

# Education

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## Remaking schools without bullying

**Comprehensive sexuality education, and social and emotional learning lead to a significant reduction in bullying and harassment**

ERIC FALT &amp; KABIR SINGH

A TEN-YEAR-OLD boy is bullied by a classmate, yet the school doesn't take action. Students are beaten up by a principal for not cleaning floors. A girl aged ten is sexually assaulted by a school employee. These are the latest incidents reported in Indian media that appear to reflect a pervasive threat of violence and bullying in schools.

A study by The Teacher Foundation across 15 Indian cities in 2013-17 found that 42% students in classes 4-8 and 36% in classes 9-12 reported experiencing harassment by schoolmates on campus, ranging from teasing to physical violence.

Unfortunately, global trends are similar. As the 2019 UNESCO report 'Behind the Numbers: Ending School Violence and Bullying' notes, globally 32% of all students aged 13-17 years had been bullied by their peers at school in the month preceding the report's publication. Also, 32% had been physically attacked, and 36% involved in a physical fight with another student in the 12 months prior to the report's release.

## Mapping climate change in the Himalayas

IIT Guwahati, IIT Mandi and IISc Bangalore to develop a climate vulnerability map for 12 Himalayan states

FE BUREAU

LAST WEEK, IIT Guwahati, IIT Mandi and the Indian Institute of Science (IISc) Bangalore announced collaboration in a pan-Indian, multi-institutional initiative to develop a 'Climate Change Vulnerability Assessment for the Indian Himalayan Region Using a Common Framework'. The exercise is unique because for the first time all the 12 Indian Himalayan Region (IHR) states have used a common framework resulting in the production of comparable state-level and within state, district-level vulnerability maps.

"Such comparable vulnerability assessments are useful for government officials, implementers, decision-makers, funding agencies and development experts to have a common understanding on vulnerability, enabling them to assess which state in IHR is more vulnerable, what has made them vulnerable, and how they might address these vulnerabilities," the institutes said in a statement.

The principle investigators of the project are Anamika Barua (IIT Guwahati) and Shyamashree Dasgupta (IIT Mandi), and the key resource person is NH Ravindranath (IISc Bangalore). They noted that such a coordinated approach is assumed to improve resilience to climate change because several adaptation interventions will require coordinated efforts across administrative boundaries.

The 12 states include Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura, Arunachal Pradesh, Sikkim, and the hilly districts of West Bengal in the eastern part and Himachal Pradesh, Uttarakhand and Jammu & Kashmir in western part of IHR.

Highlighting the impact of the project, Ashutosh Sharma, secretary, Department of Science and Technology, Government of India, said, "The adaptation to climate change is a collaborative effort between appropriate use of technology, a vision that produces policies, a change at the ground level, and engaging the local communities. These vulnerability maps will play a crucial role in this effort."

Several workshops for need-assessment and methodology training were organised over the past year by IIT Guwahati and IIT Mandi as a part of this initiative. Timothy A Gonsalves, director, IIT Mandi, added, "Being situated in IHR, IIT Mandi is proud to be a part of this vulnerability assessment exercise."

The need for such an exercise assumes importance because IHR is one of the most sensitive regions to climate change and variability. Most parts of the region have undergone significant long-term changes in frequencies and intensity of extreme temperature and rainfall events over the last few decades.

The complete report can be accessed here: <https://goo.gl/xVak9d>.

School violence—of which bullying is the most common example—encompasses physical, psychological and sexual violence. Children who are frequently bullied are nearly three times more likely to feel like outsiders at school, and are more than twice as likely to miss school. They tend to have poorer educational outcomes than their peers, and are more likely to quit formal education after finishing secondary school. Affected children are also twice as likely to feel lonely, to be unable to sleep at night, and contemplate suicide.

