0.0276]	-0.0007 [0.0175]	-0.0424 [0.0386]	-0.0150 [0.0451]
School Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	13,932	13,932	13,932	13,932	13,932	13,932	13,932	13,932	13,932
R-squared	0.359	0.035	0.023	0.015	0.037	0.023	0.005	0.097	0.116
Mean dep. var.	0.511	0.163	0.173	0.153	0.144	0.131	0.000	0.000	0.000

Note: Robust standard errors appear in brackets (clustered at teacher level). The treatments are compared relative to the placebo treated control group. In Panel A, the dependent variables are teacher-level individual characteristics. Teaching Experience is years of teaching experience. Years of Education is the number of years of formal studies. Educational Specialization is a dummy variable that switches on for a specialization in Pedagogy. Av. Teaching Hours is the average number of hours taught every week. Av. Class Size is the average number of students in the class. Married is a dummy variable that switches on if a teacher is married. In Panel B, the dependent variables are available student-level individual characteristics and pre-treatment math scores (in the previous year endline tests). Gender is a dummy variable that switches on for a female student. Grades 1 to 6 are dummy variables that switch on for a student from grades one to six, respectively. Pre-Treatment Math Scores are standardized math scores held a year before our treatment. *Mixed Study Group* is a dummy variable that switches on when the students are assigned the mixed-gender study group. The outcomes are in levels to show the raw changes. The outcomes are recorded 12 months after the treatment. 'Utilitarian' variable is a binary indicator that assumes a value of one upon the teacher's receipt of the corresponding treatment, analogous to the 'Malleability' treatment indicator. 'Visual Narrative (Movie)' is similarly a dummy turning on for subjects assigned the Bol Movie. The 'Joint Movie and Curriculum' indicator turns on for teachers assigned the joint Bol Movie and the Gender-rights Curriculum treatment. Each treatment is followed by a 30-minute structured discussion, the particulars of which are delineated in Table A3. The treatments are compared relative to the placebo treated control group.*** p<0.01, ** p<0.05, * p<0.1.

Table B2: Impact of Treatments on Social Behavior Games Played against Same Gender

	<i>Redistribution</i>	<i>Competitiveness</i>	<i>Cooperation</i>	<i>Coordination</i>
	(1)	(2)	(3)	(4)
<u>Movie X Mixed Study Group</u>	0.00175	-0.0502	-0.0410	-0.0508
p-value	(0.9784)	(0.4775)	(0.2940)	(0.3638)
Sharpened q-value	[0.999]	[0.999]	[0.999]	[0.999]
Romano-Wolf corrected p-value	{0.9980}	{0.9530}	{0.8012}	{0.8761}
<u>Movie-Curriculum X Mixed Study Group</u>	-0.0157	0.126*	-0.0564	0.0995*
p-value	(0.8162)	(0.0580)*	(0.1352)	(0.0854)*
Sharpened q-value	[0.999]	[0.999]	[0.999]	[0.999]
Romano-Wolf corrected p-value	{0.9980}	{0.1838}	{0.4845}	{0.2877}
<u>U X Mixed Study Group</u>	-0.0781	-0.0171	0.0134	-0.0253
p-value	(0.2458)	(0.7954)	(0.7304)	(0.6587)
Sharpened q-value	[0.999]	[0.999]	[0.999]	[0.999]
Romano-Wolf corrected p-value	{0.7532}	{0.9980}	{0.9980}	{0.9930}
<u>M X Mixed Study Group</u>	-0.0354	-0.0844	0.0443	0.0141
p-value	(0.6042)	(0.2081)	(0.2580)	(0.7944)
Sharpened q-value	[0.999]	[0.999]	[0.999]	[0.999]
Romano-Wolf corrected p-value	{0.9860}	{0.6813}	{0.7602}	{0.9980}
Playing with Opposite Gender	Yes	Yes	Yes	Yes
Individual Controls & School FE	Yes	Yes	Yes	Yes
Observations	9,145	9,145	9,145	9,145
R-squared	0.010	0.009	0.640	0.012

Note: Dependent variables are outcomes on redistribution, competitiveness, cooperation, and coordination games, respectively standardized to mean zero and standard deviation one. The outcomes are recorded 12 months after the treatment. The outcomes are recorded 12 months after the treatment. 'Utilitarian' variable is a binary indicator that assumes a value of one upon the teacher's receipt of the corresponding treatment, analogous to the 'Malleability' treatment indicator. 'Visual Narrative (Movie)' is similarly a dummy turning on for subjects assigned the Bol Movie. The 'Joint Movie and Curriculum' indicator turns on for teachers assigned the joint Bol Movie and the Gender-rights Curriculum treatment. Each treatment is followed by a 30-minute structured discussion, the particulars of which are delineated in Table A3. The treatments are compared relative to the placebo treated control group. P-values computed using the Newey-West estimator are reported in parentheses, along with the multiple hypothesis-adjusted FDR q-values in square brackets and FWER-adjusted p-values in curly braces (considering 16 hypotheses with 4 treatments X 4 outcomes). Further details on this are provided in Appendix D8 Each student plays the game twice, with the opposite gender (Table 5) and with the same gender (Table B2). The teacher-level controls include years of teaching experience, educational qualification, professional qualification, average teaching hours, class size, and marital status. The student-level controls include dummies for student grade (i.e., KG, Nursery, Prep, one, two, three, four, five and six class) and pre-treatment math scores. *** p<0.01, ** p<0.05, * p<0.1.

Table B3: Impact on Students' Stress

	<i>Stress Likert - Standardized</i>	
<i>Visual Narrative (movie)</i>	0.023 [0.034]	0.022 [0.035]
<i>Joint Movie-Curriculum</i>	0.024 [0.036]	0.025 [0.037]
School Fixed Effects	Yes	Yes
Individual Controls	No	Yes
Observations	8036	8036
R-squared	0.002	0.001
P-value (BM = BMC)	0.973	0.940

Note: Robust standard errors appear in brackets (clustered at the teacher level). The treatments are compared relative to the placebo treated control group. Dependent variable is standardized to mean zero and standard deviation one. The dependent variable is self-reported stress on a Likert Scale of 1-5 standardized to mean zero and standard deviation one. The outcomes are recorded 12 months after the treatment. 'Utilitarian' variable is a binary indicator that assumes a value of one upon the teacher's receipt of the corresponding treatment, analogous to the 'Malleability' treatment indicator. 'Visual Narrative (Movie)' is similarly a dummy turning on for subjects assigned the Bol Movie. The 'Joint Movie and Curriculum' indicator turns on for teachers assigned the joint Bol Movie and the Gender-rights Curriculum treatment. Each treatment is followed by a 30-minute structured discussion, the particulars of which are delineated in Table A3. The teacher level controls include years of teaching experience, educational qualification, professional qualification, average teaching hours, class size, and marital status. The Utilitarian and Malleability treatments are also controlled for in both specifications. The teacher-level controls include years of teaching experience, educational qualification, professional qualification, average teaching hours, class size, and marital status. The student-level controls include dummies for student grade (i.e., KG, Nursery, Prep, one, two, three, four, five and six class) and pre-treatment math scores.*** p<0.01, **p<0.05, * p<0.1.

Table B4: Student Gender Attitudes by Grade

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	<i>Kindergarten</i>	<i>Grade 1</i>	<i>Grade 2</i>	<i>Grade 3</i>	<i>Grade 4</i>	<i>Grade 5</i>	<i>Grade 6</i>
<i>Joint Movie-Curriculum</i>	0.248* (0.143)	0.077 (0.143)	0.553*** (0.121)	0.501*** (0.137)	0.132 (0.140)	0.331** (0.132)	0.174 (0.154)
<i>Visual Narrative (movie)</i>	0.054 (0.134)	-0.039 (0.139)	0.359*** (0.099)	0.283** (0.133)	-0.349** (0.156)	0.011 (0.194)	0.360** (0.149)
Individual Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
School fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3890	3747	4018	3528	3333	3022	1518
R-squared	0.146	0.101	0.110	0.120	0.090	0.155	0.117
P-value (BM = BMC)	0.143	0.463	0.082*	0.134	p < 0.01***	0.032**	0.352

