

MUSHROOM

A PORTABLE READING SPACE FOR STUDENTS IN
YUNNAN HOPE PRIMARY SCHOOLS



INDIVIDUAL PROJECT

DIRECTION/

Service Design
Recycled Material Design

TIME/

2024.10-2024.11

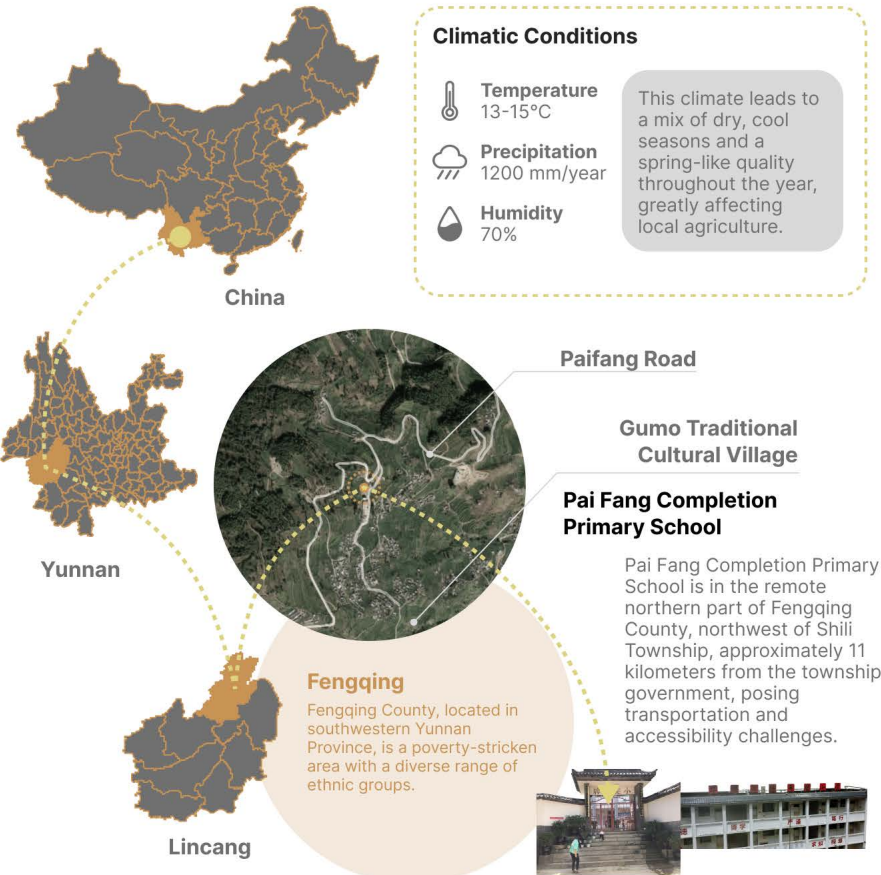
Inspiration



In 2022, I participated in the Singing Star program initiated by students from Southeast University's School of Architecture - a mission trip to an elementary school in Yunnan. Although I didn't go to the field because of the epidemic, I have been paying attention to the situation of the mission site. I learned that the students in the local Hope Primary School did not have a rich after-school life, and lacked cultural and artistic activities as well as aesthetic education programs, so I had the idea of doing something for them.

Background

Site Analysis



Characteristics



Abundant Agricultural Resources
The region boasts favorable conditions for agricultural activities and the growth of various plants and fungi, supported by a favorable climate and rich soils.

Transportation Obstacles in Mountains

The mountainous landscape poses serious transportation challenges, complicating access to remote areas and increasing costs in moving goods.



Insufficient Educational Facilities
The area struggles with inadequate educational resources and facilities, affecting the quality of education.

Poor Primary School Education Situation



Insufficient Reading Environment
Limited space and resources hinder a conducive reading atmosphere.



Irrelevant Reading Materials
Donated books often lack connection to village life, resulting in disinterest.



Inadequate Family Support
Insufficient parental involvement reduces motivation in reading.

