

Engendering Education

Issue 05 | Aug 2025

The Education and Technology Issue



ENGENDERING EDUCATION

A Breakthrough Magazine



Empower. Educate. Transform.

COPYRIGHT

Engendering Education
Issue No.5

Editor-in-Chief:
Nayana Chowdhury

Commissioning Editor:
Urvashi Sarkar

Editorial Team:
Barsha Chakraborty
Epti Pattnaik
Saswati Chatterjee

Design & Illustrations:
Aditi Dash

Website design:
Shioft Digital
Sonalika Goswami

Published by Breakthrough Trust, New Delhi, 2025

Breakthrough Trust
Plot-3, DDA Community Centre, Zamrudpur,
New Delhi, Delhi 110048

✉ contact@inbreakthrough.org
🌐 inbreakthrough.org

Download this publication for free at:
engenderingeducation.in

Write to us at:
editorialteam@inbreakthrough.org

This publication is licensed under the Creative Commons Attribution NonCommercial ShareAlike 4.0 Unported (CC BY-NC-SA 4.0). To view a copy of this license, visit: www.creativecommons.org/licences/by-nc-sa/4.0/.

All photographs used with permission from the contributors and their respective organisations.



Contents

05

Editor's Note

Nayana Chowdhury

THE LEDE

07

Kerala's KITE Flies High, Shows the Way for ICT Enabled Education

KITE

CLOSE UP

12

Reimagining EdTech in India: From Access to Impact

Annette Francis and Torral Parmar

COVER STORY

17

Reimagining Mathematics Education

Rumani Ahuja

CHANGE MAKER

Meet The Contributors



Nayana Chowdhury

Nayana Chowdhury is the CEO of Breakthrough. With more than 25 years of experience in working in the social sector, Nayana vouches for the power of collective action in ensuring that it is the most marginalised who lead, both with their stories and in bringing together others in the community.



Annette Francis

Annette Francis is the Program Director for Vocational Training at Pratham Education Foundation, where she has been leading the organization's youth skilling initiatives since 2018. Her work focuses on workforce development and technology-driven skill training, aiming to prepare India's youth for the evolving demands of the job market.



Rumani Ahuja

An educator and teacher, Rumani helms the popular YouTube channel 'Magic of Maths with Rumani'. Using interactive assignments and visual aids through YouTube, Rumani attempts to instil a love of mathematics in her students and bust the fear and phobia around the subject.



Torral Parmar

Torral Parmar is a Senior Manager, Research at Pratham's youth training arm, where she leads research initiatives. Her key areas of interest include learning design and impact measurement within the vocational education, entrepreneurship, and livelihoods space.



KITE

Kerala Infrastructure and Technology for Education (KITE) is a Government of Kerala establishment set up to foster, promote and implement modernisation of educational institutions in the state of Kerala. At the core of it is FOSS, a free and open-source software that provides easy to access educational resources for teachers and students.



Editor's Note

Nayana Chowdhury

Innovation is unfolding rapidly with recent giant advances in technology, especially the growth of AI which is significantly affecting all areas of human activity. Education too has not been left untouched. Like other fields, education has also benefited from the progress in technology, though on the downside, its technological applications is seen as a lucrative market by service providers and technology entrepreneurs.

The intersection of technology and education is not new or recent. The 1920s saw the exciting new technology at the time, the radio¹, being explored as a way for educators and university professors to disseminate educational lectures right into people's homes. While not exactly a 'digital classroom' as those seen today, this is a prime example of technology being used as a way to improve accessibility and reach a sizable number of students.

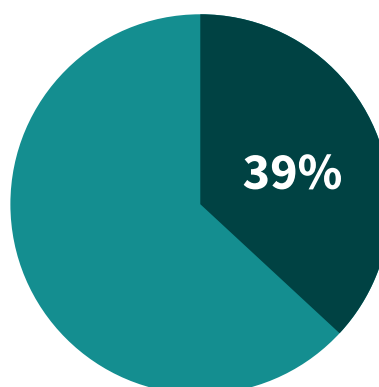
Technology has interacted with education at various levels from the arrival of overhead projectors in schools to the use of handheld calculators (if frowned upon by some maths teachers). Personal computers for education purposes began being used in schools in the United States by the 1980s. By the early to mid-2000s, computers or 'computer labs' in schools in different parts of the world became ubiquitous.