Note: Robust standard errors appear in brackets (clustered at the teacher level). The treatments are compared relative to the placebo treated control group. The dependent variable is students' gender attitudes collected from Student Attitudinal Survey used in the paper. The outcomes are recorded 12 months after the treatment. The corresponding survey statements from students are reported in Appendix D4 in Appendix D. Visual narrative (movie) represents the standalone visual narrative treatment. Joint Movie and Curriculum is the dummy that switches on when the joint movie-curriculum treatment was turned on for the teacher. The teacher level controls include years of teaching experience, educational qualification, professional qualification, average teaching hours, class size, and marital status. The student level controls include the dummies for student grade (i.e., KG, Nursery, Prep, one, two, three, four, five, six) and pre-treatment Math scores. School fixed effects are also included though the results are essentially identical without them. *** p<0.01, ** p<0.05, * p<0.1

Table B5: Heterogeneity by Student Gender

Panel A: Boys	(1)	(2)	(3)	(4)	(5)	(6)
	<i>Gender Attitudes</i>	<i>Math Test Scores</i>	<i>Redistribution</i>	<i>Competitiveness</i>	<i>Cooperation</i>	<i>Coordination</i>
<i>Joint Movie-Curriculum</i>	-0.033 [0.035]	0.181*** [0.067]	-0.015 [0.032]	-0.011 [0.042]	-0.071 [0.124]	0.156*** [0.038]
<i>Visual narrative (movie)</i>	0.059 [0.037]	-0.097 [0.073]	0.022 [0.031]	0.045 [0.046]	-0.079 [0.125]	0.109*** [0.033]
<i>Utilitarian</i>	0.025 [0.037]	0.071 [0.080]	-0.030 [0.030]	0.010 [0.046]	0.086 [0.128]	0.006 [0.034]
<i>Malleability</i>	0.017 [0.035]	0.006 [0.076]	0.007 [0.032]	0.106** [0.048]	-0.024 [0.125]	-0.008 [0.030]
Individual controls	Yes	Yes	Yes	Yes	Yes	Yes
School Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	11715	11705	9196	9196	9196	9196
R-squared	0.004	0.096	-0.001	0.008	0.072	0.005
Panel B: Girls	(1)	(2)	(3)	(4)	(5)	(6)
	<i>Gender Attitudes</i>	<i>Math Test Scores</i>	<i>Redistribution</i>	<i>Competitiveness</i>	<i>Cooperation</i>	<i>Coordination</i>
<i>Joint Movie-Curriculum</i>	-0.049 [0.043]	0.150* [0.082]	0.007 [0.037]	-0.078 [0.053]	0.038 [0.136]	0.077* [0.041]
<i>Visual narrative (movie)</i>	-0.060 [0.039]	0.085 [0.082]	-0.043 [0.036]	-0.006 [0.045]	-0.098 [0.131]	0.020 [0.034]
<i>Utilitarian</i>	-0.073* [0.040]	0.157* [0.083]	-0.044 [0.030]	-0.015 [0.046]	-0.167 [0.128]	0.060** [0.030]
<i>Malleability</i>	0.001 [0.041]	0.019 [0.085]	-0.012 [0.035]	0.006 [0.048]	-0.004 [0.139]	-0.001 [0.034]
Individual controls	Yes	Yes	Yes	Yes	Yes	Yes
School Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	11361	11350	9094	9094	9094	9094
R-squared	0.006	0.095	-0.002	0.006	0.039	-0.001

Note: Dependent variables are outcomes on student gender attitudes, math test scores, behavioral games such as redistribution, competitiveness, cooperation, and coordination, standardized to mean zero and standard deviation one. The outcomes are recorded 12 months after the treatment. Panel A presents the analysis on boys, while Panel B presents the analysis on girls. The outcomes are recorded 12 months after the treatment. 'Utilitarian' variable is a binary indicator that assumes a value of one upon the teacher's receipt of the corresponding treatment, analogous to the 'Malleability' treatment indicator. 'Visual Narrative (Movie)' is similarly a dummy turning on for subjects assigned the Bol Movie. The 'Joint Movie and Curriculum' indicator turns on for teachers assigned the joint Bol Movie and the Gender-rights Curriculum treatment. Each treatment is followed by a 30-minute structured discussion, the particulars of which are delineated in Table A3. The treatments are compared relative to the placebo treated control group. Each student plays the game twice, with the same gender (Table 5) and with the opposite gender (Table B2). The teacher-level controls include years of teaching experience, educational qualification, professional qualification, average teaching hours, class size, and marital status. The student-level controls include dummies for student grade (i.e., KG, Nursery, Prep, one, two, three, four, five and six class) and pre-treatment math scores. Standard errors are clustered at the teacher level.. *** p<0.01, ** p<0.05, * p<0.1.

Table B6: Robustness - Marlowe-Crowne Social Desirability

	(1)	(2)	(3)	(4)
	<i>Women's Rights Overall</i>	<i>Petition to Criminalize Dowry</i>	<i>Petition to Abolish Polygamy</i>	<i>IAT Score</i>
<u>Visual narrative (movie)</u>	0.171*** [0.0577]	0.0947** [0.0464]	0.0749*** [0.0288]	0.245* [0.136]
<u>Joint Movie-Curriculum</u>	0.225*** [0.0587]	0.157*** [0.0497]	0.0930*** [0.0281]	0.346** [0.162]
<u>Utilitarian</u>	0.0737 [0.0531]	-0.0113 [0.0383]	0.00174 [0.0116]	-0.0789 [0.140]
<u>Malleability</u>	0.121** [0.0593]	0.0005 [0.0396]	-0.00491 [0.131]	-0.123 [0.123]
Individual controls	Yes	Yes	Yes	Yes
School Fixed Effects	Yes	Yes	Yes	Yes
Observations	526	526	526	526
R-squared	0.162	0.144	0.21	0.131
P-value (BM = BMC)	0.356	0.26	0.633	0.538

Note: The dependent variables are identical to those used in the regressions in the main text. The treatments are compared relative to the placebo treated control group. The outcomes are recorded 12 months after the treatment. 'Utilitarian' variable is a binary indicator that assumes a value of one upon the teacher's receipt of the corresponding treatment, analogous to the 'Malleability' treatment indicator. 'Visual Narrative (Movie)' is similarly a dummy turning on for subjects assigned the Bol Movie. The 'Joint Movie and Curriculum' indicator turns on for teachers assigned the joint Bol Movie and the Gender-rights Curriculum treatment. Each treatment is followed by a 30-minute structured discussion, the particulars of which are delineated in Table A3. The treatments are compared relative to the placebo treated control group. Specifically, we discard individuals who always answer yes to the following statements: 1) I am never jealous of another person's good fortune 2) I am always a good listener. 3) I am never angry. The teacher-level controls include years of teaching experience, educational qualification, professional qualification, average teaching hours, class size, and marital status. The student-level controls include dummies for student grade (i.e., KG, Nursery, Prep, one, two, three, four, five and six class) and pre-treatment math scores.*** p<0.01, ** p<0.05, * p<0.1

Table B7: Impact on Gender Attitudes and Student Achievement - Assessing Spillovers

Panel A: Teacher Characteristics	(1)	(2)	(3)	(4)
	<i>Women's Rights Overall</i>	<i>Petition to Criminalize Dowry</i>	<i>Petition to Abolish Polygamy</i>	<i>Standardized Gender IAT Score</i>
<i>Fraction of Joint Treated</i>	-0.204	0.167	-0.0329	-1.355
<i>Teachers X Joint Treatment</i>	[0.332]	[0.321]	[0.169]	[1.232]
<i>Joint Movie-Curriculum</i>	0.242**	0.135	0.0957*	0.693*
	[0.106]	[0.0955]	[0.0564]	[0.374]
Individual controls	Yes	Yes	Yes	Yes
School Fixed Effects	Yes	Yes	Yes	Yes
Observations	607	607	607	527
R-squared	0.139	0.141	0.201	0.134
Panel B: Student Characteristics	(1)	(2)	(3)	(4)
	<i>Student Attitudinal Survey</i>		<i>Mathematics Scores</i>	
<i>Fraction of Joint Treated</i>	-0.138	-0.121	0.180	0.158
<i>Teachers X Joint Treatment</i>	[0.308]	[0.306]	[0.327]	[0.165]
<i>Joint Movie-Curriculum</i>	0.290***	0.277***	0.113	0.0772
	[0.0888]	[0.0885]	[0.106]	[0.0544]
Individual controls	No	Yes	No	Yes
School Fixed Effects	Yes	Yes	Yes	Yes
Observations	13,911	13,911	13,911	13,911
R-squared	0.038	0.044	0.090	0.596

