Special needs students unlock creativity using ICT-AVGC lessons in Kerala

Computer skills and digital tools allow specially-abled students learn, communicate, and work independently

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Teachers providing Digital Art training to students at a school in Thiruvananthapuram, Kerala

In a classroom buzzing with creativity, Aabha, a ninth-grade student with a speech disability at Sri Vidoba High School, Kayamkulam, Alappuzha, is learning to master Digital Art. Using free and open-source software (FOSS) such as ColorPaint and Krita, she creates images that speak volumes. Within weeks of getting introduced to the software, she produced striking digital paintings and even left a colourful mural on her classroom wall. Aabha is among many such students who are defining their creativity in Kerala. Creative digital tools made accessible to nearly 90,000 Children With Special Needs (CWSN) have helped them explore an avenue for expression.

Kerala has recently launched a new ICT curriculum that teaches students to create, not just consume, digital content. The curriculum helps students learn Animation, Visual Effects, Gaming and Comics (AVGC) and Extended Reality (XR). The tools are being used as structured lessons to learn music-making with LMMS, develop games and create animation clips. To make a universal AVGC curriculum financially and logistically feasible, Kerala Infrastructure and Technology for Education (KITE), the technical arm of the Department of General Education, has equipped nearly 45,000 classrooms in over 16,000 government and aided schools with nearly 4,50,000 ICT devices. The revised ICT textbooks from classes III X include several projects that require a sequence of small, concrete steps rather than abstract language skills, making them well-suited to many CWSN.

This shift is rooted in the belief that technology can be a powerful tool for self-expression, especially for those who face communication barriers. Dolly NJ, teacher, St Rossello's HSS For Speech & Hearing, Poomala, Thrissur, says, “When any one of the five senses is limited, it is often observed that the other senses function more efficiently. For students with hearing impairments, IT (Information Technology) is a subject they not only learn but enjoy the most, as it minimises reliance on language. The visual nature of graphics and animation allows them to turn IT skills into viable career paths.”

From Consumers to Creators

The curriculum's pedagogical aim is to make students active creators, not just passive consumers. “We are unequivocally training students to be creators, not consumers,” says K Anvar Sadath, CEO, KITE and chairman of the ICT textbook drafting committee, adding, “This approach is rooted in the Kerala Curriculum Framework, which promotes critical pedagogy—the idea that students are active creators of knowledge. By integrating concepts such as design thinking, we provide students with a holistic experience in creation. Our primary goal is to ignite a creative spark that they can build upon in the future.”

This creative streak is being supported across the state. At OHSS Tirurangadi, Malappuram, students with special needs were guided to create the National Flag on Independence Day using the vector graphics editor Inkscape, and their work was proudly displayed in poster format.

For students with visual impairments, technology offers a different kind of independence. “Computer skills build confidence and allow them to learn, communicate, and work independently. They use screen reader software

to navigate the QWERTY keyboard, manage files in File Explorer, and even use audio editing tools including Audacity. This ability to create and manage their own digital world is a significant step toward self-reliance, says Abdulla KP, teacher, Rahmania School for Handicapped, Medical College, Kozhikode. However, Abdulla also points out challenges such as the difficulty in understanding images and charts, and the need for continuous technical support. “They cannot independently solve issues like a software crash or changes in shortcuts. They need technical help when accessibility settings have to be changed. They cannot use visual-based activities such as computer games and drawing tools,” says Abdulla KP, Rahmania School for Handicapped, Medical College, Kozhikode.

“We are aware of the challenges that visually impaired teachers and children face and are continuously working to resolve these accessibility issues. All visually challenged teachers in Kerala are trained in ICT by KITE,” Sadath adds. KITE has tried to tackle these practical barriers through teacher training and infrastructure drives. The training model includes intensive, phased sessions for subject teachers supported by Master Trainers to allow teachers to learn for children who need step-by-step instruction or regular practice. “We have trained tens of thousands of teachers this year alone and our master trainers provide ongoing support,” Sadath says.

Building Confidence

Classroom reaction has been positive with students who previously disengaged now looking forward to ICT periods. At St Marys HSS Pattom, Thiruvananthapuram, a class X student, Sakhi S Mohan, who also has an intellectual disability, is learning to use a DSLR camera with the help of her friends. These collaborative efforts extend beyond the classroom. The DigiMitra program at Govt Higher Secondary school in Chittariparamba offers 30-day computer training to 22 students with special needs, and in Alappuzha, students from Mother Teresa High School conducted a training session focused on basic ICT skills, including educational games and digital drawing.

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