The use of technology in education grew at a steady pace through the early 2000s and beyond. With expanding internet penetration in vast geographies of the country, the possibilities and potential for education to reach different constituencies of learners became immense. It was during the COVID-19 pandemic that technology enabled education became a dire necessity and hence all encompassing, but also at the same time the cracks started becoming visible.

The 'digital classroom' evolved from interactive screens or tablets being used in physical classrooms, to a space of its own: conducted through Zoom or Google Meet calls, with lessons or homework distributed through WhatsApp or with tuitions being conducted through YouTube videos. However, does it manage to deal with the challenges of access - whether due to availability or due to associated norms around digital access? Could everyone learn? How far does one need to go to reach the last mile learner in every household?

Accessibility issues seen in physical classrooms do not necessarily disappear when conducted online, or manifest in different ways. The gender, caste and class location of learners can have a bearing in online spaces too and perhaps more so when used in the confines of a home.

The mobile gender gap report 2025 also shows that there are 235 million women who are not using a smartphone compared to men². Even in cases where women own or use mobile phones, many have not yet adopted the use of mobile phone internet or simply own a handset without any mobile phone capability.



This gap is quite significant between men and women users in India - a gender gap of 39%.

A myriad social norms affect the usage of phones in India, starting from the point of access. Even in cases of usage, many people face close surveillance. Although we often hear about the reach of the internet and digital devices, when one reaches the ground and tries to unpack the truth, a different picture presents itself. We have found that in many households where there is only a single mobile phone, it is given for use to the men of the household - fathers and sons - and therefore, many women often get forgotten or left out. This negatively impacts women's education in an increasingly digitised world and they become the 'last learners'.

For example, in one of Breakthrough's projects in Uttar Pradesh's three districts which mainly focuses on young people with access to phones, we have found that out of 7072 youth, only 67% have any access to smartphones and of them, only 27% of young women have their own smartphones. In the case where smartphones are shared, which is the reality for 73% of these young women in this project area, we found that they only have access to it for 1-2 hours per day. In comparison, the men have up to 8 hours of access!

The fifth edition of Engendering Education is an effort to lay out some of these debates. The issue looks at both the promise and pitfalls of technology in education.

The **Cover Story** by Annette Francis and Torral Parmar titled 'Reimagining EdTech in India: From Access to Impact', examines many of the gaps of edtech in India as well as what has been achieved so far. They also look at the gendered aspect of edtech as it exists currently and what may need to be improved upon for the way forward and for the system to reach the 'last learner'.

The **Close Up** takes a look at the Kerala government's KITE (Kerala Infrastructure and Technology for Education) initiative which focuses on digital literacy and inclusion. At the core of it is FOSS, a free and open source software that provides easy to access educational resources for teachers and students and helps with unrestricted sharing and revising.

And finally, the **Changemaker** for this issue is Rumani Ahuja, the teacher behind the popular YouTube channel 'Magic of Maths with Rumani'. Using interactive assignments and visual aids through YouTube, Rumani attempts to instil a love of mathematics in her students and bust the fear and phobia around the subject.

The hope is that this issue will fuel new thinking on education and technology and how it can be used productively and in a manner which is inclusive and promotes social good.



Nayana Chowdhury
Editor-in-Chief, *Engendering Education*

SOURCES:

¹ <https://daily.jstor.org/can-radio-really-educate/>

² The Mobile Gender Gap Report 2025, GSMA (<https://www.gsma.com/r/wp-content/uploads/2025/06/The-Mobile-Gender-Gap-Report-2025.pdf>)

Kerala's KITE Flies High, Shows the Way for ICT Enabled Education

KITE

In Kerala, an ICT revolution among school students has been underway since the early 2000s, courtesy a path-breaking initiative of the Kerala government which has digital literacy, inclusion, and a free and open source software (FOSS) model at its center. Anvar K. Sadath, CEO of KITE (Kerala Infrastructure and Technology for Education) speaks to Engendering Education about why this programme stands out and is being emulated in different parts of the world.