Note: Robust standard errors appear in brackets (clustered at the teacher level). The treatments are compared relative to the placebo treated control group. The dependent variable in Column (1) is an index consisting of 16 gender rights statements fielded concerning Women's Economic, Social, Legal and Political Rights. The statements can be found in Appendix D2. In Column 2, the dependent variable is a petition sent to the Pakistani parliament to criminalize dowry, while the dependent variable in Column (3) is a petition to abolish the law that allows polygamy in Pakistan. Column (4) has the dependent variable on gender Implicit Association Test (IAT). All dependent variables are standardized to mean zero and standard deviation one. The Fraction of Joint Treated Teachers is the proportion of teachers treated with the joint treatment within schools. The outcomes are recorded 12 months after the treatment. 'Utilitarian' variable is a binary indicator that assumes a value of one upon the teacher's receipt of the corresponding treatment, analogous to the 'Malleability' treatment indicator. 'Visual Narrative (Movie)' is similarly a dummy turning on for subjects assigned the Bol Movie. The 'Joint Movie and Curriculum' indicator turns on for teachers assigned the joint Bol Movie and the Gender-rights Curriculum treatment. Each treatment is followed by a 30-minute structured discussion, the particulars of which are delineated in Table A3. The treatments are compared relative to the placebo treated control group. The teacher level controls include years of teaching experience, educational qualification, professional qualification, average teaching hours, class size, and marital status. The student level controls include the dummies for student grade (i.e., KG, Nursery, Prep, one, two, three, four, five, six) and pre-treatment Math scores. School fixed effects are also included. *** p<0.01, ** p<0.05, * p<0.1

**Table B8: Impact of schools more intensely treated by the Visual Narrative
on Gender Attitudes**

Panel A: Utilitarian Treated Group						
	(1)	(2)	(3)	(4)	(5)	(6)
	<i>Gender Rights Index</i>		<i>Petition</i>		<i>Gender IAT Score</i>	
<i>Fraction Treated with the Visual Narrative</i>	0.00558 [0.0107]	0.00366 [0.0103]	0.00447 [0.0124]	0.00498 [0.0115]	-0.0686 [0.0476]	-0.0736 [0.0575]
Individual Controls	No	Yes	No	Yes	No	Yes
Observations	121	121	121	121	107	107
R-squared	0.002	0.041	0.002	0.082	0.022	0.101
Panel B: Malleability Treated Group						
<i>Fraction Treated with the Visual Narrative</i>	0.00753 [0.0153]	0.00967 [0.0151]	0.000161 [0.0066]	0.00144 [0.0058]	-0.00493 [0.0258]	-0.00749 [0.0259]
Individual Controls	No	Yes	No	Yes	No	Yes
Observations	121	121	121	121	121	121
R-squared	0.002	0.042	0.000	0.031	0.000	0.035
Panel C: Placebo Treated Group						
<i>Fraction Treated with the Visual Narrative</i>	-0.0153 [0.0126]	-0.0157 [0.0121]	-0.00409 [0.0075]	-0.00329 [0.0085]	-0.0234 [0.0315]	-0.0198 [0.0327]
Individual Controls	No	Yes	No	Yes	No	Yes
Observations	122	122	122	122	85	85
R-squared	0.010	0.104	0.002	0.063	0.003	0.094

Note: Robust standard errors appear in brackets (clustered at the teacher level). The treatments are compared relative to the placebo treated control group. The dependent variable in Column 1 and 2 is an index consisting of 16 gender rights statements fielded concerning Women's Economic, Social, Legal and Political Rights. The statements can be found in Appendix D2. In Column 3 and 4, the dependent variable is a signed petition sent to the Pakistani parliament to criminalize dowry, Column 5 and 6 estimates the main specification with the gender Implicit Association Test (IAT) as the dependent variable. All dependent variables in this table are *standardized* to mean zero and standard deviation one. Panel A represents the Utilitarian treated group, Panel B represents the Malleability treated group and Panel C represents the Placebo treated group. The *Fraction of Visual Narrative Treated Teachers* is the proportion of teachers treated with the *Visual Narrative* treatment within schools. *Visual narrative* represents the visual narrative treatment of the movie Bol with a structured discussion of gender rights themes in the movie. The teacher level controls include years of teaching experience, educational qualification, professional qualification, average teaching hours, class size, and marital status. The student level controls include the dummies for student grade (i.e., KG, Nursery, Prep, one, two, three, four, five, six) and students' pre-treatment gender rights index. *** p<0.01, ** p<0.05, * p<0.1

Table B9: Impact of schools more intensely treated by the Joint Treatment on Gender Attitudes

Panel A: Utilitarian Treated Group						
	(1)	(2)	(3)	(4)	(5)	(6)
	<i>Gender Rights Index</i>		<i>Petition</i>		<i>Gender IAT Score</i>	
<i>Fraction Treated with</i>	0.489*	0.532*	-0.112	-0.122	-0.340	-0.130
<i>Joint Movie-Curriculum</i>	[0.264]	[0.274]	[0.185]	[0.189]	[0.785]	[0.757]
Individual Controls	No	Yes	No	Yes	No	Yes
Observations	121	121	121	121	107	107
R-squared	0.033	0.078	0.003	0.084	0.001	0.076
Panel B: Malleability Treated Group						
<i>Fraction Treated with</i>	-0.0490	-0.0542	-0.0851	-0.0626	0.930	0.932
<i>Joint Movie-Curriculum</i>	[0.222]	[0.243]	[0.147]	[0.150]	[0.624]	[0.699]
Individual Controls	No	Yes	No	Yes	No	Yes
Observations	121	121	121	121	121	121
R-squared	0.000	0.038	0.002	0.032	0.028	0.060
Panel C: Placebo Treated Group						
<i>Fraction Treated with</i>	-0.170	-0.233	0.153	0.213	-0.0417	0.383
<i>Joint Movie-Curriculum</i>	[0.253]	[0.274]	[0.180]	[0.170]	[0.723]	[0.746]
Individual Controls	No	Yes	No	Yes	No	Yes
Observations	122	122	122	122	85	85
R-squared	0.004	0.102	0.007	0.075	0.000	0.095

Note: Robust standard errors appear in brackets (clustered at the teacher level). The treatments are compared relative to the placebo treated control group. The dependent variable in Column 1 and 2 is an index consisting of 16 gender rights statements fielded concerning Women's Economic, Social, Legal and Political Rights. The statements can be found in Appendix D2. In Column 3 and 4, the dependent variable is a signed petition sent to the Pakistani parliament to criminalize dowry, Column 5 and 6 estimates the main specification with the gender Implicit Association Test (IAT) as the dependent variable. All dependent variables in this table are standardized to mean zero and standard deviation one. Panel A presents the analysis on the Utilitarian treated teachers, Panel B the Malleability treated teachers and Panel C the Placebo treated group. The *Fraction of Joint Treated Teachers* is the proportion of teachers treated with the joint treatment within schools. *Joint* represents the visual narrative treatment of the movie Bol with a structured discussion of gender rights themes in the movie. The teacher level controls include years of teaching experience, educational qualification, professional qualification, average teaching hours, class size, and marital status. The student level controls include the dummies for student grade (i.e., KG, Nursery, Prep, one, two, three, four, five, six) and students' pre-treatment gender rights index. *** p<0.01, ** p<0.05, * p<0.1.

Table B10: Impact of Previously Bol Fraction of Teachers on Gender Attitudes in Control Group

	(1)	(2)	(3)	(4)	(5)	(6)
	<i>Gender Rights Index</i>		<i>Petition</i>		<i>Gender IAT Score</i>	
<i>Fraction of Teachers Who Previously Watched Bol Movie</i>	-0.143 [0.229]	-0.0786 [0.232]	0.155 [0.188]	0.159 [0.194]	0.044 [0.574]	0.273 [0.586]
Individual Controls	No	Yes	No	Yes	No	Yes
Observations	122	122	122	122	85	85
R-squared	0.003	0.065	0.007	0.065	0.000	0.091

Note: Robust standard errors appear in brackets (clustered at the teacher level). The treatments are compared relative to the placebo treated control group. The dependent variable in Column 1 and 2 is an index consisting of 16 gender rights statements fielded concerning Women's Economic, Social, Legal and Political Rights. The statements can be found in Appendix D2. In Column 3 and 4, the dependent variable is a dummy variable that switches on if the petition is sent to the Pakistani parliament to criminalize dowry, Column 5 and 6 estimates the main specification with the gender Implicit Association Test (IAT) as the dependent variable. All dependent variables in this table are standardized to mean zero and standard deviation one. Table presents the analysis on the Placebo treated group. The Fraction of Previously Watched Bol Movie is the proportion of teachers in the control group who previously watched 'Bol' movie. The teacher level controls include years of teaching experience, educational qualification, professional qualification, average teaching hours, class size, and marital status. The student level controls include the dummies for student grade (i.e., KG, Nursery, Prep, one, two, three, four, five, six) and students' pre-treatment gender rights index. *** p<0.01, ** p<0.05, * p<0.1.

