**YenMozhi**

"Giving a voice to interact with the World"

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Autism Spectrum Disorder (ASD) affects **over 18 million people in India** — nearly 3% of our population. For many of them, **verbal communication is a lifelong challenge**. Children often rely on sounds, humming, or gestures to express basic needs, leaving teachers and parents to guess what they are trying to say.

During a visit to a nearby autism school, I witnessed this firsthand: **70–80 students** on a single campus struggling to express fundamental needs like water, pain, or hunger. This deeply emotional experience inspired me to begin surveys, collect reports, and analyze available global solutions. What I discovered was alarming — existing AAC (Augmentative and Alternative Communication) tools are either **expensive**, **software-based**, require **constant internet access**, or are simply too **complex for children in rural schools**.

**YenMozhi (Tamil for “My Voice”)** is my answer to this problem — a **low-cost, hardware-based, AI-powered communication device** designed specifically for autistic and cerebral palsy students. Its core idea is simple but powerful: **convert unique sound patterns into clear, understandable speech in real time**, allowing children to independently express their needs.

**Key Highlights:**

* **Tap-to-Activate, No Buttons:** Many autistic children have atypical motor control or spastic movements, making button pressing difficult. YenMozhi uses **touch/tap activation** for maximum accessibility.
* **AI-Powered Sound-to-Speech Conversion:** A pre-trained ML model recognizes common vocal sounds and maps them to speech phrases like “I need water” or “Help me.”
* **Works Offline:** Preloaded server and ML model enable **completely offline operation**, ensuring functionality even in rural areas. Internet is required only for updates and real-time AI learning improvements.
* **Low-Cost & Portable:** Built using **ESP32 microcontroller, microphone, speaker, rechargeable battery** — total cost is just **₹450–₹600 per unit**, making it scalable and accessible.
* **Child-Friendly Design:** Lightweight 3D-printed enclosure, safe edges, and simple tap interface make it suitable for school use.

**Social Impact:**

YenMozhi is **more than a device — it is a bridge to communication**. It enables:

* **Independence for Children:** They can express needs, emotions, and distress without waiting for guesswork.
* **Peace of Mind for Teachers & Parents:** Removes guesswork, reduces stress, and helps focus on learning.
* **Classroom Inclusion:** Children can participate more fully in group activities and education.
* **Safety & Emergency Response:** Converts urgent sounds into clear alerts, saving precious response time.

**Uniqueness:**

Unlike existing solutions that rely on mobile apps or expensive imported boards, YenMozhi is:

* **Fully Offline**, making it usable in rural and low-income schools.
* **Hardware-First**, not just a software app — a dedicated, plug-and-play device.
* **Affordable at Scale**, bringing assistive technology within reach of every school.
* **Customizable**, with models trained on **Indian students’ real sound data** for maximum accuracy.

**Vision & Future Scope:**

Through my startup **Symphonix**, I plan to refine and enhance YenMozhi with:

* **Multi-language support** for regional reach.
* **Real-time caregiver alerts** through app/IoT integration.
* **Wearable versions** for constant accessibility.
* **Government and NGO partnerships** to distribute devices free of cost to underprivileged children nationwide.

**Conclusion:**

**“YenMozhi is not just an innovation — it is an invention, a mission, and a promise.”**  
My aim is to ensure that **every child’s voice is heard** — whether in a rural school, an urban classroom, or a home with limited resources. With mentorship, funding, and support, YenMozhi can scale to become a **national-level initiative**, empowering millions of voiceless children to interact with the world, learn with confidence, and live with dignity.