In the early 2000s, India's IT revolution was yet to take off with computers still a novelty. Computer laboratories existed in some schools but students were not allowed a free hand with machines. This was the case for much of the country.

Schools in Kerala too had limited computers. But local school authorities and the state government were cognizant and had the foresight that children should have an early grasp over information and communication technology (ICT).

"There was no standardisation in machine specifications and no prescribed ICT syllabus. Teachers had little support or training to teach IT and questioned change," said K. Anvar Sadath, CEO of KITE (Kerala Infrastructure and Technology for Education).

To assess the matter, a task force led by Prof. U.R. Rao in 2000 recommended creating a dedicated wing within Kerala's education department to make interventions in information technology. This led to the establishing of 'IT@School' in 2001-2002, an initiative which systematically introduced ICT in schools in the state.

The government did not outsource the task to any external agencies or outsource the programme implementation to a private company.

A study¹ by IT for Change noted: "The adoption of an 'inhouse' model of IT education, allowed the system to benefit from capacity building of teachers and the ownership of the infrastructure by the school." In other words, ownership of curriculum, pedagogy and infrastructure would be with the schools rather than with a private entity.

The experiment took some years to take off. When it eventually did, the outcomes were laudworthy.

Under the project, information technology became a compulsory subject in Standard X and broadband connectivity was brought to schools. ICT based textbooks were taught in schools from Standard IX-XII. ICT infrastructure was brought to 4071 schools during 2007- 2012 and students began to learn about animation, cyber safety, hardware, electronics and Malayalam computing from an early age.

The transition from IT@School to KITE

IT@School was later renamed to Kerala Infrastructure and Information Technology for Education (KITE) in 2017 with its new status as a government company. The new status allowed KITE more scope and authority for implementing various ICT programmes. The broader aim was to foster digital technology literacy in government and aided schools, and competency among students.

Particularly during the COVID-19 lockdown, KITE ensured the broadcast of specially framed e-curricula to over 4.6 million students in the state.



Students absorb technology skills in a KITE classroom.
Photo: kite.kerala.gov.in

**Kerala became the first state to
introduce ICT as a subject in school
curriculum (2001-2003).**



Girls have been equal beneficiaries of ICT-enabled education in Kerala's schools. Photo: kite.kerala.gov.in

The flagship programme of KITE is the 'Little KITEs' programme implemented in government and aided schools. Little KITEs envisages that students not only use technologies but also contribute to the development of new software and tools and share their learnings with one another.

"Little KITEs is the largest ICT student network in the country," Sadath says. Over 1,80,000 high school students (Grades VIII, IX, and X) are currently members of Little KITEs clubs formed in over 2,174 government and aided high schools in the state (roughly covering 50% of the state's schools). Since its inception in the year 2018 more than 12,00,000 students have benefited from the programme.

The aim of KITES is to promote digital literacy, cyber literacy, and language computing. Students are introduced to advanced technologies such as Internet of Things, AI, robotics, 3D animation, multimedia, electronics, and mobile app development. It fosters community, collaboration, and peer learning among students.

What is the gender balance in the KITES programme?

Girls are equally represented in Little KITEs as boys. "Little KITEs has been able to improve girls'

participation in STEM, thus breaking prejudice against gender/girls," Sadath says.

For the academic session 2023-26, girls were 50.1 percent of 33,723 of a total batch strength of 67,318 students. The trend was consistent during 2021-24 and 2022-25.

"The Little KITEs programme has addressed the under-representation of girls in STEM disciplines. Girls from marginalised communities have developed ambitions for higher studies in science and technology, and aiming for careers as scientists and technologists," says a UNICEF assessment² of the programme.

In a unique initiative, Little KITE students have also trained parents on the safe use of smartphones and the internet. "More than 400,000 mothers participated in the programme and learned from students on cybersecurity, fact checking, OTP and password protection and fake news," Sadath explains.

Pedagogical approaches have ensured that all children feel included in the process of learning, especially those who struggle with technology. Peer teaching is encouraged through which students comfortable with activities such as robotics and computer programming teach other students who are not as comfortable.