Table B11: Impact of Treatment on Social Behavior - Same Gender Study

	Group			
	<i>Redistribution</i>	<i>Competitiveness</i>	<i>Cooperation</i>	<i>Coordination</i>
	(1)	(2)	(3)	(4)
<u>Visual Narrative (Movie)</u>	-0.0287	0.0590	-0.0124	0.0109
p-value	(0.4031)	(0.2189)	(0.5843)	(0.5994)
Sharpened q-value	[0.999]	[0.999]	[0.999]	[0.999]
Romano-Wolf corrected p-value	{0.961}	{0.8361}	{0.9920}	{0.9920}
<u>Joint Movie-Curriculum</u>	0.00190	-0.0546	-0.0214	0.0185
p-value	(0.9569)	(0.2368)	(0.3295)	(0.3511)
Sharpened q-value	[0.999]	[0.999]	[0.999]	[0.999]
Romano-Wolf corrected p-value	{0.999}	{0.860}	{0.945}	{0.9460}
<u>Utilitarian</u>	-0.00327	0.0320	-0.0188	0.0435
p-value	(0.9199)	(0.4509)	(0.3956)	(0.0321)**
Sharpened q-value	[0.999]	[0.999]	[0.999]	[0.318]
Romano-Wolf corrected p-value	{0.999}	{0.967}	{0.961}	{0.176}
<u>Malleability</u>	-0.00475	0.130	0.00262	-0.000158
p-value	(0.886)	(0.0047)***	(0.914)	(0.9937)
Sharpened q-value	[0.999]	[0.082]*	[0.999]	[0.999]
Romano-Wolf corrected p-value	{0.999}	{0.0240}**	{0.999}	{0.999}
Playing with Opposite Gender	Yes	Yes	Yes	Yes
Individual Controls & School FE	Yes	Yes	Yes	Yes
Observations	9,048	9,048	9,048	9,048
R-squared	0.007	0.020	0.010	0.003

Note: Dependent variables are outcomes on redistribution, competitiveness, cooperation, and coordination games, respectively standardized to mean zero and standard deviation one. The outcomes are recorded 12 months after the treatment. The outcomes are recorded 12 months after the treatment. 'Utilitarian' variable is a binary indicator that assumes a value of one upon the teacher's receipt of the corresponding treatment, analogous to the 'Malleability' treatment indicator. 'Visual Narrative (Movie)' is similarly a dummy turning on for subjects assigned the Bol Movie. The 'Joint Movie and Curriculum' indicator turns on for teachers assigned the joint Bol Movie and the Gender-rights Curriculum treatment. Each treatment is followed by a 30-minute structured discussion, the particulars of which are delineated in Table A3. The treatments are compared relative to the placebo treated control group. The treatments are compared relative to the placebo treated control group. Each student is playing against the Opposite Gender in this table, as also emphasized by a row in the table. The teacher-level controls include years of teaching experience, educational qualification, professional qualification, average teaching hours, class size, and marital status. P-values computed using the Newey-West estimator are reported in parentheses, along with the multiple hypothesis-adjusted FDR q-values in square brackets and FWER-adjusted p-values in curly braces (considering 16 hypotheses with 4 treatments X 4 outcomes). The student-level controls include dummies for student grade (i.e., KG, Nursery, Prep, one, two, three, four, five and six class) and pre-treatment math scores. *** p<0.01, ** p<0.05, * p<0.1.

Appendix C. Short-Run Results - 6 Months Post-Treatment

Table C1: Impact on Teachers' Attitude - Short-Term Results

<i>Women's:</i>	<i>Rights Overall</i>	<i>Economic Rights</i>	<i>Political Rights</i>	<i>Social Rights</i>	<i>Legal Rights</i>
	(1)	(2)	(3)	(4)	(5)
<u>Visual narrative (movie)</u>	0.129	0.152	0.222	0.0252	0.210
p-value	(0.0365)**	(0.0267)**	(0.0774)*	(0.7323)	(0.0875)*
Sharpened q-value	[0.108]	[0.135]	[0.157]	[0.628]	[0.158]
Romano-Wolf corrected p-value	{0.061}*	{0.048}**	{0.1728}	{0.920}	{0.1958}
<u>Joint Movie-Curriculum</u>	0.208	0.241	0.389	0.0474	0.312
p-value	(0.0007)***	(0.001)***	(0.002)***	(0.5238)	(0.0086)***
Sharpened q-value	[0.011]**	[0.094]*	[0.013]**	[0.487]	[0.038]**
Romano-Wolf corrected p-value	{0.001}***	{0.001}***	{0.002}***	{0.8651}	{0.012}**
<u>Utilitarian</u>	0.0542	0.0579	0.0571	0.0780	-0.0209
p-value	(0.2969)	(0.3654)	(0.5702)	(0.2558)	(0.8236)
Sharpened q-value	[0.296]	[0.354]	[0.505]	[0.291]	[0.701]
Romano-Wolf corrected p-value	{0.6763}	{0.7722}	{0.8691}	{0.6543}	{0.920}
<u>Malleability</u>	0.0984	0.132	0.153	0.0306	0.0959
p-value	(0.1125)	(0.0553)*	(0.2544)	(0.6688)	(0.4464)
Sharpened q-value	[0.187]	[0.135]	[0.291]	[0.592]	[0.424]
Romano-Wolf corrected p-value	{0.2537}	{0.1179}	{0.6543}	{0.9201}	{0.8531}
Individual controls	Yes	Yes	Yes	Yes	Yes
School Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	607	607	607	607	607
R-squared	0.134	0.111	0.126	0.116	0.137
P-value BM = BMC	.226	.251	.231	.767	.455

Note: The figure summarizes our main results – effect of the treatments on the different indices summarizing attitudes to women rights. The treatments are compared relative to the placebo treated control group. The outcomes are recorded 6 months after the treatment. Women's Rights Overall is an index consisting of all the statements concerning Women's Economic, Social, Legal and Political Rights. Women's Economic Rights is an index combining women's rights to education and work outside home, based on reactions to statements "Women should be allowed to work outside the home". "Women and men should have equal rights to jobs". "I have no problem with my sister or female cousin working outside the home". "Daughters should have the same right to inherit property as sons". "Women and men should have equal rights to get an education". "Wives should not be less educated than their husbands". "Boys should not have more opportunities and resources for education than girls." Women's Political Rights is based on statements "It would be a good idea to elect a woman as the village Sarpanch (local politician)." "Women and men have equal rights to be President or Prime Minister." Women's Social Rights is based on statements "Domestic violence by husbands cannot be justified" "Parents should seek their daughter's consent before fixing her marriage". "A woman should not necessarily get married before her 25th Birthday". "Women who give birth to a son need not be honored in the family". "A woman with five daughters should not be under social pressure to bear a son." Finally, the Women's Legal Rights index is based on statements "Laws should be passed to ban dowry." "Under Article 35 of the Constitution of Pakistan & Judgment of Federal Shariat Court, the consent of 'Wali' is not required and a sui juris Muslim female can enter into a valid Nikah / Marriage under her own free will without the consent of Wali. To what extent do you approve of this legal right of women to enter marriage under their own free will." Equation (1) is estimated with all controls and explanatory variables. Utilitarian is a dummy variable that switches on when the teacher receives this type of treatment, same for Malleability treatment. Visual narrative is a dummy that switches on for participants receiving the Bol Movie treatment. Joint Movie and Curriculum is a dummy that switches on for participants receiving the Bol Movie and Gender-rights Curriculum treatment. P-values are robust and presented with the MHT FDR and FWER corrections described in Appendix D8 (considering 20 hypotheses with 4 treatments X 5 outcomes). The teacher-level controls include years of teaching experience, educational qualification, professional qualification, average teaching hours, class size, and marital status. The student-level controls include dummies for student grade (i.e., KG, Nursery, Prep, one, two, three, four, five and six class) and pre-treatment math scores.*** p<0.01, ** p<0.05, * p<0.1.