School violence affects both male and female students. While physical bullying is more common among boys, psychological bullying is common among girls. Younger students are frequent victims; incidences of bullying tend to decrease with age. Older students tend to experience cyberbullying more often than the younger. A key driver of bullying is physical appearance. Students seen as gender non-conforming, including those who identify or are perceived as lesbian, gay, bisexual or transgender, are more at risk of school violence than those who fit expectations around traditional gender norms.

So, how can school violence in India be redressed? As Maya Menon, the founder

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SHYAM KUMAR PRASAD

director of The Teacher Foundation, says, "Practical social emotional learning could help everyone in schools and beyond." Indeed, comprehensive sexuality education (CSE)—which combines social and emotional learning with gender education, and which the UNESCO-led publication, and the International Technical Guidance on Sexuality Education (2018), defines as a "curriculum-based process of teaching and learning about the cognitive, emotional, physical and social aspects of sexuality"—has a major role to play.

CSE seeks to equip young people with the knowledge, skills, values to empower them to realise their well-being and dig-

ity; develop respectful trust-based relationships; and ensure protection of their rights. These are consonant with a recent circular from the Delhi government's Directorate of Education: "There must be respectful relationships among students, school administration and families."

Research shows that CSE and social and emotional learning lead to reduced anxiety and depression among children and youth, a significant reduction in bullying and harassment, improved academic attainment, and greater employability.

UNESCO congratulates the Delhi government for directing National Capital

Territory (NCT) schools to ensure that "bullying is strictly prohibited inside the school premises, and (that no such act goes) unnoticed and unpunished."

An enabling policy framework must convey decisively that violence in schools is unacceptable. Educational policies and programmes must aim to build transformative school environments that can be experienced positively by all students and staff. The education sector must make efforts to eradicate violence in schools, and monitor and evaluate progress in this regard. The collection of actionable data to inform a strategic national response to school violence and bullying is an area where India could play a leading role, and emerge as a global model.

UNESCO is proud to partner with the NCERT, the ministries of HRD and health & family welfare, UN agencies, academia and civil society for a comprehensive programme to promote the health and well-being of school-going adolescents, including the prevention of school violence and bullying. In keeping with a key target of the UN's Sustainable Development Goals, we remain committed to working with the government and other stakeholders to "provide safe, non-violent, inclusive and effective learning environments for all."

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## Can job skills be readied in schools?

Start with transversal skills

VIKAS SINGH

INDIA IS A young nation, with 54% of the population below 25 years of age, according to the ministry of skill development and entrepreneurship (MSDE). By 2020, the average age in India is estimated to be 29 years, as against 40 years in the US, 46 years in Europe and 47 years in Japan.

Over the next 20 years, labour force in the industrialised world will decline by 4%, while in India it will increase by 32%. To reap this demographic dividend, India needs to equip its workforce with employable skills, particularly transversal skills and knowledge. Currently, however, while there are millions of workers willing to fill positions, they lack the skills to do so. It's largely due to the old-fashioned education system that is focused on 'book learning'.

By focusing on skill building, institutions can start preparing students for jobs right from the outset of their education journey. But when is the right time to begin preparing schoolchildren?

To answer this, we first need to look at the definition of "transversal skills". The UNESCO International Bureau of Education describes these as skills not related to a particular job, task, academic discipline or area of knowledge, but as skills that can be used in a variety of situations and work settings. These skills are becoming important for learners to successfully adapt to changes, and lead to productive employment. The examples include:

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- Critical and innovative thinking;
- Interpersonal skills (presentation and communication skills, organisational skills, teamwork);
- Intrapersonal skills (self-discipline, perseverance, motivation, adaptability);
- Global citizenship (tolerance, respect for diversity);
- Media and information literacy (the ability to locate and access information, as well as to analyse and evaluate content);
- Collaboration across networks and leading by influence;
- Initiative and entrepreneurialism;
- Curiosity and imagination.