The heart of Little KITEs: Free and Open Source Software

KITE ensures that all computers in government and aided schools run free software-based operating systems (FOSS) with open digital content and open educational resources. “Besides the fact that free software and educational resources incur no charges, it also helps unrestricted sharing and editing/revising of educational content among teachers and students,” Sadath said.

Thus expanding the programme to more schools does not require any expenditure on software or content since it is free and open source. The only costs are hardware and connectivity expenses. KITE schools have laptops that utilise entirely free software, replacing the previously licensed software. The state government’s decision to use FOSS in the General Education Department since 2008 itself gave Kerala an early start and has helped save about INR 3000 Crore annually in infrastructural costs. Choosing FOSS over proprietary software has technological, economic, social, and pedagogical benefits.

“The key pedagogical value of FOSS is that it supports teacher agency – teachers can use the applications they want to install/upgrade these without any constraints. FOSS apps ‘belong’ to the school and the teachers and not any company. So their use, upgrade, and replacement decisions are made by the school and the school system, without any vendor dependency,” the UNICEF report says.

The management helming Little KITEs is also cognizant of issues related to excessive exposure to technology and problems of unequal access among students to digital devices.

Sadath says, “We also have offline methods to involve students. Otherwise, the digital divide will kick in. To prevent the overuse of machines and smartphones by children, we focus a great deal on cyber safety protocol and cyber vulnerability. We do not insist on digital applications in schools which require the internet. Rather, students should be able to complete their activities without the internet.”

In 2022, the KITEs programme received significant recognition when Finland asked the KITE team and Kerala government to establish student IT Clubs along the lines of the Little KITEs IT Clubs in Kerala.

Undoubtedly, the Little KITE model has lessons and insights for educators and learners that can be adapted in various geographies and schools.



Free and Open Source Software (FOSS) is at the heart of the KITE programme. Photo: kite.kerala.gov.in

SOURCES:

¹ Soaring High. An Impact Study on Little KITEs, Kerala's Pioneering Digital Literacy Programme.
<https://itforchange.net/sites/default/files/add/Soaring%20High%20-%20impact%20study%20on%20Little%20KITEs.pdf>

² Empowering Adolescents with Future-ready Skills The inspiring story of ` Little KITEs'
<https://www.unicef.org/india/media/10976/file/Empowering%20Adolescents%20with%20Future%20Ready%20Skills.pdf>

LET US PICK
UP OUR BOOKS
AND OUR PENS,
THEY ARE THE
MOST
POWERFUL
WEAPONS.

Malala Yousafzai

Nobel Peace Prize laureate and activist



Reimagining EdTech in India: From Access to Impact

Annette Francis and
Torral Parmar (Pratham)

Annette Francis and Torral Parmar take a close look at the opportunities and pitfalls of the edtech sector. They provide a diagnosis of what is amiss, the gendered use of edtech, and what might be the way ahead.

How many hours did you find yourself engaging with the screen today? On an average¹, people worldwide spend 6 hours and 42 minutes looking at screens. For children, this amount represents half of the total hours visible with screen time only increasing daily². Screen content is actively re-shaping how we learn, think, feel, perceive and make choices every moment.

Technology is said to be ushering in a level-playing field, irrespective of geographical and cultural barriers. According to IBEF³, the Indian edtech market is currently valued at Rs. 64,875 crore (US\$ 7.5 billion) and is expected to reach Rs. 2,50,850 crore (US\$ 29 billion) by 2030. Many factors, including government interventions to promote digital tools for education such as DIKSHA, PM eVIDYA and SWAYAM, and innovative ed-tech companies have all contributed to the acceleration of digital learning in India. However, the COVID-19 pandemic was undoubtedly the catalyst needed to decisively cement the adoption of digital tools for learning. Edtech is no longer regarded as a peripheral experiment in education—it is at the forefront of defining the future of learning.

A growing digital infrastructure but a deep learning crisis

India's digital access story is remarkable. In rural areas, smartphone penetration has surged from 36.5% in 2018 to 96.1% in 2023, according to ASER (Annual Status of Education Report). This has created an unprecedented opportunity to reach children and youth directly in their homes and communities. However, digital access alone is not translating into learning gains.