Influence



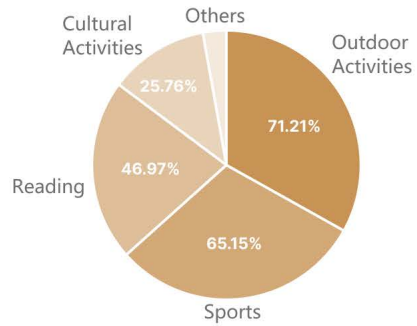
Problem Statement



Yunnan is rich in mushroom resources, and we aim to leverage this local material to address the scarcity of educational facilities in impoverished primary schools. Our goal is to provide these children with a better education while fostering a connection with nature, enhancing their appreciation for the local edible mushroom industry.

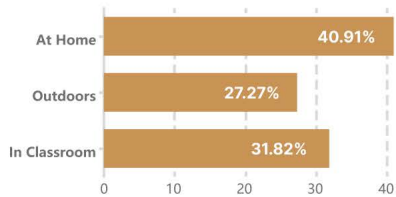
Questionnaire

1 What **leisure activities** do you usually engage in after school? (Multiple choice)

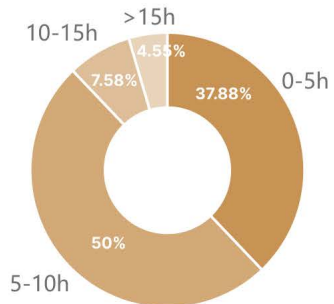


71.21% of students choose **OUTDOOR ACTIVITIES**.

3 **Where** do you usually read during the week?



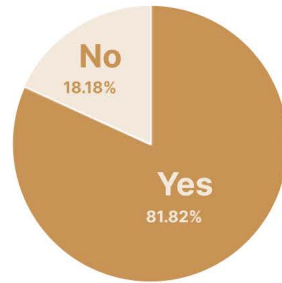
5 **How much time** do you spend on reading each week approximately?



Most of the students spend **0-10h** each week on reading.

These insights highlight the students' preferences for integrating reading with outdoor experiences while indicating a need for more engaging reading opportunities.

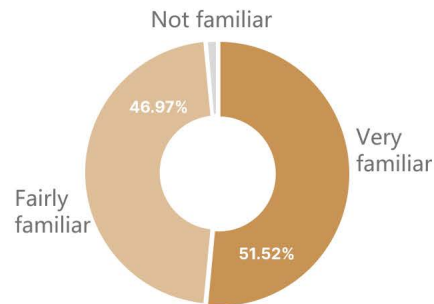
2 Would you spend more time on reading if you could **combine reading activities with hands-on activities** (e.g. outdoor collecting, DIY, etc.)



4 If there was a book corner that would be portable at all times, what would you like it to look like? What are some of the **features**?

**Bright Movable
Clean Quiet
Beautiful Intelligent
Free Cozy
Spacious Entertaining
Comfortable**

6 What is your level of **familiarity** with fungi or mushrooms?



Interview

Q1 : What do you want from a reading corner?

A1 : I'd like it to be **private and soundproof**, so I can read without distractions. It should look **fun and inviting**.

A2:It should be **outside the crowded classroom and flexible, maybe movable**. A **quieter** space is essential.



Q2 : Do you have a dedicated library or reading room?

A3 : We only have a **small bookshelf** at the back of the classroom. They **don't read much** outside of textbooks. Most of the books are donations, and they don't really cater to their interests. If a child has a smartphone, they prefer to spend time on it instead.

A4:Additionally, the kids enjoy **outdoor activities** more, so they don't read much in their free time. For example, we have a lot of mushrooms around here, and the children enjoy going into the fields to **pick mushrooms** for fun.

Q3 : How much do the children read outside of textbooks?

Q4 : What activities do students usually enjoy?

Conclusion/Design Statement

To enhance reading engagement and combine it with outdoor activities, the design will focus on creating a flexible and inviting reading space. This area should be:

Interactive and Fun

Incorporate DIY activities that connect reading with hands-on experiences, such as mushroom collecting and crafts, aligning with students' interests and preferences.

Portable and Movable

Easily relocated to different outdoor settings to encourage outdoor reading experiences.



