BEBE SONG

- Language learning app and supporting **XR equipment** for **hearing-impaired children**
- **Video List**: https://youtu.be/R8UM85vFV40

The number of hearing-impaired children worldwide is increasing rapidly. Hearing-impaired children can recover their listening and communication abilities through training. BeBe Song is a series of learning aids that allow children to use mobile app to perform AR learning on stereoscopic book, and to review what they have learned through simple VR devices. BeBe Song can better help them learn languages at home and at school.

BACKGROUND

Deafness and hearing loss are widespread and found in every region and country. An estimated **466 million** people worldwide - 5% of the population - have disabling hearing loss. Today, **34 million children** have deafness and hearing loss.

SERIOUS SITUATION

The number of hearing-impaired children is **growing rapidly**. It is estimated that by 2035, there will be about **150 million** hearing-impaired children.

Hearing-Impairment ≠ Deafness

If children's hearing impairment **can be found in time** and effective rehabilitation training can be taken, **95%** of them can recover **as normal children**.

PSYCHOLOGICAL PROBLEMS

Hearing-impaired children suffer cognitive impairment of people and things. As a result, they become **irritable**, **self abased** and **selfish**. They may even use **violence** or **self mutilation** to vent their emotions.

45.3% psychological problems

26.3% depression

Hearing impaired children need to recover their ability of **listening**, **speech**, **language**, **cognition** and **communication**. In order to better understand the **core needs** and **frustrations** of those children, I made a hearing assessment of Xiao Rui in the rehabilitation center.

CORE NEED

FRUSTRATION

Through research, I have noticed that **music** and **visualisation** education can attract children's attention well and satisfy their core needs.

MUSIC EDUCATION

VISUALISATION

DESIGN STAGE

However, there is a lack of music textbooks and auxiliary tools which are friendly to hearing-impaired children. I hope to design a **music app AR** and **VR** technology with a **pop-up book** to help hearing-impaired children learn language.

SKETCH

LOW FIDELITY

DEVELOPMENT

1 POP BOOK

2 MODELING WITH BLENDER

3 AR

4 PROGRAMMING—REACT / CSS / HTML

5 VR

HIGH FIDELITY

Sign up: Children can register for BeBe song. Or if they already have the account, they can log in to the application and start the wonderful journey in BeBe song.

Learn the song: Children can choose three modes to practice which can enhance their grasp of words and pitch.

Review: Children can check the learning data, such as learning duration and total scores. It can help to evaluate the learning result.

Spell test: Children can play Scrabble to test whether they can remember the spelling of words.

APP

BOOK & AR SCENARIO

FEEDBACK
1. It sounds very interesting to read.
2. I can sing along with the animals.
3. I want to play them again.

VR SCENARIO

FEEDBACK
1. It's like I've entered this pinky room.
2. Here comes a little rabbit! I can spell it.
3. I can catch the doll.

TEST RECORDS

I brought BeBe Song's series of products to the hearing-impaired children's center for communication with the teachers, testing with the children, and recording feedback.

INTERVIEW

Teacher in the center

"This tool excels in the classroom, actively assisting students in understanding and applying knowledge."

"However, occasional customization may be needed to meet individual student needs."

THE TEST ONE

Age: 3 years old Gender: female

"This is so much fun! I can sing along with the animals, and I really want to play it again!"

"It's a little bit challenging, and sometimes I don't sing perfectly."

THE TEST TWO

Age: 6 years old Gender: male

"This game is so much fun, and I can learn new words too. I love it!"

"I wish there were more different things to try and play with."

Conclusion

BeBe Song series products excel in effectively supporting student learning and sparking their interest; nonetheless, occasional customization may be needed to meet individual needs.

USER SCENARIO

BeBe song app

BeBe song pop book with AR

BeBe song VR game