Table C2: Impact on Standardized Student Math Test Scores by Students Gender - Short-Term Results

	<i>Math Test Scores</i>				
	(1)	(2)	(3)	(4)	(5)
<u>Visual narrative (movie)</u>	-0.0426	-0.00777	-0.0205	0.00319	-0.0013
p-value	(0.2626)	(0.8116)	(0.518)	(0.9174)	(0.9657)
Sharpened q-value	[0.829]	[0.999]	[0.999]	[0.999]	[0.999]
Romano-Wolf corrected p-value	{0.3826}	{0.988}	{0.7842}	{0.999}	{0.999}
<u>Joint Movie-Curriculum</u>	0.175***	0.0467	0.159***	0.104***	0.0584*
p-value	p < 0.01***	(0.1993)	p < 0.01***	(0.001)***	(0.0754)*
Sharpened q-value	[0.001]***	[0.829]	[0.001]***	[0.008]***	[0.472]
Romano-Wolf corrected p-value	{0.0010}***	{0.2168}	{0.001}***	{0.001}***	{0.026}**
<u>Utilitarian</u>	0.0384	0.0457	0.0322	0.0323	0.0449
p-value	(0.2792)	(0.1854)	(0.3398)	(0.3337)	(0.1835)
Sharpened q-value	[0.829]	[0.829]	[0.829]	[0.829]	[0.829]
Romano-Wolf corrected p-value	{0.4026}	{0.2088}	{0.4845}	{0.4845}	{0.2088}
<u>Malleability</u>	-0.000233	-0.0268	0.0300	-0.0136	-0.001
p-value	(0.9946)	(0.4411)	(0.318)	(0.6632)	(0.9853)
Sharpened q-value	[0.999]	[0.999]	[0.829]	[0.999]	[0.999]
Romano-Wolf corrected p-value	{0.999}	{0.6733}	{0.4785}	{0.9191}	{0.999}
Movie-Curriculum X Mixed Study					0.139*** (0.0461)
<i>Movie X Mixed Study Group</i>					-0.0255 (0.0480)
<i>U X Mixed Study Group</i>					-0.0239 (0.0482)
<i>M X Mixed Study Group</i>					0.005 (0.0462)
<i>Mixed Study Group</i>					0.0105 (0.0302)
Students are Girls			No	Yes	
Mixed-gender Study Group Sample	Yes	No			
Individual Controls & School FE	Yes	Yes	Yes	Yes	Yes
Observations	6,973	6,959	7,117	6,815	13,932
P-value BM = BMC	<0.001***	0.132	<0.001***	0.002***	0.082*

Note: The dependent variable is the standardized math scores. The treatments are compared relative to the placebo treated control group. The outcomes are recorded 6 months after the treatment. Utilitarian is a dummy variable that switches on when the teacher receives this type of treatment, same for Malleability treatment. Visual narrative is a dummy that switches on for participants receiving the Bol Movie treatment. Joint Movie and Curriculum is a dummy that switches on for participants receiving the Bol Movie and Gender-rights Curriculum treatment. P-values are robust and presented with the MHT FDR and FWER corrections described in Appendix D8 (considering 20 hypotheses with 4 treatments X 5 outcomes). Mixed Study Group is a dummy that switches on when the student study group is mixed-gender. *U X Mixed Study Group*, *M X Mixed Study Group*, *Movie X Mixed Study Group*, and *Joint Movie-Curriculum X Mixed Study Group* are interaction terms of Mixed Study Group with U, M, movie, and joint movie-curriculum treatments, respectively. The teacher-level controls include years of teaching experience, educational qualification, professional qualification, average teaching hours, class size, and marital status. The student-level controls include the dummies for student grade and pre-treatment math scores. *** p<0.01, ** p<0.05, * p<0.1.

Table C3: Impact of Teachers' Training on Students' Attitudes and Math Test Scores - Short-Term Results

	<i>Student Attitudinal Survey</i>		<i>Maths</i>	
	(1)	(2)	(3)	(4)
<u>Visual narrative (movie)</u>	0.107*	0.105**	-0.0136	-0.0124
p-value	(0.0754)*	(0.0479)**	(0.8374)	(0.6001)
Sharpened q-value	[0.178]	[0.13]	[0.772]	[0.392]
Romano-Wolf corrected p-value	{0.005}***	{0.002}***	{0.963}	{0.6464}
<u>Joint Movie-Curriculum</u>	0.276***	0.278***	0.178***	0.129***
p-value	p < 0.01***	p < 0.01***	(0.0049)***	p < 0.01***
Sharpened q-value	[0.001]***	[0.001]***	[0.017]***	[0.001]***
Romano-Wolf corrected p-value	{0.001}***	{0.001}***	{0.001}***	{0.001}***
<u>Utilitarian</u>	-0.0554	-0.0944	0.113	0.0320
p-value	(0.4324)	(0.1111)	(0.1001)	(0.1987)
Sharpened q-value	[0.459]	[0.182]	[0.182]	[0.284]
Romano-Wolf corrected p-value	{0.2787}	{0.011}**	{0.01}**	{0.049}**
<u>Malleability</u>	-0.00359	0.00128	-0.000381	0.00102
p-value	(0.9585)	(0.9831)	(0.9954)	(0.9657)
Sharpened q-value	[0.772]	[0.772]	[0.772]	[0.772]
Romano-Wolf corrected p-value	{0.997}	{0.999}	{0.999}	{0.999}
Individual controls	No	Yes	No	Yes
School Fixed Effects	Yes	Yes	Yes	Yes
Observations	13,932	13,932	13,932	13,932
R-squared	0.084	0.183	0.108	0.716
P-value BM = BMC	<0.001***	<0.001***	0.0045***	<0.001***

Note: The dependent variables are standardized to mean zero and standard deviation for Math scores and attitudinal. The treatments are compared relative to the placebo treated control group. The outcomes are recorded 6 months after the treatment. The corresponding survey statements from students are reported in Appendix D4. Utilitarian is a dummy variable that switches on when the teacher receives this type of treatment, same for Malleability treatment. Visual narrative is a dummy that switches on for participants receiving the Bol Movie treatment. Joint Movie and Curriculum is a dummy that switches on for participants receiving the Bol Movie and Gender-rights Curriculum treatment. P-values are robust and presented with the MHT FDR and FWER corrections described in Appendix D8 (considering 16 hypotheses with 4 treatments X 4 outcomes). The teacher-level controls include years of teaching experience, educational qualification, professional qualification, average teaching hours, class size, and marital status. The student-level controls include dummies for student grade (i.e., KG, Nursery, Prep, one, two, three, four, five and six class) and pre-treatment math scores. *** p<0.01, ** p<0.05, * p<0.1.

D. Data Appendix: Survey and Data Details

Appendix D1. Consent

For teachers:

I agreed to participate in the research study. I understand the purpose and nature of this study and I am participating voluntarily. I understand that I can withdraw from the study at any time, without any penalty or consequences.

Yes ☒ No ☐

I grant permission for the data generated from this survey to be used in the researcher's publications on this topic.

Yes ☒ No ☐

I grant permission to researchers to use my anonymized information for research purposes and this includes my personal data with PEN.

Yes ☒ No ☐

For parents:

I grant permission to researchers to use my son or daughter's anonymized information for research purposes and this includes the personal data with PEN.

Yes ☒ No ☐

Appendix D2. Gender Rights Survey fielded to Teachers

Likert Scale:

1. Totally Disagree
2. Disagree
3. Neutral
4. Agree
5. Totally Agree

S1. Women should be allowed to work outside the home.

S2. Women and men should have equal rights to jobs.

S3. I have no problem with my sister or female cousin from working outside the home.

S4. Daughters should have a similar right to inherited property as sons.

S5. Women and men should have equal rights to get an education as men.

S6. Wives should not be less educated than their husbands.

S7. Boys should not get more opportunities and resources for education than girls

S8. It would be a good idea to elect a woman as the village Sarpanch (local politician).

S9. Women and men have equal rights to be President or Prime Minister.

S10. Domestic violence by husbands cannot be justified.

S12. Women should not necessarily get married before her 25th Birthday.

S13. Women who give birth to a son need not be honored in the family.

S14. A woman with five daughters should not be under social pressure to bear a son.

S15. Laws should be passed to ban dowry.

S16. Under Article 35 of the Constitution of Pakistan & Judgment of Federal Shariat Court, the consent of 'Wali' is not required and a sui juris Muslim female can enter into a valid Nikah / Marriage under her own freewill without the consent of Wali. How much do you approve of this legal right of women to enter marriage under their own freewill.