Design Concept

Lack of adequate budget

Use common local sources of fungus

Lack of hands-on experience

Enhance the DIY interactive experience

Lack of reading environment

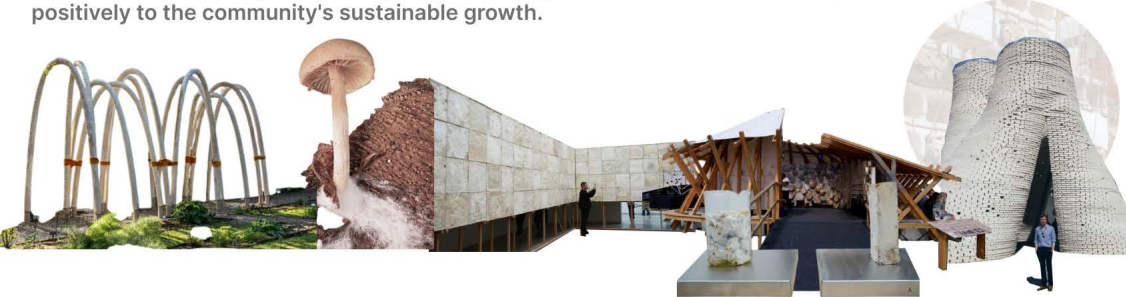
Create small wraparound reading spaces

Materials Selection

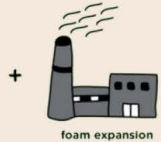
Why Choose Mycelium ?

Yunnan is known for its diverse climate and rich flora, making it a prime location for edible fungi. The region produces over 70% of the country's edible fungi, and local culture deeply values foraging for wild fungi in the mountains.

Mycelium, the vegetative part of fungi, is particularly relevant as a building material. It can be sustainably sourced and offers unique properties for construction. Utilizing mycelium not only strengthens local identity but also allows students in mountainous areas to engage hands-on with their environment. This approach reduces costs associated with transporting traditional building materials. Ultimately, our goal is to enhance the reading environment for students, promote their overall development, and contribute positively to the community's sustainable growth.



