Name of Case Study: (Medically Themed) Stem Toys for Children

Case Description: STEM toys are great for early childhood development because they introduce children to science, technology, engineering, and math in a fun and accessible way. Medical STEM toys can get children interested in medicine by letting them role-play as doctors. These toys help kids learn basic medical concepts and procedures, making them curious and eager to learn more about medicine. They are also intended to help children develop empathy and social skills by thinking about others' well-being, as well as improving their motor skills, hand-eye coordination, and problem-solving skills.

Value Sensitive Design Discussion Questions

1. Who/what are the direct and indirect stakeholders of this product? Brainstorm as many as possible.
    a. A stakeholder of a product is an entity that can either affect or be affected by the product.
    b. Direct stakeholders: Users (who directly interact with the product).
    c. Indirect stakeholders: Non-users who have a stake in the product.

2. What are the values and needs of these stakeholders? Brainstorm as many as possible.
    a. Values are what are considered important or beneficial by individuals or groups.
    b. Certain values can be abstract and need to be translated into more concrete and specific needs in a context.

3. Are there any conflicting values or needs among the stakeholders? How can these conflicts be addressed?

4. What initial design concepts can you develop, taking into consideration the identified stakeholders and their values?

5. What are some potential scenarios for the design's use, and how well does the design align with different stakeholder's values and needs in these situations?

Design Task:
Design a doctor kit for toddlers aged 3-5 or 4-8 years old to role-play as doctors or a specific type of doctors, such as dentists. The kit should include a variety of tools commonly seen in medical settings, although the exact tools included in the kit are up to you. The goal is to create a fun and educational tool that helps children learn about medicine and develop relevant skills.

There are at least two types of this doctor kit, both of which can be found on Amazon:

1. Non-smart versions: These are purely physical toys that require more imagination from children, focusing on tactile and hands-in play.
2. Smart version: They can interact with a free app that can be downloaded on a tablet. Children can use the tools to interact with the app, such as taking the temperature of a virtual patient or using X-ray and ultrasound tools (toys) to visualize bones and organs in the app.

When developing initial design concepts, compare the costs and benefits of each option. Consider whether your design should be a smart version or not and provide reasons for your choice. Then, propose design concepts that realize your choice. If you wish, you can look at existing products on Amazon and seek to improve on them or address the reviewers' criticisms of these concepts.

References:

Here are some examples of non-medically themed stem toys designed by northeastern students:

- Buttons, pizza trucks and robot cars. Northeastern engineering students design and build toys that teach STEM to school children in Oakland

Some medically themed stem toys for toddlers (age 3-5 or 4-8) on Amazon:

- Amazon.com: 3233091011 - STEM Toys: Toys & Games

Some value and ethical considerations about toy design in general:

- When it comes to toy design, simpler may be better | Waterloo News
- The Responsibility Of Toy Manufacturers - FasterCapital
- Sustainable Toys: What Every Parent Needs To Know About Choosing An Eco-Friendly Toy
- https://www.thegoodboutique.com/inspiration/the-importance-of-ethical-toy-brands-for-your-2-year-old?srsltid=AfmBOoql6HLBUtemFjwHS8tXgUqll5ULgM2d1G63ddrQcatkI1xJINzU