India, despite its unprecedented growth, faces a daunting challenge in the provision of equitable, quality education that prepares its youth for participation in the digital age. The majority of rural India’s government schools lack basic IT infrastructure for computer-aided learning. In schools with technology resources, computer-aided learning primarily focuses on teaching ‘computers’ as a subject rather than as a tool for enhancing the quality of teaching and learning in classrooms.

AIF’s Digital Equalizer (DE) program leverages technology to bridge the educational and digital divide in India, thus preparing students to compete in the 21st century economy. Targeting children in Grades 6-8 (age group with maximum dropout rates), the DE program is a three-year intervention focusing on improving the learning outcomes for children through capacity enhancement of teachers in delivering high quality instruction.

THE CONTEXT

- Enabling teachers in digital lesson-planning and providing digital content across six key subjects including Mathematics, Science, Social Studies, English, IT literacy and Financial Literacy.
- Providing different handholding support to schools through a DE Core model based on weekly school visits, a DE-Lite model wherein the responsibility for monitoring and supervision is handed over to the trained teachers, resource coordinators or headmasters, and a full-strength School Transformation Program (STP), which works on the school as a unit to transform all aspects of education delivery, chiefly those impacting school governance such as principal’s capacity, infrastructure and the effectiveness of school management committees (SMCs).
- Hands-on learning and creating interest in the four fields of STEM to promote real world experience.
- Leveraging existing Government resources in an innovative manner and working with District Institute for Education and Training (DIETs) to create cadres of professional teachers who understand and apply the basics of techno-pedagogy to their classrooms.

DE is aligned to the UN’s SDG 4
EVIDENCE

The key findings of a mixed-methods external evaluation\(^1\) conducted among students through learning assessment tests and interviews with teachers, in 147 schools across seven States\(^2\) of India, are:

STUDENTS

- **Improvement in Learning Outcomes**
  - Students from DE schools scored 17 percentage points higher in academic tests than their counterparts in non-DE school. Composite scores of DE school students showed 20.1% improvement in Science, 17.6% improvement in Maths, and 14.2% improvement in Social Studies.
  - **Increase in Class Engagement**
    - 66% of government school teachers supported by DE reported increased students' engagement through DE Way of Teaching (DEWoT).
    - Every three of four students had participated in a group project or activity related to any of their subjects in class as compared to two of four in non-DE schools.

- **Enhanced Conceptual Clarity**
  - 96-98% of students exposed to DE content (video/animation), felt that it made it easier for them to understand topics, was more interesting to learn, and made learning fun.

- **Technology Use**
  - 70% of students knew how to operate computer independently in DE schools as compared to 39% in non-DE schools.

TEACHERS

- **ICT Integration**
  - 96% of DE school teachers integrate Information Communication and Technology (ICT) while making lesson plans as compared to 55% of non-DE school teachers.

- **Use of Technology as a Pedagogic Tool**
  - 92% of teachers in DE schools used visual aids to explain topics almost on a daily basis as compared to 61% in non-DE schools.

- **Quality of Teaching**
  - 85% of teachers in DE schools reported that the program helped them to improve their quality of teaching.

CONCLUSION

Evidence from the evaluation shows that DE Program has been successful in significantly improving learning outcomes on key subjects (Maths, Science & Social Studies) as well as ICT (Information, Communication & Technology) competencies among students. Programmatic interventions have played a key role in motivating the teachers to adopt technology as a pedagogical tool. Despite infrastructure constraints in some schools, teachers are using the new Teaching-Learning methods in classes in lesson-planning, leading to higher student attendance rates in schools, better quality of teaching in school and improved student performance. Considering the achievements of the program, the next logical step would be expansion to non-DE schools in other locations, in partnership with the government and other stakeholders.

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\(^{1}\) Evaluation Report on DE Program, KARVY INSIGHTS, 2019

\(^{2}\) Karnataka, Odisha, Punjab, Tamil Nadu, Telengana; Delhi and Haryana

IMPACT STORIES

Thanks to Digital Equalizer, I rely less on memorizing answers, and concept clarity has improved. Ever since the teachers started using animations and videos in class, my concentration and enthusiasm started increasing," says Kalyani Mahabhoi, Grade 8 student of Government ME School in Odisha (Pic 1).

Kalyani’s exposure to Digital Equalizer (DE) started two years ago when she was in Grade 6. She used to average 70-80% scores and her teachers would urge her to try harder. Through DE Way of Teaching, students were assigned more group activity and project work. Digital Equalizer ensures that students in public/government schools have access to quality education and a robust learning environment. Now in Grade 8, her academic performance has improved significantly. “I didn’t solely rely on memorizing the syllabus to perform well, I started understanding what I was being taught. My marks in Science improved from 81% during half-yearly exam to 95% during the end-term examinations and I topped my class. Now my friends and I spend all the free time we get in the computer lab. I just feel I have so much more to learn and I cannot wait for my next DE class to take place.”

Digital Equalizer has resulted in better retention rates among students of Government ME School. Even teachers acknowledge the positive impact created by the integration of technology as a pedagogical tool.

“I used to work hard at teaching Science and Mathematics in a way that makes it interesting for the students. They were not concentrating in class and thus performing badly in tests. The biggest help I received was when we started the Digital Equalizer program in our school, it helped greatly in lesson planning”, shares Mitaswini Panda, Assistant Teacher for Maths and Science in Kalyani’s school (Pic 2).

Digital Equalizer has not only equipped the school with a computer lab, edukits and flipped classrooms, it has also delivered digital content for Science, Mathematics, Social Studies, English, IT literacy and Financial literacy. She adds, “I started seeing gradual improvement, not just in the students who studied well but also among the bottom performers of my class. I also noticed that they participated more freely in class and even attempted to answer questions that were asked of them.”