petrochemical extraction



foam expansion



conventional insulation



mycelium

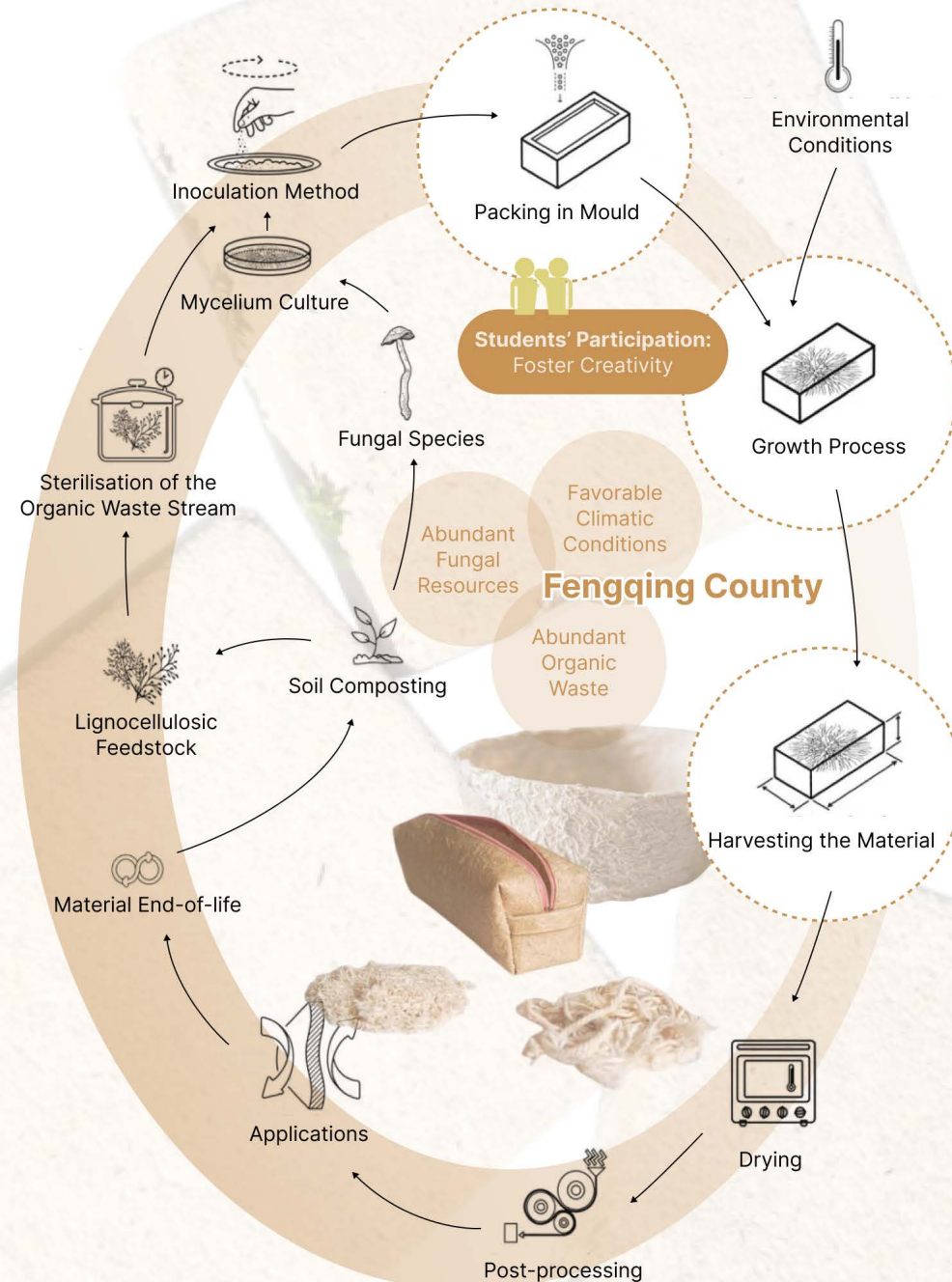


agricultural waste



Mushroom[®] Insulation

How to deal with Mycelium ?



Making Material Prototype

In order to combine mycelium and paper materials, I did some material experiments.