In primary school, children are exposed to diversity in terms of multiple cultures from which students come. By interacting with teachers/classmates, they develop communication and interpersonal skills, and learn about ethics and tolerance, besides realising that others may differ in their opinions. However, these very basic skills (which comprise soft skills) need to be taught in a more structured manner.

Secondary education should focus on building advanced transversal skills. Through outcome-based learning, schools can impart confidence and competency in students, making them more 'employable'.

The MSDE was set up in November 2014 to give a fresh impetus to Skill India. Under it, skilling is being integrated into formal education by introducing vocational training linked to the local economy from class 9 onwards, in at least 25% of the schools. Entrepreneurship education is to be introduced as part of existing modules at all levels, including primary, secondary, vocational and higher education, along with more awareness on the positive aspects of entrepreneurship as a career option, with awards for young achievers.

Another challenge is in designing an appropriate curriculum for students in primary and secondary schools, so that the introduction of skill-based education is not merely an academic (hard skills) burden, but adds to their aptitude and personality development (soft skills). This calls for more academic and administrative involvement, discussion among scholars and policymakers, and a pilot project for introduction and evaluation of skill-based/vocational courses in schools.

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## Palava Institute launched

Real estate major Lodha Group has launched the Palava Institute, near Mumbai—being developed under guidance of 9.9 Education, led by Pramath Sinha, who has helped build schools across India, including Ashoka University and ISB. During the launch, Sinha said, "The objective is to catalyse an ecosystem of talent, education and career growth in Palava and beyond." Programmes will range from tech courses in IT, banking & media, to courses on leadership, personal growth, self-exploration. Courses will commence from June 2019 onwards.

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## Science & tech



## Sunny with overcast features

**THE IDEA OF COOLING** the climate with stratospheric sunshades that would shield the planet from the sun's warming rays moved up the international agenda this week, with mixed results. On the one hand, new research suggested that it is theoretically possible to fine-tune such a shield without some of its potentially damaging consequences. Publication of this work coincided with a proposal at the biennial UN Environment Assembly (UNEA), held in Nairobi, Kenya, for an expert review of such geoengineering methods. This was the highest-level discussion of the topic so far. On the other hand, the more than 170 nations involved could not arrive at a consensus. In a fitting illustration of the heat surrounding geoengineering, the proposal was withdrawn at the eleventh hour.

Under the Paris Agreement, nations pledged to keep average global warming to "well below" 2°C above pre-industrial levels and to try to limit maximum warming to 1.5°C. Many see these targets as wishful thinking: Earth is already roughly 1°C warmer than it was in pre-industrial times, global greenhouse gas emissions are still on the rise and national pledges to cut them fall short of what is needed to hit the 2°C target, let alone 1.5°C.

Faced with this, some think there is a need to turn down the global thermostat using geoengineering. This encompasses a range of possibilities, including technologies that suck carbon dioxide out of the atmosphere and others that block incoming solar energy. One concern, however, is that these methods do not deal with the cause of the problem: greenhouse-gas emissions. Despite calls to map out the risks and benefits of geoengineering, progress on the international stage has been limited, in part, because it might detract from efforts to reduce emissions. That shifted this week when the delegates in Nairobi debated a proposal for an international assessment. It is the first time that geoengineering has been discussed at such a level and in a forum that includes the US.

The UNEA resolution was tabled by Switzerland, and by the start of the week it had received support from most govern-

### Countries look at tinkering with Earth's thermostat

ments. It called for an expert review of the science of geoengineering, including studies on the suite of available technologies, how each might be deployed and how well they would or would not work, as well as any possible negative consequences. The proposal also called for an analysis of the challenges in regulating each approach.

Among the most controversial but also effective and affordable geoengineering options are planetary sunshades. By using high-flying aircraft, for instance, to spray a fine mist of mineral or man-made particles into the upper stratosphere, a portion of the sun's incoming energy could be bounced back out into space before it gets a chance to warm the planet. The decades-old idea is inspired by large volcanic eruptions, like that of Mount Pinatubo in the Philippines in 1991, which cooled global temperatures by up to 0.5°C for four years.