Appendix D3. Procedure for Index Construction

Gender rights index averages across all components of gender rights survey questions listed previously. Women's Rights Overall is an index consisting of all the statements concerning Women's Economic, Social, Legal and Political Rights i.e. all the 16 statements in section D2. Women's Economic Rights is an index combining women rights relevant to education and work outside home i.e. statements 1 to 7. Women's Political rights is an index of statements 8 and 9, while women's social rights is based on statements 10 to 14. Finally, the legal rights index combines statements 15 and 16.

Specifically, Women's Rights Overall is an index consisting of all the statements concerning Women's Economic, Social, Legal and Political Rights. Women's Economic Rights is an index combining women rights relevant to education and work outside home i.e. statements "Women should be allowed to work outside the home". "Women and men should have equal rights to jobs". "I have no problem with my sister or female cousin from working outside the

home”. “Daughters should have a similar right to inherited property as sons”. “Women and men should have equal rights to get an education as men”. “Wives should not be less educated than their husbands”. “Boys should not get more opportunities and resources for education than girls.”. Women’s Political rights is an index of statements “It would be a good idea to elect a woman as the village Sarpanch (local politician).” “Women and men have equal rights to be President or Prime Minister.”, while women's social rights index is based on statements “Domestic violence by husbands cannot be justified” “Parents should seek their daughter's consent before fixing her marriage”. “Women should not necessarily get married before her 25th Birthday”. “Women who give birth to a son need not be honored in the family”. “A woman with five daughters should not be under social pressure to bear a son.”. Finally, the legal rights index combines statements “Laws should be passed to ban dowry. Under Article 35 of the Constitution of Pakistan & Judgment of Federal Shariat Court, the consent of ‘Wali’ is not required and a sui juris Muslim female can enter into a valid Nikah / Marriage under her own freewill without the consent of Wali. How much do you approve of this legal right of women to enter marriage under their own freewill.”

Appendix D4. Petition Details and Template Presented to all teachers

The petitions are likely high-stakes for two reasons. First, sending a petition to parliament with teachers’ names and national identity card numbers in a conservative society amounts to a revealed preference measure of gender attitudes and can be seen as women exerting their political rights. Second, such a gesture may have economic, social, and political repercussions for public school teachers. We administer this via attaching two blank petitions with our endline survey that gives an opportunity to sign a petition to the Pakistani parliament to both treated and control teachers to abolish polygamy and criminalize dowry. We then send all the petitions to the parliamentary committee on protection of women

at the National Assembly of Pakistan where debates on these bills are currently taking place. The empty petition text was provided to all teachers in a separate room with our instructions attempting to reduce experimental demand by explicitly mentioning that the teachers are free not to sign the petition and leave it blank if they wish to do so. The text of the blank petitions with exact instructions that were provided to all teachers, including those in the control group, can be found in this appendix. The specific petitions provided with instructions are below.

Petition Instructions and Text

Please fill this in a separate room individually. Please also note that we will actually send this petition to the National Assembly of Pakistan, so feel free to leave one or both petitions blank if you wish not to send one or both of these petitions.

Polygamy Petition

I, ----- (enter full name), daughter of -----, am signing this petition to request the complete ban on polygamy.

I hereby grant permission to send this petition to demand from the National Assembly and Senate of Pakistan to repeal the Muslim family law pertaining to polygamy. The law is as follows:

“6. Polygamy.– (1) No man, during the subsistence of an existing marriage, shall, except with the previous permission in writing of the Arbitration Council, contract another marriage, nor shall any such marriage contracted without such permission be registered under this Ordinance.

(2) An application for permission under sub-section (1) shall be submitted to the Chairman in the prescribed manner, together with the prescribed fee, and shall state reasons for the proposed marriage, and whether the consent of existing wife or wives has been obtained thereto.

(3) On receipt of the application under sub-section (2), the Chairman shall ask the applicant and his existing wife or wives each to nominate a representative, and the Arbitration Council so constituted may, if satisfied that the proposed marriage is necessary and just, grant, subject to such conditions, if any, as may be deemed fit, the permission applied for.”

Yours Truly,

Your CNIC:

Your Full Name:

Dowry Petition

I, ----- (enter full name), daughter of -----, am signing this petition to request the complete ban and criminalization of dowry.

I hereby grant permission to send this petition to demand from the National Assembly and Senate of Pakistan to make dowry a criminal offense pertaining imprisonment for up to three years.

Yours Truly,

CNIC:

Your Full Name:

Appendix D5. IAT Test Details. Gender IAT in Urdu with an English translation

Press "E"	Press "I"
Woman	Men

1

This page contains instructions. The game starts on the next page.

No word appears:
Press your finger left key "**E**" for the kind words **she**.
Press the key with your right index finger. Words for "**I**" Type **Male**.

X appears during an error. Correct the error by pressing the correct key.
Go as fast as possible while making some mistakes.

Click **space bar** to start.

1

اس صفحے میں ہدایات ہیں۔ کھیل اگلے صفحے پر شروع ہوتا ہے۔

جب کوئی لفظ ظاہر ہوتا ہے:

کے لئے کے الفاظ قسم **عورت** "E" دبائیں آپ کی بائیں طرف کی انگلی کی چابی پر

کے لئے کے الفاظ قسم **مرد** "I" اپنی دائیں شہادت کی انگلی سے کلید دبائیں۔

ایک غلطی کے دوران، صحیح کی کو دبائے سے غلطی کو درست کریں۔ **X** ظاہر ہوتا ہے

جتنی جلدی ہو سکے جائز ممکن ہو سکے کے طور پر کچھ غلطیاں کرتے ہوئے

شروع کرنے کے لئے **space bar** پر کلک کریں

Press "E"

Family

Press "I"

Career

2

This page contains instructions. The game starts on the next page.

No word appears:

Press your finger left key "E" for the kind words Family.

Press the key with your right index finger. Words for "I" Type Career.

X appears during an error. Correct the error by pressing the correct key.

Go as fast as possible while making some mistakes.

Click **space bar to** start.

2

اس صفحے میں ہدایات ہیں۔ کھیل اگلے صفحے پر شروع ہوتا ہے۔

جب کوئی لفظ ظاہر ہوتا ہے:

کے لئے کے الفاظ قسم کنہ "E" دبائیں آپ کی بائیں طرف کی انگلی کی چابی پر
کے لئے کے الفاظ قسم کیریئر "I" اپنی دائیں شہادت کی انگلی سے کلید دبائیں۔

ایک غلطی کے دوران، صحیح کی کو دبائے سے غلطی کو درست کریں۔ X ظاہر ہوتا ہے
جتنی جلدی ہو سکے جائز ممکن ہو سکے کے طور پر کچھ غلطیاں کرتے ہوئے

شروع کرنے کے لئے space bar پر کلک کریں

Press "E"

Woman

O

Family

Press "I"

Men

O

Career

3

This page contains instructions. The game starts on the next page.

No word appears:

Press your finger left key "E" for Woman y Family.

Press the key with your right index finger. for "I" Men y Career.

Each word belongs to only one type.

X appears during an error. Correct the error by pressing the correct key.

Go as fast as possible while making some mistakes.

Click **space bar** to start.

دبائیں "I" پر

مرد

O

کیریئر

دبائیں "E" پر

عورت

O

کنہ

3

اس صفحے میں ہدایات ہیں۔ کھیل اگلے صفحے پر شروع ہوتا ہے۔

جب کوئی لفظ ظاہر ہوتا ہے

کنہ y کے لئے عورت "E" دبائیں آپ کی بائیں طرف کی انگلی کی چابی پر

کیریئر y کے لئے مرد "I" اپنی دائیں شہادت کی انگلی سے کلید دبائیں۔

ہر لفظ صرف ایک ہی سے تعلق رکھتا ہے قسم

ایک غلطی کے دوران، صحیح کی کو دبائے سے غلطی کو درست کریں۔ X ظاہر ہوتا ہے

جتنی جلدی ہو سکے جائز ممکن ہو سکے کے طور پر کچھ غلطیاں کرتے ہوئے

شروع کرنے کے لئے space bar پر کلک کریں

Press "E"

Woman

O

Family

Press "I"

Men

O

Career

4

This page contains instructions. The game starts on the next page.

No word appears:

Press your finger left key "E" for Woman y Family.

Press the key with your right index finger. for "I" Men y Career.

Each word belongs to only one type.

X appears during an error. Correct the error by pressing the correct key.

Go as fast as possible while making some mistakes.