Raw Material Preparation



Dewatering



Pulping



Creating Growth Environment

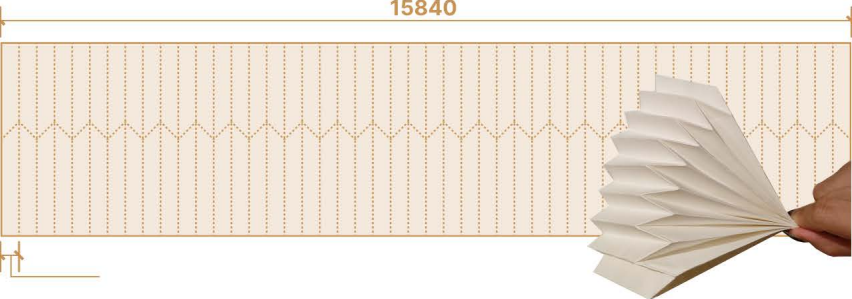


Forming

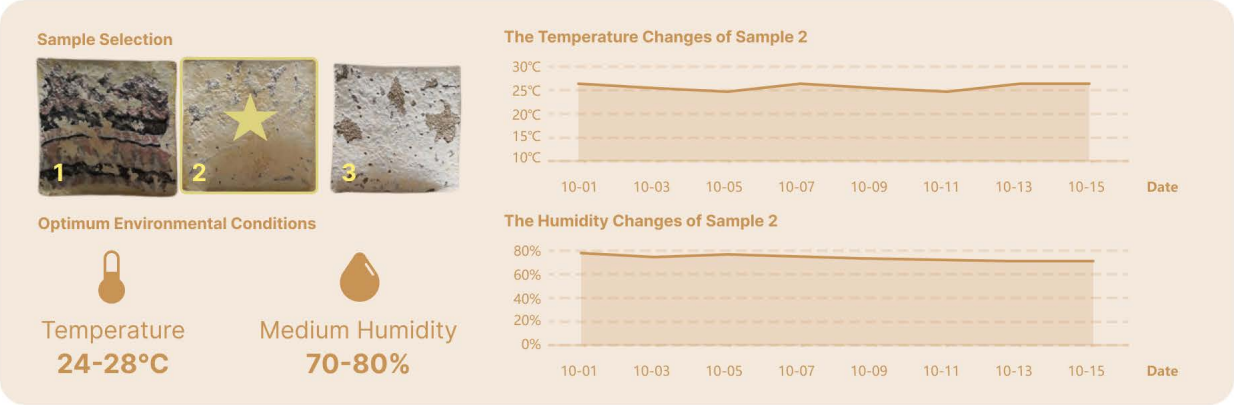


Harvesting and Post-processing

Generation of Folds

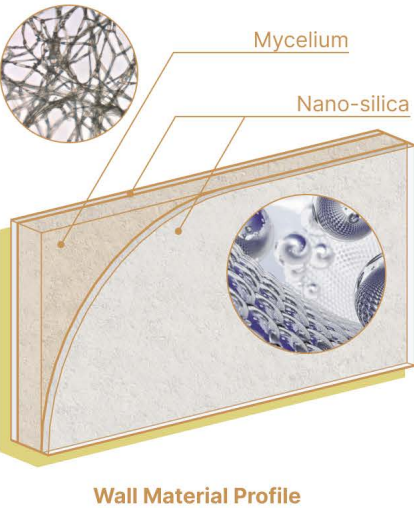


Material Research

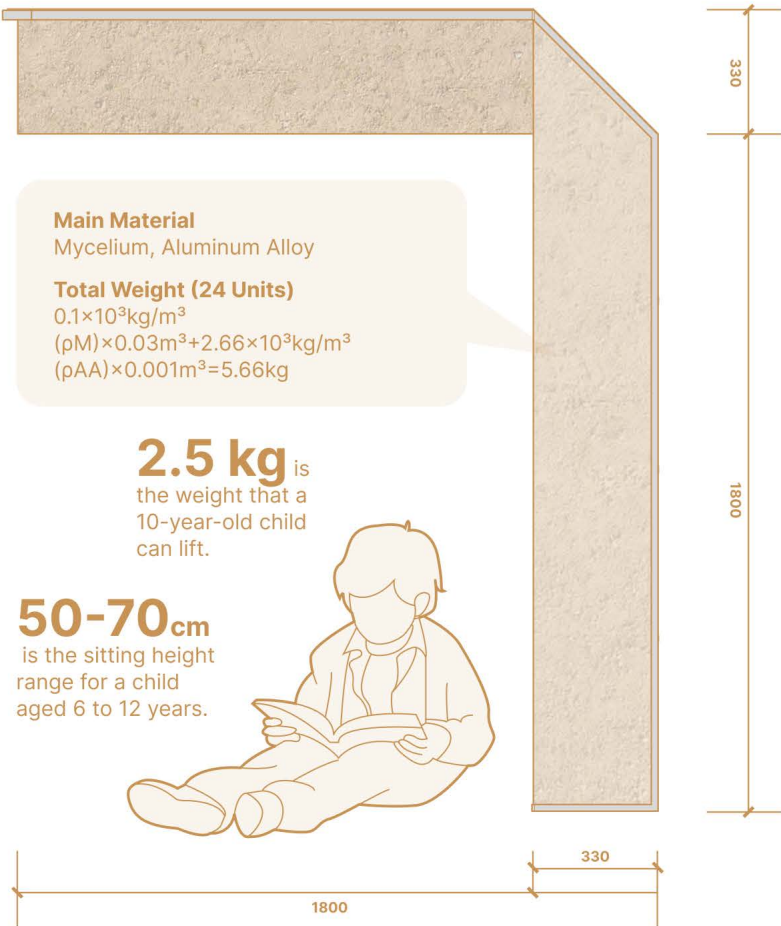


Material Refinement

- Advantages of Mycelium**
- Fire Retardant
 - Humidity Resistant
 - Soundproof
 - Circular Economy
 - Easy to Fix



