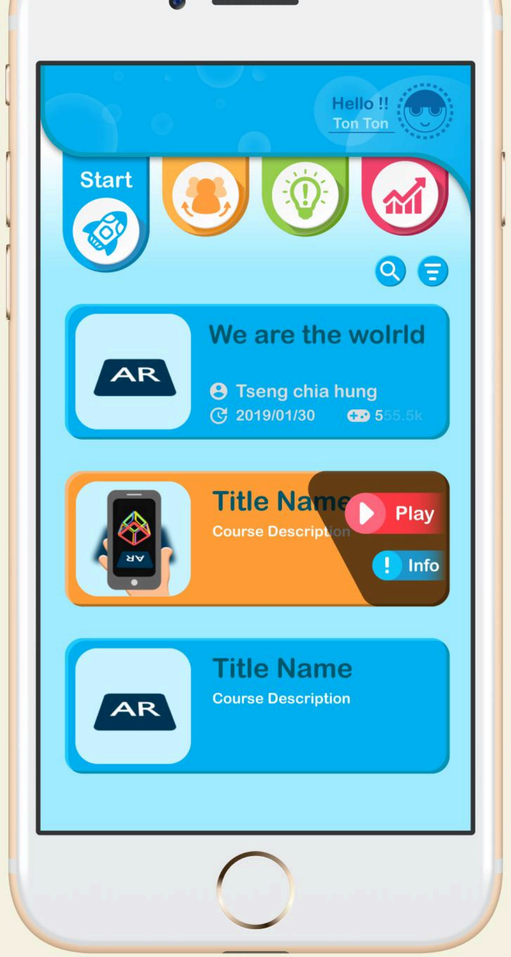
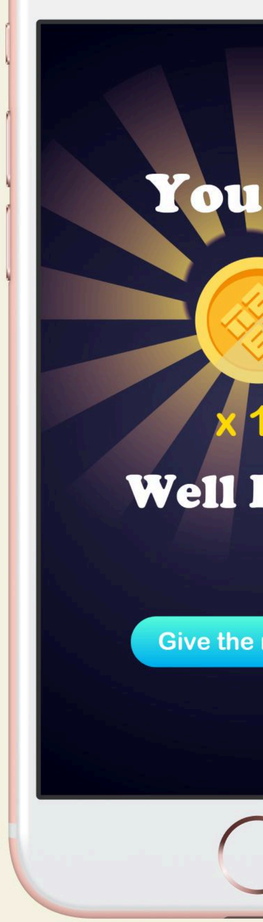
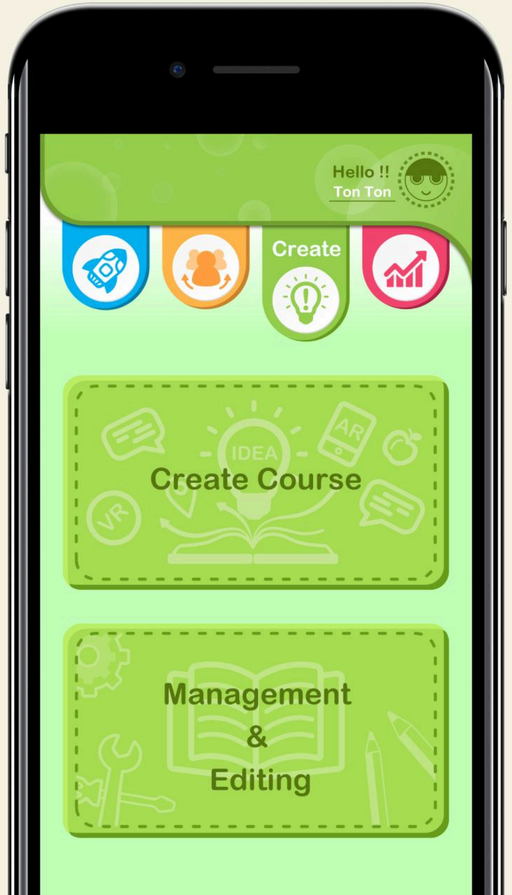
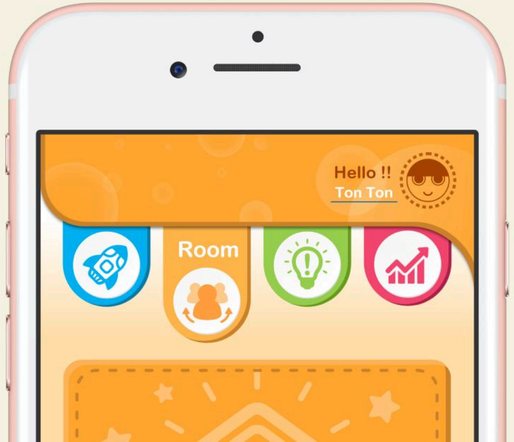
Case Study

Using **Augmented Reality** to reduce the cost and positively impact English learning









Our Success

Using QR codes to show models make our product lightweight and portable. Instead of being high-budget and waiting for a rebuild, the teacher can finish within minutes. Now they just need one device for teaching.