Click **space bar to** start.

دبائیں "I" پر

مرد

O

کیریئر

دبائیں "E" پر

عورت

O

کنہ

4

اس صفحے میں ہدایات ہیں۔ کھیل اگلے صفحے پر شروع ہوتا ہے۔

جب کوئی لفظ ظاہر ہوتا ہے

کنہ y کے لئے عورت "E" دبائیں آپ کی بائیں طرف کی انگلی کی چابی پر

کیریئر y کے لئے مرد "I" اپنی دائیں شہادت کی انگلی سے کلید دبائیں۔

ہر لفظ صرف ایک ہی سے تعلق رکھتا ہے قسم

ایک غلطی کے دوران، صحیح کی کو دبائے سے غلطی کو درست کریں۔ X ظاہر ہوتا ہے

جتنی جلدی ہو سکے جائز ممکن ہو سکے کے طور پر کچھ غلطیاں کرتے ہوئے

شروع کرنے کے لئے space bar پر کلک کریں

Press "E"

Men

Press "I"

Woman

5

This page contains instructions. The game starts on the next page.

No word appears:

Press your finger left key "E" for the kind words **Men**.

Press the key with your right index finger. Words for "I" Type **Woman**.

X appears during an error. Correct the error by pressing the correct key.

Go as fast as possible while making some mistakes.

Click **space bar** to start.

5

اس صفحے میں ہدایات ہیں۔ کھیل اگلے صفحے پر شروع ہوتا ہے۔

جب کوئی لفظ ظاہر ہوتا ہے

کے لئے کے الفاظ قسم **مرد** "E" دبائیں آپ کی بائیں طرف کی انگلی کی چابی پر

کے لئے کے الفاظ قسم **عورت** "I" اپنی دائیں شہادت کی انگلی سے کلید دبائیں۔

ایک غلطی کے دوران، صحیح کی کو دبائے سے غلطی کو درست کریں۔ **X** ظاہر ہوتا ہے

جتنی جلدی ہو سکے جائز ممکن ہو سکے کے طور پر کچھ غلطیاں کرتے ہوئے

شروع کرنے کے لئے **space bar** پر کلک کریں

Press "E"

Men

O

Family

Press "I"

Woman

O

Career

6

This page contains instructions. The game starts on the next page.

No word appears:

Press your finger left key "E" for Men y Family.

Press the key with your right index finger. for "I" Woman y Career.

Each word belongs to only one type.

X appears during an error. Correct the error by pressing the correct key.

Go as fast as possible while making some mistakes.

Click **space bar** to start.

دبائیں "I" پر

عورت

O

کیرینر

دبائیں "E" پر

مرد

O

کنہ

6

اس صفحے میں ہدایات ہیں۔ کھیل اگلے صفحے پر شروع ہوتا ہے۔

جب کوئی لفظ ظاہر ہوتا ہے

کنہ y کے لئے مرد "E" دبائیں آپ کی بائیں طرف کی انگلی کی چابی پر

کیرینر y کے لئے عورت "I" اپنی دائیں شہادت کی انگلی سے کلید دبائیں۔

ہر لفظ صرف ایک ہی سے تعلق رکھتا ہے قسم

ایک غلطی کے دوران۔ صحیح کی کو دبائے سے غلطی کو درست کریں۔ X ظاہر ہوتا ہے

جتنی جلدی ہو سکے جائز ممکن ہو سکے کے طور پر کچھ غلطیاں کرتے ہوئے

شروع کرنے کے لئے space bar پر کلک کریں

Press "E"

Men

O

Family

Press "I"

Woman

O

Career

7

This page contains instructions. The game starts on the next page.

No word appears:

Press your finger left key "E" for Men y Family.

Press the key with your right index finger. for "I" Woman y Career.

Each word belongs to only one type.

X appears during an error. Correct the error by pressing the correct key.

Go as fast as possible while making some mistakes.

Click **space bar** to start.

دبائیں "E" پر

مرد

O

کنہ

دبائیں "I" پر

عورت

O

کیرینر

Z

اس صفحے میں ہدایات ہیں۔ کھیل اگلے صفحے پر شروع ہوتا ہے۔

جب کوئی لفظ ظاہر ہوتا ہے:

کنہ y کے لئے مرد "E" دبائیں آپ کی بائیں طرف کی انگلی کی چابی پر

کیرینر y کے لئے عورت "I" اپنی دائیں شہادت کی انگلی سے کلید دبائیں۔

ہر لفظ صرف ایک ہی سے تعلق رکھتا ہے قسم

ایک غلطی کے دوران، صحیح کی کو دبائے سے غلطی کو درست کریں۔ X ظاہر ہوتا ہے

جتنی جلدی ہو سکے جائز ممکن ہو سکے کے طور پر کچھ غلطیاں کرتے ہوئے

شروع کرنے کے لئے space bar پر کلک کریں

Appendix D6. General Knowledge Exam Embedded Survey on Gender Attitudes for Students

Likert Scale:

1. Totally Disagree
2. Disagree
3. Neutral
4. Agree
5. Totally Agree

S1. I think my mama should be allowed to work outside the home.

S2. Boys and girls should get the same opportunities to study.

S3. Girls should not be less educated than boys.

S4. Girls like boys can also become pilots.

S5. My mama can be the school principal “headmaster”.

Appendix D7. Details on Strategic Dilemmas with Students

Instructions. You will participate in four activities that will give you the opportunity to win milk carton(s). You will win milk carton coupons which you can exchange at your school canteen. Each credit you win will allow you to win a milk carton. If at any point, you feel confused or need help about instructions of the activity, feel free to reach out to one of the helping staff who will be happy to explain the activity. Our staff is only here to help you. We now request you to open the piece of papers provided to you and begin your activities. Good luck.

1. Cooperation Game

In this game, you play with another participant **for 4 turns**.

You keep the same partner during the 4 turns.

[4 variations:

Condition 1: The second participant is called [name]

Condition 2: The second participant is also in your class.

Condition 3: The second participant comes from another school.

Condition 4: The second participant comes from another class.

Note: the identity of the second player changes each turn.

Each turn, you both receive an initial endowment of 10 credit that can be changed into a milk carton at your canteen (1 credit = 1 milk coupon)

Decision on your part

You must decide how much of this initial endowment you wish to transfer to the other participant (between 0 and 10 credit). The transferred quantity will be doubled, and the other participant will receive this doubled quantity. What you choose not to transfer remains in your possession but however will not be doubled.

Decision (simultaneous) from your partner

The other participant simultaneously makes the same decision. He decides how much of his initial endowment he wishes to transfer to you (between 0 and 10 credit). You will receive double this transferred amount.

Your winnings on a round are calculated as the sum of what you keep (from your initial

endowment) plus double what the other participant transfers to you. The helping staff will help you with this.

At the end of each round, you will be able to know the decision made by the other participant and how many credits you have won on that round.

The First round will start on the next page.

Please choose how much of your initial endowment (between 0 and 10 credit) you wish to transfer to the other participant.

Please use a multiple of 1 credits: ____ credit (s)

You can view the score of round 1 on the Next page. The helping staff will fill it for you.

[Next Page: The helping staff will fill this out for you

You have transferred ____ credits to the other participant on this round.

The other participant transferred ____ credits to you.

This means that you have earned ____ credits and the other participant has earned ____ credits.

*This game will repeat for 3 more rounds

2. **Coordination Game**

In this game, you will interact with another participant for 4 rounds.

4 variations:

Condition 1: The second participant is called [name]...

Condition 2: The second participant is also in your class.

Condition 3: The second participant comes from another school.

Condition 4: The second participant comes from another class.

Each round, each of you has the choice between two options: A and B.

Your winnings are shown in the table below

(your winnings are in blue pen, your partner's in black pen)

If you choose option A, you earn 3 credits (regardless of the choice of the other participant). The other participant also receives 3 credits if he has also chosen option A. Conversely, if he has chosen option B, the other participant receives nothing, while you will get 3 credits

Please keep in mind that 1 credit that can be changed into a milk carton at your canteen (1 credit = 1 coupon)

If you choose option B and the other participant also chooses option B, you both receive 5 credits. However, if you choose option B and the other participant chooses Option A, you get nothing while the other participant will receive 3 credits.

As you can see in the Table below:

		Other Participant's Choice	
		Option A	Option B
Your Choice	Option A	3 Credit, 3 Credit	3 Credit, 3 Credit
	Option B	3 Credit, 3 Credit	5 Credit, 5 Credit

The next page will allow you to make your choices.