Structure Statistics



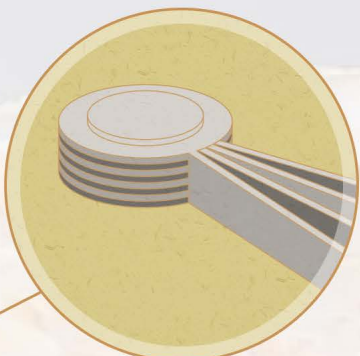
Design Sketch



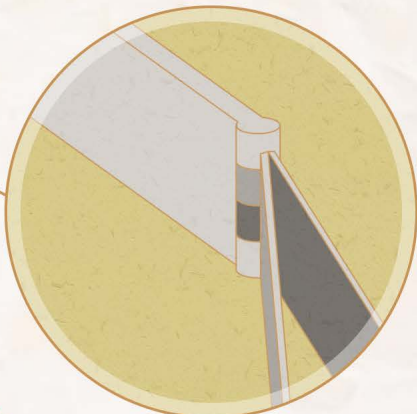
Inspiration :
Given its intended outdoor placement and the need for portability, I aimed to design this small space to be both collapsible and flexible. Inspired by the intricate folds of a fungus, I envisioned this reading space to emulate a fungal fold-like effect.



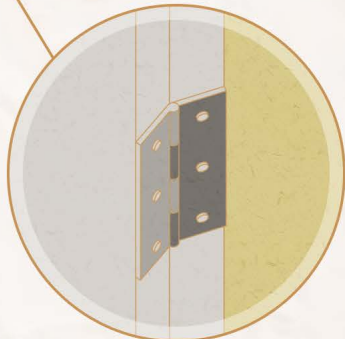
Details



Top Spindle Detail

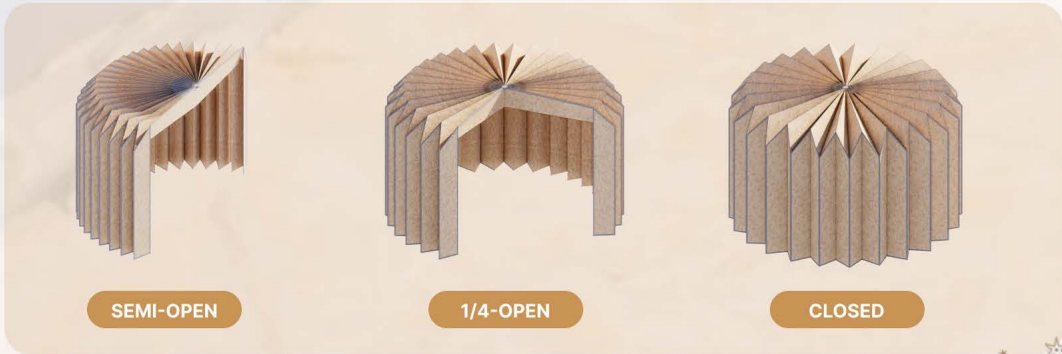


Foldable Joint Detail



Hinge Detail

Rendering



Combination

The reading space can be arranged in various configurations, such as linear or grouped, to meet different needs. For individual reading, the linear setup is ideal, while the grouped layout is perfect for small reading seminars.



LINEAR



GROUPED



Journey Map

To enhance the service, I try to develop an APP to integrate with the reading space. Here is the users' experience process.

01 Awareness Stage



- **Behavior:** Listen to teachers, look at promotional materials shown by volunteers.
- **Touchpoint:** School, volunteers.



02 DIY Stage



- **Behavior:** Follow instructions to make the space under the guidance of teachers or volunteers.
- **Touchpoint:** DIY workshop, mycelium materials, teachers/ volunteers.



04 Exploration Stage



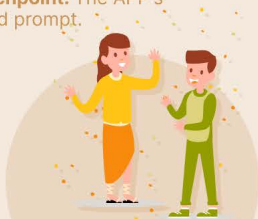
- **Behavior:** Look for mushrooms in the mountains and scan them with the APP.
- **Touchpoint:** Mountain forest environment, the APP.



