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Multilingual Children's Speech Assessment Platform for Literacy and Language Learning

Results in Brief

Speech recognition for 100 % child literacy through SoapBox Labs

What if a cost-effective speech recognition technology could successfully help teach children from 2-12 years old how to read? This is the promise made by SoapBox Labs. Their software listens as children read texts out loud, provides them with feedback and guides them step by step on the path towards literacy.



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Education is a cornerstone of democracy, equal opportunities and economic prosperity. Likewise, literacy is the foundation of education. So how exactly do we explain that, in 2020, nearly 700 million children can't read a simple sentence? Or that in the OECD only, this deficit is found in 10 % of all children? The truth is, even so-called rich and developed countries can't afford solutions to tackle this problem once and for all.

SoapBox Labs' solution has been built around the conviction that a cost-effective speech recognition technology could close this literacy gap. "Our technology listens to kids as they read out loud. It assesses their ability to recall and pronounce sounds or words and can immediately provide feedback to the child, just as a helpful adult would do," says Patricia Scanlon, founder and CEO of SoapBox Labs and coordinator of the project

SpeechTech4Literacy (Multilingual Children's Speech Assessment Platform for Literacy and Language Learning).

“Children are taught to read in a similar way to how we teach computers to perform speech recognition. First, they learn the building blocks of language, and then they string these units together to make words.”

The efficacy of this method can hardly be questioned: the more you practise, the better you become. The only difference is, children historically have had to rely on their parents or teachers for one-on-one guided reading. Now, voice technology can help with that job.

“In almost every learning situation, teachers and parents benefit from more support especially during this current COVID-19 crisis where kids are learning remotely. For example, parents could lack the skills and confidence to work with their child. Likewise, teachers often have 30 or more students in their classrooms. Benchmarking literacy skills for each child will quickly eat into the time they can spend on other classroom activities and individualised learning support. It's also true that some children simply don't have access to education in a classroom setting, and especially now in the home,” Scanlon explains.

An API for developers to get creative

This last point is particularly interesting. No matter how cheap it is, access to technology will always be a problem for the most deprived households, and SoapBox Labs has factored this in. For people with no internet access, the technology can also work offline. For those without computers, developers can easily create inexpensive apps and tools accessible across a wide range of mobile devices.

SoapBox Labs makes its technology available to developers in the form of a licensed API which can be quickly and easily integrated into third-party products. The start-up works closely with clients to ensure the highest level of accuracy and responsiveness from their voice technology for their clients' tools and products.

“A good example is our literacy-focused partnership with Microsoft. We've undertaken a research study to demonstrate the efficacy of using speech recognition for early readers. The aim of the study was to help education companies interested in integrating our technology into their tools and platforms to understand how voice technology can help young readers. The results of our study were positive and statistically significant,” says Scanlon.

According to Scanlon, being granted EU funding under the SpeechTech4Literacy project provided a substantial boost to the company at a crucial stage in its

development. The EU’s endorsement added a certain level of prestige, whilst the related funding helped them develop what they say is now “the world’s most accurate voice technology for children, with no corners cut and no compromise.”

SoapBox Labs already has 32 clients, encompassing commercially focused education and entertainment companies, and also research and academic institutions in Europe, Asia and the US.

Keywords

- SpeechTech4Literacy
- SoapBox Labs
- speech recognition
- children
- literacy
- software
- API

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