Once you have both chosen your option, the RAs will let you know your choice, the choice of the other participant, and the credits you are entitled to.

After this the next round will begin where you can choose between A and B again.

When you are ready, please let our the helping staff know

You have chosen option __ for this round. The other participant chose the __ option for this round. This means you have earned __ credits and the other participant __ credits.

Please continue to the next round and choose a new option.

3. Redistribution Game

In this game, you determine the credits that two other participants (A and B) will receive.

[4 variations:

Condition 1: Participant A is called[name] Participant B is called[name]

Condition 2: Participant A is in your class. Participant B is in another school.

Condition 3: Participant A is in another school. Participant B is in your class.

Condition 4: Participant A is in your class. Participant Bis in another school

Step 1

The two participants were randomly matched, then __ **credits** were allocated to participant A and __ **credit** to participant B (randomly).

Between them, the two participants therefore won 10 credits.

Please keep in mind that 1 credit that can be changed into a milk carton at your canteen (1 credit = 1 coupon)

Which distribution do you want to choose for participants A and B?

Current distribution	Your Distribution	
	Participant A	Participant B
Participant A receives 9 credits and Participant B receives 1 credit.		

Participant A receives 8 credits and Participant B receives 2 credits.		
Participant A receives 7 credits and Participant B receives 3 credits.		
Participant A receives 6 credits and Participant B receives 4 credits.		
Participant A receives 5 credits and Participant B receives 5 credits.		
Participant A receives 4 credits and Participant B receives 6 credits.		
Participant A receives 3 credits and Participant B receives 7 credits.		
Participant A receives 2 credits and Participant B receives 8 credits.		
Participant A receives 1 credit and Participant B		

receives 9 credits.		
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Use the Page now that the helping staff gives you.

4. Competition Game

In this game, our staff will give a piece of paper with a scale, you have to draw a line in the middle of a horizontal line going from 0 to 100. Our staff member will show you how to play this game. The goal is to draw the line in the middle nearest to the number 50.

[As shown in the picture below]



3 ✓

>



2 ✓

The next page will contain 48 of these axes. You will have 2 minutes to correctly place the greatest number of cursors out of 50.

Each correct positioning will earn you credits and you choose between two options to receive credits.

Option A: You receive **0.2 credits** for each cursor correctly positioned on 50.

Option B: You play against a partner (selected randomly).

Condition 1: The second participant is called [name]...

Condition 2: The second participant is also in your class.

Condition 3: The second participant comes from another school.

Condition 4: The second participant comes from another class.

If the number of lines that you position correctly is **greater** to the number of the other participant, you receive **0.5 credits** for each correctly drawn line

If the number of lines you have drawn correctly is **less** as the number of the other participant, **you receive nothing**.

If you draw the **same number** of lines correctly, you receive 0.2 credits for each correctly drawn line.

Which option do you prefer to receive the credits?

Option A: 0.20 credit for each correctly drawn line

Option B: 0.50 credit for each correctly drawn line, if your number is greater than the number of the other participant. If your number is lower, you get nothing.”

Please keep in mind that 1 credit that can be changed into a milk carton at your canteen (1 credit = 1 coupon)

Please draw a line nearest to the center of the scale drawn on the sheet

as soon as possible.

You have 2 minutes!

The helping staff will give you the final scores.

You have correctly drawn ____ lines.

You have chosen option A, so you receive 0.20 credits per correctly drawn line, or ____ credits in total.

You have chosen option B (game against another participant). This other participant was

able to correctly draw more lines than you so you don't get anything.

This other participant correctly drew fewer lines than you so you receive ____ credits.

Appendix D8. Multiple Hypothesis Testing

In our paper, we address the challenges of multiple hypothesis testing by implementing two statistical procedures to control the False Discovery Rate (FDR) and the Familywise Error Rate (FWER). Specifically, we utilize Anderson's (2008) two-stage method, which refines the Benjamini-Hochberg procedure for FDR control by adjusting the significance level in a sequential manner to more effectively mitigate the risk of false discoveries. For FWER, we employ the `rwolf2` package to implement the Romano-Wolf step-down procedure, a resampling-based approach that accounts for correlations among tests. Our application of these techniques does not significantly alter our main conclusions. We detail below the two methods we employ, along with the associated equations and the procedural steps that facilitate their implementation.

- **FDR:** The False Discovery Rate (FDR) represents the expected proportion of erroneous rejections of the null hypothesis among all rejections. This method is less conservative than the Familywise Error Rate (FWER), and offers greater power to uncover true positives, a feature that becomes increasingly beneficial as the number of hypotheses grows. The FDR approach is particularly useful in contexts where researchers are dealing with multiple testing scenarios, as it balances the need to avoid Type I errors with the desire to not miss out on potentially significant findings.
- **FWER:** The Familywise Error Rate (FWER) is the probability of committing at least one Type I error across all hypotheses tested. Traditional methods for controlling FWER, such as the Bonferroni correction, are highly conservative. They prioritize the minimization of false positives to such an extent that the likelihood of any individual false discovery is kept exceedingly low. However, this conservatism comes with a trade-off, as it often results in a substantial loss of power to detect true positives. The FWER is particularly relevant in studies where the cost of a Type I error is high, and the integrity of each individual test is important. .

Equations and Procedures are detailed below for both methods we implemented in the paper.

- **Benjamini-Hochberg Procedure for FDR:**

1. Sort p-values: $p_{(1)} \leq p_{(2)} \leq \dots \leq p_{(M)}$
2. Find the largest k such that: $p_{(k)} \leq \frac{k\alpha}{M}$
3. Reject for all H_i for $i \leq k$

- **Romano-Wolf Stepdown Procedure for FWER:**

$$p_{adj}(i) = \max_{j \geq i} \left(\frac{\text{rank}(p_j)}{m+1} \right)$$

This method resamples the data (e.g., through bootstrap) to account for the correlation between tests, adjusting p-values to control the FWER.

Implementation in the Paper. In our paper, we utilize these methods as follows:

FDR: To effectively manage the False Discovery Rate (FDR), our paper employs Anderson's (2008) two-stage method, an enhancement of the Benjamini-Hochberg procedure. This refined approach involves a sequential adjustment of the significance level, thereby providing a more nuanced control of the FDR. The first stage determines an initial set of p-values, which are then subjected to the Benjamini-Hochberg threshold in the second stage, ensuring that the proportion of false positives remains controlled under the desired level.

FWER: In addressing the Familywise Error Rate (FWER), we utilize the `rwolf2` software package, which facilitates the implementation of the Romano-Wolf stepdown procedure. This resampling-based method is designed to adjust for inter-test correlations, by employing a resampling mechanism to recalibrate the p-values. This procedure iteratively refines the significance thresholds, thereby maintaining the probability of incurring one or more Type I errors across a family of hypotheses within acceptable bounds.

Tables 1 and 2: The p-values in Tables 1 and 2 are adjusted for multiple hypotheses. These tables include nine outcomes and four treatments, evaluated on the same sample of 607 teachers, resulting in 36 hypotheses. We applied q-value False Discovery Rate (FDR) correction and Romano-Wolf Family-Wise Error Rate (FWER) correction to the following outcomes:

- Average Gender Rights
- Economic Rights
- Political Rights
- Social Rights
- Legal Rights
- Petitions to Dowry without controls
- Petitions to Dowry with controls
- Petitions to Polygamy without controls
- Petitions to Polygamy with controls

The treatments are:

- Visual Narrative (Movie)
- Joint Movie-Curriculum
- Utilitarian
- Malleability

The robustness of our main results is confirmed through these Multiple Hypotheses Testing (MHT) corrections.

Table 3: For Table 3, we included four outcomes within the family (SAT without controls, SAT with controls, Math test without controls, Math test with controls) across the same four treatments, resulting in 16 hypotheses. Since results from other tables are not comparable with those in Table 3, they are not included in the same family of hypotheses.

Table 4: The MHT for Table 4 includes different specifications of the Math Test Score for various sub-samples, with or without interaction terms. This results in five specifications of the Math Test Score on four treatments, totaling 20 hypotheses.

Table 5: Table 5 focuses on the sub-sample of students playing against the opposite gender. The MHT family here includes four outcomes (Redistribution, Competitiveness, Cooperation, Coordination) across the same four treatments, amounting to 16 hypotheses.

Appendix: For every table in the Appendix, the MHT family includes only the tests within one table. The number of hypotheses is mentioned in the table notes.