The ASER 2024 report⁴ shares encouraging news about Foundational Literacy and Numeracy (FLN) among Grade 3 children, but makes clear the path ahead is steep. The percentage of children who can read at Grade 1 level increased from 43.6% to 47.2%, while the percentage of those who could do simple subtraction increased from 29.1% to 32.8%. However, these modest gains, while positive, still leave more than half of Grade 3 students unable to read at Grade 1 level and two-thirds struggling with basic arithmetic. This constitutes a sobering reminder of how far India remains from achieving its FLN goals under the National Education Policy 2020. Classrooms still focus on grade level teaching and assessments without helping children bridge the FLN gap.

To bridge the Foundational Literacy and Numeracy (FLN) gap, the approach to learning must fundamentally shift from a grade-centric model to one that is student-centric. This requires designing educational experiences that emphasise each student's current learning level and their pace. This means implementing diagnostic assessments at the outset to understand individual learning levels, followed by adaptive learning paths that adjust content difficulty and pace.

A robust learning system must integrate personalised feedback mechanisms, user-intuitive tutoring elements that can offer tailored one-on-one support, and engaging content that makes mastering foundational skills rewarding. A pedagogy that is adaptive to the learner's level, whether in a digital or

**In rural areas,
smartphone penetration
has surged from 36.5% in
2018 to 96.1% in 2023,
according to ASER.**



traditional setting, and which allows for tailored content and activities that gradually build mastery, will ensure no one is left behind due to a one-size-fits-all approach.

Dr. Wilima Wadhwa, Director of the ASER Centre, noted in the 2024 report: "The improvement trend is encouraging, but at the current pace, we would need another decade to ensure all children master basic skills."

This disconnect highlights a core issue: technology must address the right problem. With smartphones in nearly every home, edtech should be laser-focused on closing FLN gaps. But instead of building on existing usage patterns and adapting to learners' real needs, many platforms continue to assume high levels of digital and academic readiness. This obviously leads to the exclusion of the most vulnerable.

Gendered usage and unequal support

Early insights from ASER 2024 point to widening gender disparities in tech-based learning. While both girls and boys now have similar physical access to devices, only 27% of rural adolescent girls report independently using smartphones for learning—compared to 41% of boys. Girls also spend significantly less time on educational apps and face greater interruptions from household chores.


This gap is not just about device access—it is about social norms, family support, and motivation. Girls are 31% more likely to have their study time interrupted and 23% less likely to be encouraged to use tech for education. Without addressing these behavioral and structural barriers, edtech will continue to serve the digitally privileged, not the digitally excluded.

Recognising gaps: usability, language, context, diversity and trust

Rohit, 18, from rural Sitapur, UP, faced two barriers on a learning portal: he couldn't navigate the login interface, and it requested personal information without context. The creators had made dual assumptions—users possessed both digital navigation skills and data literacy. For edtech to be effective, it must move beyond access and address usability. Many rural youth struggle to use digital platforms independently, and this challenge is even

more pronounced among girls. A significant number of educational apps have login credentials, passwords, or need email verification—factors that are major hurdles for low-literacy users. ASER 2024 found that 47% of adolescents used an educational app but didn't use it again due to login issues.

Language is another serious barrier. The Internet and Mobile Association of India reported in 2023 that out of 536 million Indians using the internet, only 199 million are comfortable with consuming content in English. The Ed-Tech Lab Report 2019⁵ that reviewed 118 popular educational apps, found that 84% offer content only in English. Just 16% of educational apps featured some languages among India's 22 official languages. Many regional languages are underrepresented or completely missing. India has 121 spoken languages⁶. If you include dialects, there are over 1,300 recognized "mother tongues." This means that even apps claiming to support multiple languages cover only a small part of our linguistic diversity.



Language is not only about translation. It is about the context. A math problem about shopping malls and escalators means nothing to a child that has seen neither.