With gamification, students take the initiative to speak and the score support teacher to record their learning effectiveness. After school, the teacher can import students' scores to their computer, instead of the old way of clicking their keyboard and inputting those numbers.

1 Less Cost

Using AR code technology can reduce renovating classrooms by about 90% in time and money.

2 Easy Build

With our three-step construction feature, teachers can prepare a course on a mobile device in under 10 minutes.

3 Efficiently

Add gamification and voice recognition technology to improve students' English conversation.

AR model

Gamification

Voice recognition

Background

Rural primary schools are built with some scenarios to stimulate and encourage their student to speak English. However, students are still afraid of speaking English and seek help from teachers. This makes it hard for teachers to evaluate learning effectiveness. Also, infrequently used and high-budget renovations have left schools looking for innovative solutions.

According to the team interviews, teachers still have many pain points in preparing courses. Most package courses by a publisher are expensive and can not customize. Teachers need to spend more time supplementing materials but still cannot increase interaction with students.

Depending on the Technology Development Program, our team must introduce AR or VR technology to solve the issue. We introduce our AR applications to solutions that reduce the renovation cost and make teaching and learning easier.

Our Members

3 Engineers, 2 Designers

My Role

- User research
- User interview
- Card sorting
- Persona
- How might we...
- User flow
- Information Architecture
- Wireframe
- Prototype

Project Duration

24 Weeks

50+ Screens

Tools Used

Adobe Xd

Photoshop

Illustrator

The Challenge

With limited membership, VR products are more expensive to make than AR. Using technology to reduce the cost of renovating classrooms and increase utilization is not just an issue between teams and teachers. So our team had to discuss resources and constraints with stakeholders.

Most package courses by a publisher and can not customize. Our team can’t design any lesson because it must conform to the curriculum guidelines. With these limits, our team can develop an auxiliary tool that teachers could customize content.

We visited 3 rural primary schools a few times and contextual inquiry. The team found that "reducing the cost of renovation space" was not the main issue. Students were still afraid to practice English conversation and turned to teachers for assistance. It's hard for teachers to evaluate learning effectiveness. Therefore, unless the teacher applies again, students will only visit once.

Another problem is that teachers are limited in preparing course materials. Most teaching materials are packaged by publishers and conform to the teaching curriculum guidelines. It takes lots of time for supplementary materials, and students still listen to their teachers without interacting.

Our team also meets with stakeholders to understand the resources available at the school and the limitations of product development. At the same time, it can also predict the direction of future business development.

After sorting out the design point of view from the data, our team started to formulate hypotheses for the main requirements through the "How Might We" and User Story.

1

How might we help users create new scenarios faster?

As a teacher with limited costs, I wanted someone who could help me build new scenario on a low budget.

2

How might we make the product easier to use?

As a teacher who uses digital technology to assist my teaching, I don't want to spend too much time teaching students to use a new product.

3

How might we design our product that allows users to complete tasks on a single device?

As a busy teacher, I want to be able to prepare lessons anytime, anywhere, and keep tracking my students' learning status.

Presume

Our team evaluate the development of an app that uses AR code technology to present a 3D model, allowing students to explore and discover questions, also add voice recognition technology to judge the accuracy of the answer and give a score.

Consider the difficulty of teachers in preparing teaching materials and using computers to register students' grades. We design "to grasp information in one device" so that users can complete basic needs with one mobile device.

The Solution

Using AR technology to transform study is more interesting. We inspire some AR applications such as Pokemon GO, students can explore the answer and using voice recognition for learning speaking. Also, the scenario can change anytime with lower prices.

Referring to a textbook is only digitization. Without curriculum-making experience and team, open some permission for teachers can customize. Let teachers design the content to support their teaching. Our product can be a tool that supports teacher teaching.

Goal

Use our app to replace renovating classrooms.

Cooperate with the government project to build wifi all over the school.

User Needs

Let students actively practice English conversation. Significantly assess students' learning effectiveness.

Easier preparation of teaching material, even complete works in one device.

Technology

AR code with mobile device.

Voice recognition technology provided by Google.