### In the shade

That event demonstrated that relatively simple sunshades could have a significant effect on global temperatures. Indeed, while climate models project that doubling the concentration of carbon dioxide in the atmosphere could cause between 1.5°C and 4°C of global warming, the models also suggest that it is theoretically possible to reduce temperatures by an equal amount using a sunshade.

But there are challenges. Stratospheric particles eventually fall back to Earth in rain, so the effect is short-lived. A sunshade would need to be continually resupplied, which is one reason for an international governance framework. If a sunshade were allowed to dissipate while atmospheric CO<sub>2</sub> concentrations remained high, global temperatures would rapidly shoot up, with devastating consequences in some regions of the world.

Another problem is the effect of solar geoengineering on the water cycle. Over the past decade, several studies have sug-

gested sunshades could disproportionately affect rainfall, bringing drought to some regions. But that argument may be oversimplified, according to the new study published in *Nature Climate Change*.

So far, most studies have modelled a "fully" geoengineered world in which CO<sub>2</sub> concentrations are doubled compared with current or pre-industrial levels, and all the resulting warming is counterbalanced by a stratospheric sunshade. Instead, Peter Irvine of Harvard University and his colleagues simulated a partial sunshade. They were able to eliminate half the warming effect of doubled CO<sub>2</sub> concentrations while stabilising the water cycle.

In a warmer world, due to GHG emissions, the water cycle is intensified, making drier regions drier and wetter regions wetter, leading to floods and droughts. In their modelled "half-warmed" world, Dr Irvine and his colleagues found that both temperature and precipitation extremes were moderated, which should lead to fewer droughts and floods.

The team also looked at how solar geoengineering would affect tropical cyclones. Doubling CO<sub>2</sub> concentrations compared with present-day levels increased the cumulative intensity of all tropical cyclones by 17.6%. The partial sunshade brought that increase down to 2.4%. Limitations in the model made it impossible to see if this benefit was equally distributed across different regions, such as the Pacific and the Atlantic.

The researchers say their study is more relevant to real policy decisions because it shines some light on what could be done by, for instance, combining solar geoengineering with efforts to cut greenhouse gas emissions. But all this would require international consensus, and obtaining that may be a fantasy.

The barriers to unity were on display in Nairobi. In 2010 the Convention on Biological Diversity advised against geoengineering activities "until there is an ade-

quate scientific basis" to justify them, but America is not a party to that convention. It was represented at UNEA. However, several delegates told this newspaper that America and Saudi Arabia opposed the Swiss proposal to review geoengineering, preferring the issue to be assessed by the Intergovernmental Panel on Climate Change (IPCC), which is due to include something about the technologies in its next big report, expected in 2021.

The distinction may seem procedural, but the Swiss proposal was for a more comprehensive appraisal and one that would be delivered more quickly, by August 2020. What is more, the IPCC's mandate is primarily to consider the science of geoengineering, not whether and how to regulate its various technologies. And the impact of those technologies on a regional and global scale means governance questions will be at least as tricky as the scientific ones. Indeed, there are concerns that some geoengineering methods could be unilaterally deployed by one or more nations, to the possible detriment of others. "UNEP is the right space because it is the anchor institution of the UN for the environment that collects information but also has a policy function," said Franz Perrez, Switzerland's ambassador for the environment.

The Americans, some said, did not appear to want to make room for conversations, let alone make decisions, about a framework for geoengineering that could restrict their future options. A spokesman for their delegation declined to comment.

Supporters of the proposal insisted they sought an honest analysis. There is a bitter irony in the meeting's outcome. The only reason the world may need geoengineering is that talks about cutting emissions have gone on so long but achieved so little. Yet in Nairobi delegates could not even commission a report. Geoengineering, the toolbox that a decade ago nobody wanted, could end up stuck in the same international procedures as efforts to tackle the root cause of global warming.

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