QAIWAN INTERNATIONAL UNIVERSITY

SIMPLE SOLUTIONS FOR SAVING POWER IN LOW-RESOURCE HOMES

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Introduction

The purpose of this report is to outline a systematic approach using Design Thinking principles to address the challenge of saving power in houses with limited resources. By empathizing with residents, defining key challenges, generating innovative ideas, prototyping solutions, testing, iterating, implementing, evaluating, and sharing insights, we aim to develop effective strategies for reducing energy consumption and improving energy efficiency in these households

Empathy

Empathy: Understanding the Needs of Residents
In this phase, we sought to deeply understand the daily experiences, challenges, and priorities of the residents living in homes with limited resources. By engaging directly with these individuals, we gained valuable insights into their unique circumstances and concerns related to energy usage.

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Through interviews, surveys, and home visits, we listened attentively to the residents' stories, allowing us to empathize with their lived experiences. We learned about the difficulties they face in managing their energy consumption, the impact of high electricity bills on their finances, and the frustration caused by unreliable access to electricity.

Furthermore, by observing the residents in their homes, we gained valuable firsthand knowledge of how energy is used and wasted in their daily routines. We witnessed the struggles of families trying to stay warm in poorly insulated homes during the winter months and the challenges of managing without electricity during power outages.

Through these interactions, we developed a deeper appreciation for the residents' perspectives and gained valuable insights that informed our subsequent efforts to develop effective solutions. By placing ourselves in their shoes and understanding their needs firsthand, we were better equipped to design solutions that are truly responsive to their circumstances and conducive to their well-being.

Overall, the empathy phase served as a crucial foundation for our approach, ensuring that our efforts to save power in homes with limited resources are rooted in a genuine understanding of the residents' experiences and aspirations.

define
The Issue

The first thing we do is figure out the specific problems and good chances to save power in houses with not a lot of resources. Here are the main problems we found:

1. High electricity bills: Many homes have to pay a lot for electricity, which makes it hard for them because they don't have much money.
2. Inefficient appliances: Some machines in homes use up too much electricity because they're old or not made to save energy.
3. Lack of insulation: When homes aren't built or fixed properly, they lose heat or cool air, which makes them use more energy for heating or cooling.
4. Unreliable access to electricity: Sometimes, homes don't get electricity when they need it, which makes it hard for them to save energy.

Ideate

Next, we come up with ideas to solve these problems:

1. Get better appliances: Switch to machines that use less energy, so homes don't have to pay as much for electricity.
2. Use renewable energy: Put up solar panels or wind turbines to make clean energy and not rely too much on the power company.
3. Share energy with neighbors: Connect homes together so they can share extra electricity, which helps everyone use less energy.
4. Help pay for energy upgrades: Give money or discounts to help homes buy things that save energy, like better windows or insulation.

Prototype:

We make models or drawings to show how these ideas could work:

1. Show how new appliances can save money on electricity bills.
2. Make a computer animation showing how solar panels or wind turbines can make power.
3. Draw pictures showing how homes can connect to share energy.
4. Make charts or graphs showing how much money people could save with help paying for energy upgrades.

Test:

We try out these ideas in real homes, and ask people what they think. We also see how much energy they use before and after trying the new ideas to see if they really work.

Conclusion:

By using this way of thinking, we've come up with smart ideas to help homes with limited resources save power. We've figured out problems, thought up solutions, made models, and tested them out. This can make a big difference in helping these homes use less energy and be more sustainable.

Thank you !