Dr. Rukmini Banerji
CEO, Pratham Education Foundation

The contextualisation challenge is directly related to the existing FLN crisis. Most first-generation learners hesitate to interact with content when visuals, text, and voice-intonation are unfamiliar to them. Most ed-tech products fail to ground their content in familiar cultural, language and geographical contexts, presenting an added hindrance for the majority of children in India's rural hinterland.

Trust in edtech is a significant yet uncharted barrier. ASER 2024 report states that 63% of parents from rural India expressed concern about data collection from educational apps, while 47% of surveyed adolescents reported abandoning educational platforms that required account creation or login credentials. As one parent from rural Bihar explained to ASER researchers: "I don't understand what these apps are collecting about my child. Why do they need our family details? What if this information is misused?"

Designing for the last learner

India's edtech ecosystem must fundamentally shift its focus—from merely engaging users to ensuring actual

learning outcomes, especially for first-generation learners. The most effective digital solutions will prioritize the needs of the "last learner"—the one who faces the greatest barriers to access, comprehension, and application.

Move from engagement to meaningful learning

While today's edtech content excels at grabbing attention, it frequently falls short on enabling deep learning and real-world application. The narrative must evolve beyond entertainment to incorporate AI-enabled mentorship that gives personalised nudges, celebrates milestones, and supports self-reflection—offering more than traditional static content ever could. Additionally, entrepreneurs developing technology for education should focus on the following:

Simplify, localise, and humanise design

Designing for inclusivity involves several layers. Interfaces should be simple and not assume digital



fluency. Multilingual and non-text-based navigation should go beyond reading and writing, enabling understanding through visuals, voice, and interaction. Culturally relevant content should build trust and connection by anchoring learning in familiar contexts.

Build active and participatory learning environments

Technology should not just deliver content—it should invite participation and co-construction of learning. Teachers can use smartphone apps for real-time polls, capture class sentiment, or collate and summarise student questions to drive responsive instruction. Interactive tools that help learners test, apply, and iterate on what they learn in real-world or simulated contexts.

Leverage the social layer of learning

Social media is the biggest competitor for learners' attention and young people can experience adverse mental health and behavioral effects especially with

unmitigated consumption. Edtech can draw on the positive aspects of social media's participatory design—encouraging learners to create, share, and discuss as part of the learning process. Technology creators can also build features that nurture peer networks, community learning, and storytelling—strengthening both retention and relevance.

To make learning truly inclusive, we need to flip the script—design not for the average user, but for the one who struggles most. That's where real impact begins—with empathy, not assumptions. It's about listening deeply, reducing complexity thoughtfully without sacrificing content, and coming to where they are, not where we hope or want them to be. It's about building bridges, not walls, and creating learning that honors their realities while cultivating their potential.

If we can build edtech that works for her—the last learner—it will likely work for everyone. By designing for the margins, we can create systems that are more flexible, meaningful, and empowering for all.

SOURCES:

¹ <https://backlinko.com/screen-time-statistics>

² <https://timesofindia.indiatimes.com/india/42-children-below-age-of-12-spend-up-to-4-hours-daily-glued-to-screens-survey/articleshow/104147914.cms>

³ <https://www.ibef.org/news/india-s-edtech-market-likely-to-reach-rs-2-50-850-crore-us-29-billion-by-2030-report>

⁴ <https://asercentre.org/wp-content/uploads/2022/12/ASER-2024-National-findings.pdf>

⁵ <https://www.centurysquarefoundation.org/EdTech-Lab-Report-November-2019.pdf>

⁶ <https://timesofindia.indiatimes.com/city/indore/local-languages-to-be-medium-of-instruction-in-higher-edu-min/articleshow/121684315.cms>

THE TECHNOLOGY
ITSELF IS NOT
TRANSFORMATIVE.
IT'S THE SCHOOL,
THE PEDAGOGY,
THAT IS
TRANSFORMATIVE.