Connect to Google Poly's 3D model database.

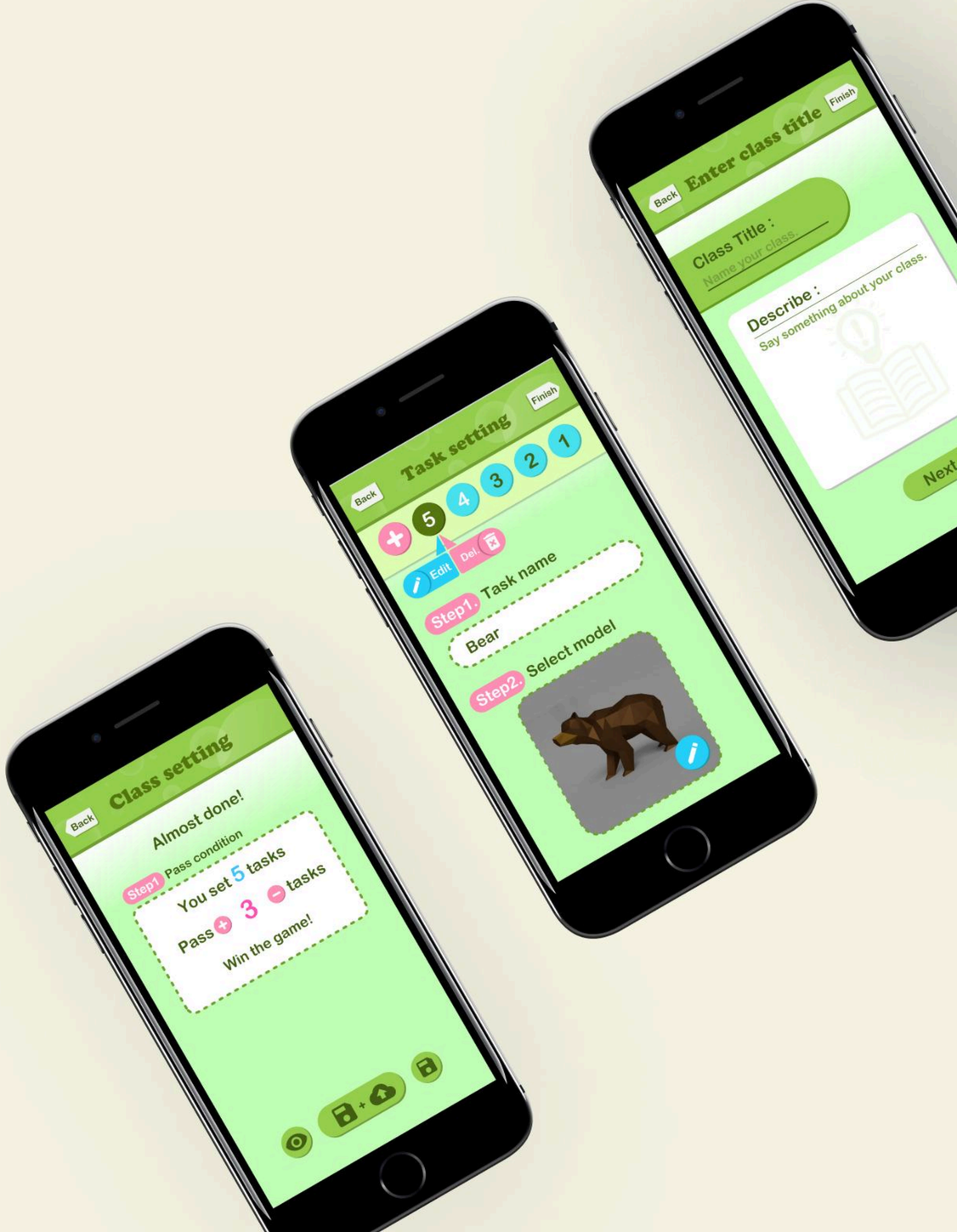
Easy to build

Our team discussed teachers' experiences in preparing teaching materials and designed a simple lesson building feature according to the operational limitations of mobile devices.

Filling out complex forms on mobile devices is difficult without the responsiveness of a mouse. Therefore, the team simplified the steps to three, and users only need to fill in basic information that it will construct a course quickly.

For AR rendering of 3D models, we used Google Poly to solve the shortage of model databases, allowing teachers to use 3D models in the classroom. Assuming teachers need additional models, they can commission our team to design them and upload them to the library for use.

