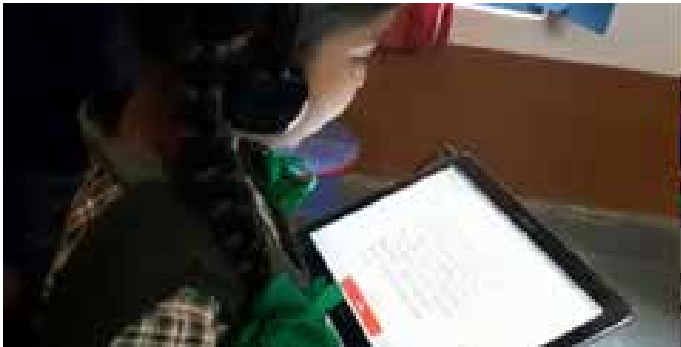


Collaborating to assess spoken language fluency

EDUCATION

The automated spoken language fluency assessment system has been trained and successfully validated on data collected so far.

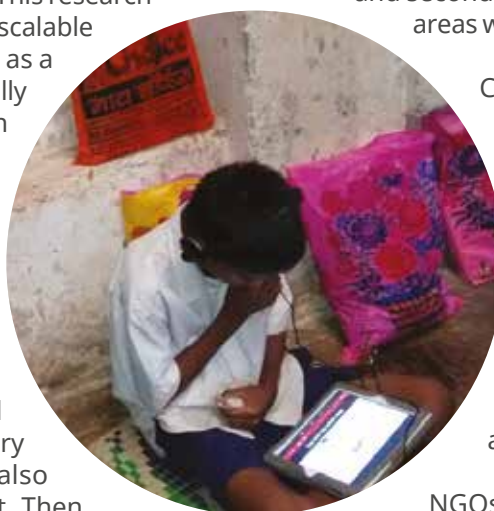


A Class 6 student recording a story in Bellaravada, Karnataka

- An MoU discussion with Pratham for collaboration around a customized digital solution for automating the ASER test.
- A one-day pilot successfully conducted in Bellaravada, Hubli, Karnataka with the Deshpande Foundation Skill in Village team.
- Data collection exercise carried out with 30 children of Dosti Foundation School in Mumbra, near Mumbai.
- Field trials to be conducted in Navjyoti India Foundation (NIF) centers in New Delhi and Haryana soon.

These are some of the ongoing interactions that speak of the TCTD-funded Education project Automatically Assessing Spoken Language Fluency. This research project aims to provide an affordable, scalable technology solution that can be used as a literacy assessment tool while potentially providing feedback on pronunciation and fluency based on audio recordings of reading. Thus, struggling learners in low resource settings can benefit from a digital aid in the context of spoken language training in this project led by Prof Preeti Rao, Dept. of Electrical Engineering.

Presently, a system has been developed wherein the student can listen to a story (from a narrator) on a device and also read the story out loud and record it. Then automatic speech recognition, signal processing and machine learning algorithms are used to analyze the recorded speech and provide ratings based on standard rubrics such as the correct number of words spoken per minute (WCPM) as well as fluency attributes which predict how well the reader grouped words into phrases, paused at appropriate places and used expressive variation to convey the meaning effectively.



An example report generated for a student

The content for reading is available in the form of story text displayed on a mobile device. The level of difficulty for reading can be customized from one line per page to paragraphs according to the reading ability of the student. Though the current focus of the project is English language, the developed methodology can be applied to vernacular languages as well. The current target audience is primary and secondary school students especially in rural areas with lack of exposure to spoken English.

Currently, field data collection has been initiated with the collaboration of IITB Campus School using a customized reading and recording app. Expert raters (retired English teachers) have been enlisted to provide feedback in specially designed interfaces. The system has been trained and successfully validated on the data collected so far (about 100 children). It is currently available as an API call for recorded audio uploads.

NGOs in remedial education have shown interest in the project. Efforts are on to collaborate with such teams to carry out pilots that involve field data collection and analyses on their selected populations to obtain the much needed feedback and validation to progress further towards a fully integrated system.

The project team

