



A TOOL TO SOLVE A PROBLEM OF COMMUTING BY BICYCLE

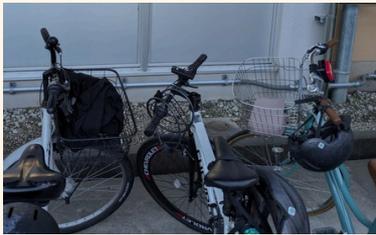
Introduction

Our research is about commuting to and from school by bicycle. We found a problem: parking bicycles straight is difficult. To solve the problem, we employed "design thinking".

1. Interview

Q. Are there any problems with commuting to school by bicycle?

A. Parking their bicycles straight is difficult because their front wheel turns a little and their baskets hit each other.



2. From the interview

- Keep the bike straight
- Creating a portable tool

We created a tool using things that are close at hand, to hold a bicycle straight.

3. For prototype production

First, we looked at a bicycle. We found some key points for production.

- ① Hold the body and the wheel.
- ② Securing the front wheel makes it difficult to tilt left or right.
- ③ Make the tool portable.

4. Type 1

- We thought about using clothespins to secure the tires.
- From the test

The clothespin rotated

- Attach anti-slip pads to clothespins.
- Also, the clothespins are difficult to open and attach. Power is needed.



6. Type 2

- Only the front wheel was secured.
 - Easy to install.
 - Bubble wrap was added to the front part
 - Clothespins stopped rotating
- From the test
 - Problem: an unpleasant noise was heard.**
 - **Solution: the part that touches the ground needed to be wrapped in bubble wrap.**

7. Final version

We wrapped the two parts of the pin in bubble wrap. The bike can be steadied even when tilted. It was also confirmed to be sturdy.



5. Improved version of type 1

A sponge was attached to the inside of the clothespin.

- This can hold the tires more stably than Type 1.
- **Problem: difficult to install it on a bike.**

- What we learned
 - Even if it can be attached, it is not suitable if it is not easy to use.
 - **Solution: secure only the wheels.**



↖ Weight ↗

8. Conclusion

It was difficult because it was an issue that had not yet been resolved. We hope many people will use this tool. This will make the bicycle parking lot easier to use.