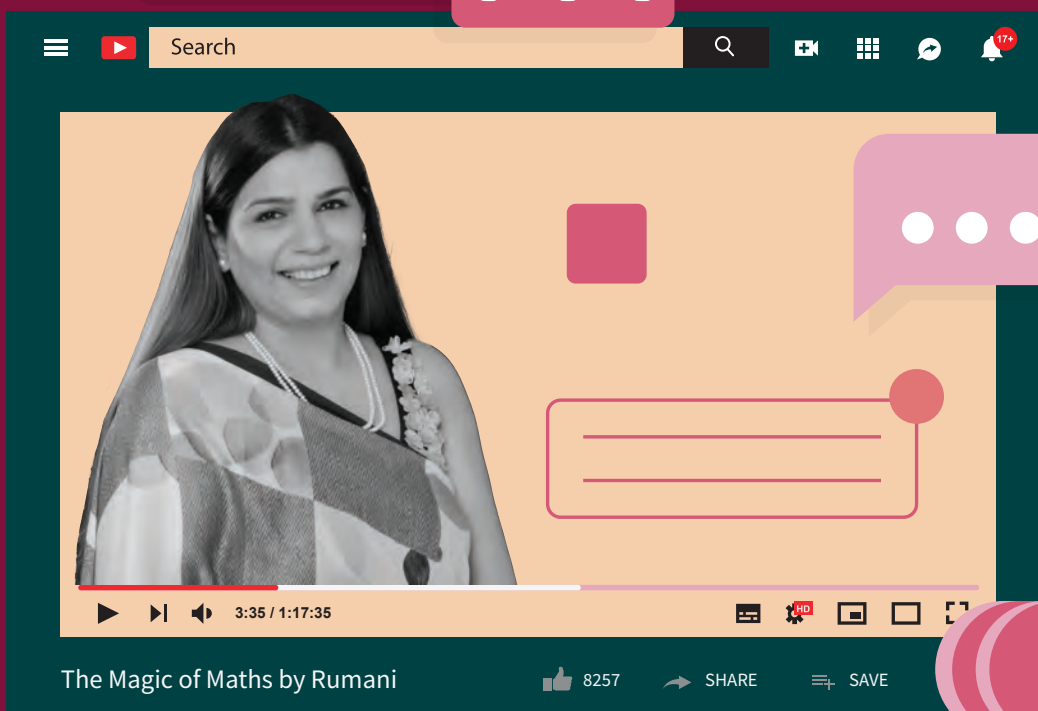
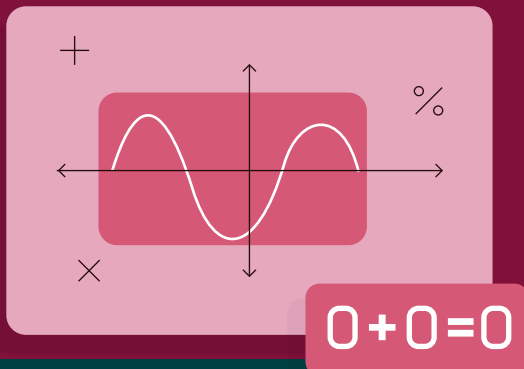
Tanya Byron

Writer and child psychologist

Reimagining Mathematics Education

Rumani Ahuja

Rumani Ahuja's YouTube channel 'Magic of Maths with Rumani' is helping students overcome their fears and apprehensions around mathematics. With over 6000 subscribers and a steadily growing reach, Rumani is helping students excel in mathematics through interactive assignments and visual aids. A teacher for 15 years now, Rumani is a dedicated educator on a mission to bust fears and phobias around mathematics. In a world proliferated by YouTube male coaches and experts, Rumani's presence in the online education sphere is making a difference.



What inspired you to pursue a career in education?

My journey in education commenced in 2010. I was influenced by my mother, herself a teacher. I have always taught for the love of teaching. During the COVID-19 pandemic, I established "The Magic of Maths by Rumani" with the aim of inspiring students and making mathematical concepts more accessible.

Children have a phobia of maths and consider it as a tough subject. But it can become easy with the right methodology and correct techniques.

The integration of digital platforms into education has revolutionised learning. How have you utilized YouTube to enhance student engagement?

YouTube is a valuable educational resource. A simple share button facilitates the distribution of assignments and instructional content. I edit and caption my videos to ensure clarity. Through YouTube Shorts, I encourage students to showcase their own activities such as mathematical charts. This creates an environment where students feel motivated to participate and contribute.