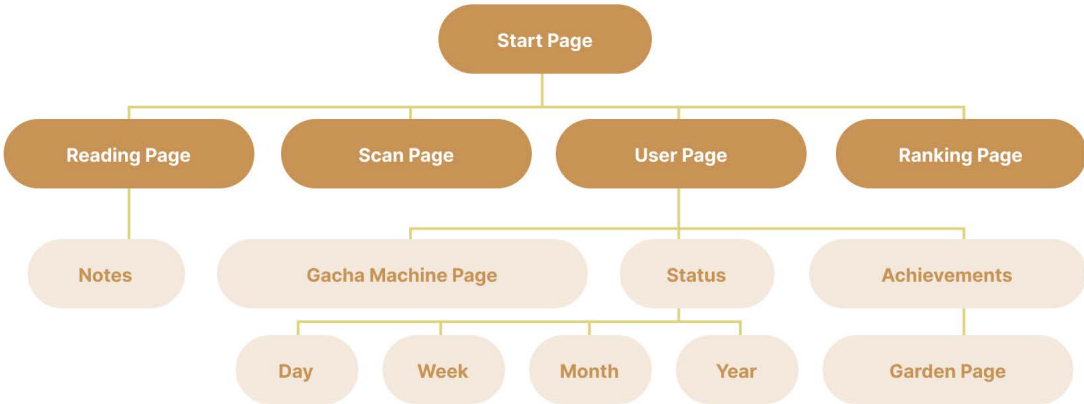
05 Reward Achievement Stage



- **Behavior:** Receive a notification of the virtual fungus reward.
- **Touchpoint:** The APP's reward prompt.



Information Architecture



Design Style

Logo Style



Mushread



HEX
#F88A0D



HEX
#FFA62B



HEX
#FEECC1



HEX
#C89355



HEX
#705026



HEX
#929C00

The logo merges a vibrant mushroom with an open book, symbolizing growth, learning, and nature. It reflects the product's focus on rewarding reading and inspiring discovery through exploration and curiosity.

Elements



Mushroom

Mushrooms serve as the main theme and main material of the whole product.



Spore

Spores are the younger mushrooms, symbolizing the sowing of knowledge and the newborn power.



Reading

The book form encourages children to open their books while using the APP.



Nature

The trees represent nature, implying the function of identifying mushrooms outdoors.

Font Standardization

Font Style
Grade 1 Title

LUCKIEST GUY 36
LUCKIEST GUY 16

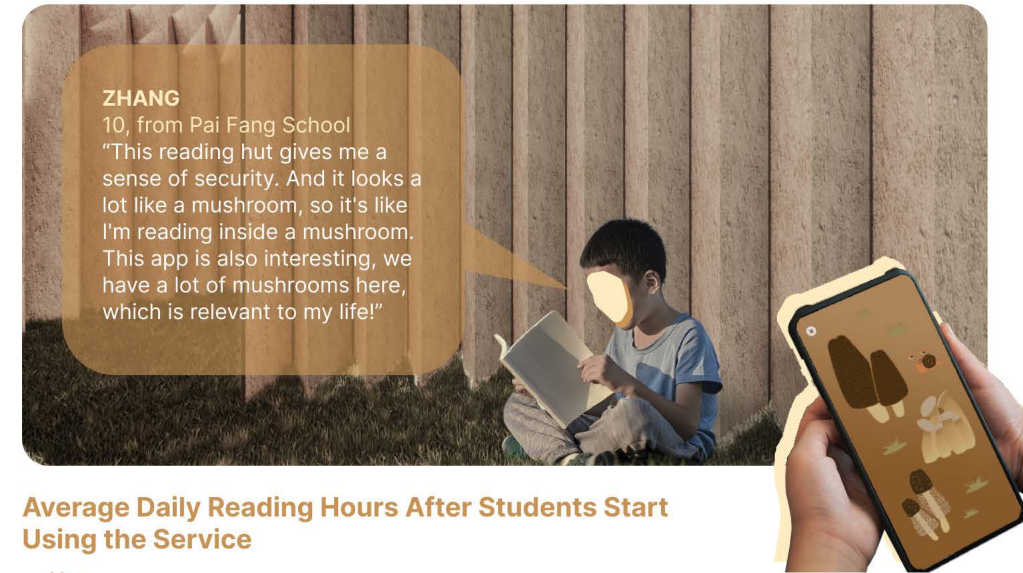
Headline
Text

LUCKIEST GUY 36
LUCKIEST GUY 12

Hi-Fi



User Test



Average Daily Reading Hours After Students Start Using the Service



Advantage

1 Increase students' interest in reading



2 Combine outdoor and reading activities



3 Increase children's identification with the local mushroom industry



Improvement Insight

- The **mushroom recognition** feature of the app is currently disconnected from the **reading** component.
- Additionally, it is crucial to find an effective way to combine the **DIY process for kids** with the highly regulated **assembly procedure**.