<10 min. to create a lesson



Explore+Discovery→Learn

Gamification makes our product appealing for students to practice their speaking. Explore is the motivation for a student to find out something somewhere. Students can scan the QR code to explore the task. The card will show an AR model and question. After they speak the answer and check by voice recognition, it will give a score for teachers to record their learning effect.

Use the camera to scan and explore the task.

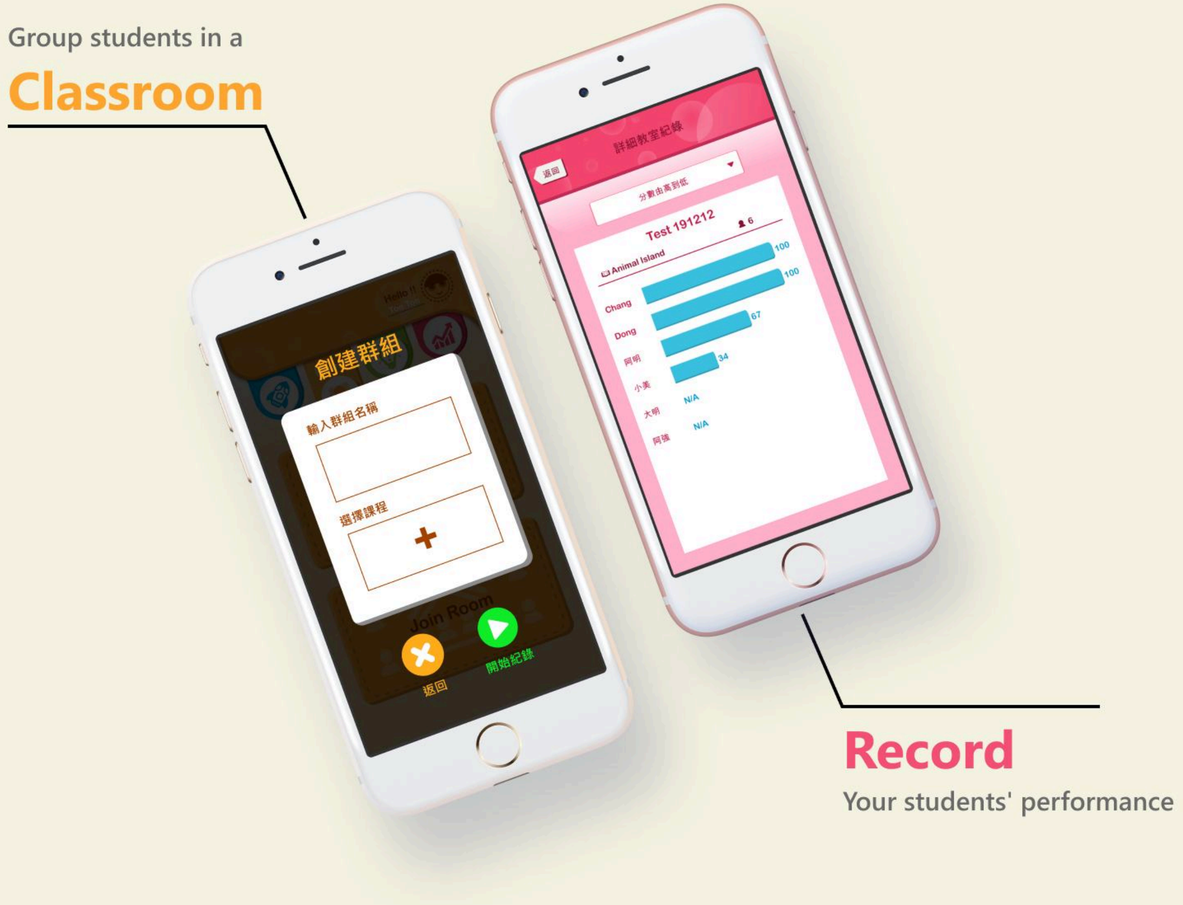
Discover the model and answer the question.

Learn how to spell and practice conversation.

All in one device

To facilitate teachers to manage students' classes and evaluate learning effectiveness, our team has developed a "group" feature to allow teachers to focus on students and prevent students from clicking wrong or getting lost in courses.

Students’ grades after practice can be viewed directly on their mobile devices, or teachers can be exported to a computer for compilation, saving the time of entering grades individually.



What’s next?

Three schools are using our product and it’s helpful. For teachers are easy to prepare a course with less time and change theme quickly. Now they just need one device for teaching. After school they can import students’ score to their computer, instead the old way that click their keyboard and input those numbers.

Looking to the future, we will continue to grow our product, even open for more users. Our team will release more interaction such as multiple selection questions soon. In this way, teachers are creating a new teaching experience without limit.