You have an innovative approach to mathematics employing the use of visual aids. Could you elaborate?

Mathematics needs to be both interactive and tangible. I use origami (folding) and kirigami (cutting)

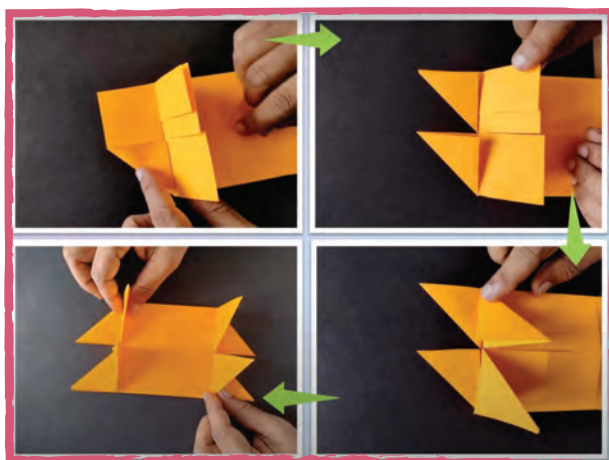


Image from Rumani's YouTube channel:
<https://www.youtube.com/@themagicofmathsbyrumani4143>

to illustrate complex mathematical concepts. Whether demonstrating the Pythagoras theorem or geometric structures, these techniques are eco-friendly and reusable. My students have emulated these techniques and received awards on mathematical modelling and computational thinking. I have also designed an innovative activity book and file, targeting students from the sixth standard onward. These materials emphasize practical engagement and foster analytical thinking.

What initially drew you to mathematics, and how has your perspective on the subject evolved over time?

My appreciation for mathematics deepened through teaching. Mathematical learning is like the construction of a building—you cannot start from the seventh floor, a strong foundation is required first. Mathematics is a continuous process that extends beyond academia. My work in schools focuses on addressing students' anxiety surrounding the subject, ensuring that they not only understand mathematics but also develop a genuine liking towards it.

In your opinion, do girls have a tougher time with mathematics?

Girls are responding well too. It is particularly gratifying to witness female students excelling in mathematics—one of my students is currently pursuing a PhD in the field.

How do platforms like Facebook and YouTube influence your pedagogical approach? Which has been your most shared content?

Digital platforms facilitate accessibility and allow students to engage with educational content irrespective of location. While students do not operate individual accounts, their parents assist in disseminating learning materials. One of my more ambitious projects, Geometricity, integrates quadrants, graphs, and three-dimensional geometric structures—such as cubes and prisms—to construct a city model that illustrates core mathematical principles. That caught on with a lot of students online.

Managing professional responsibilities alongside YouTube content creation must be a demanding task. How do you balance your commitments?

I do not create content on a daily basis; rather, I prioritise making learning material that genuinely impart mathematical concepts in an interactive manner, through quizzes for example. The idea is to celebrate mathematics rather than employ it for commercial ends. I also teach in a government school and have to fulfill departmental duties. To ensure effective communication, I present content in both English and Hindi.

Does your work inspire fellow educators? What do they want to learn from you?

Teachers do inquire about my approach to increasing subscribers. I do not engage in content creation for commercial gain. My sole motivation is the advancement of student learning. I also conduct coaching classes, not with financial intent, but to foster mathematical understanding and

curiosity among students. My passion for teaching and learning knows no bounds and I am forever on a mission of making learning more engaging and joyful for my students.

You have been honored with several prestigious awards. How have these recognitions influenced your journey?

In 2022, I was conferred the Malti Gyan Peeth Puruskar. Additionally, I was conferred the Punjab Teacher of the Year award in Amritsar. Other recognitions and laurels have come my way too. These accolades inspire me to contribute meaningfully to the field of education.

What advice would you offer to students who struggle with mathematics?

It is imperative to overcome the fear of mathematics. Engaging students through interactive methods helps them develop an interest in mathematics and do better.

Image from Rumani's YouTube channel:
<https://www.youtube.com/@themagicofmathsbyrumani4143>





