Thesis Portfolio

The Design and Evaluation of User-Interface Prototypes for a Next-Generation Dishwasher
Mobile Application
(Technical Report)

The Parental Role in the Child-Artifact Relationship in Relation to STEM Toys
(STS Research Paper)

An Undergraduate Thesis

Presented to the Faculty of the School of Engineering and Applied Science
University of Virginia • Charlottesville, Virginia

In Fulfillment of the Requirements for the Degree
Bachelor of Science, School of Engineering

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Spring, 2021

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Sociotechnical Synthesis

Understanding how humans interact with technology can lead to greater insights which can further improve these existing technologies. An example of a technology that needs to be understood more is the STEM toy. The transition from our normal lives to a socially distanced one means that the location in which students are "in school" and their parents are "at work" refer to the same place. With a focus on the educational aspect, the impact on children spending more time with their parents, which increases the importance of the parental role, needs to be considered. Hence, there is a greater need to understand the relationship between the parent, child and toy. In my STS research, I observed the parental role in the child-artifact relationship through a literature review, observational and semi-structured interviews. One of the findings through these research methods is that there needs to be a balance in the parental role when it comes to the child-artifact relationship. Also, it is imperative for the parent to be cognizant of their own biases as well. Future work should address the relationship between the toymaker and the parent.

The Next-Gen dishwasher is another example of a technology that should be examined to understand how to improve the current dishwasher. The worldwide annual sales of home appliances increased from 580 million units in 2013 to 700 million units in 2017 (Statista, 2017). This upward trend motivates companies to create innovative solutions to appeal to the consumers. In my technical project, the capstone team created user interfaces for a Next-Gen Artificial Intelligence (AI) dishwasher by conducting user interviews and surveys to understand the perspective of the user. One of the key features in the app is an onboarding process to understand the daily needs and patterns of the user. By using this information, it is easier to output the cycle that meets the user's needs. Improving user experience through STEM toys and Next-Gen AI dishwashers makes a sustainable impact on society.

Both of these projects allow for a better understanding of user experiences with technologies which allows to make a meaningful impact on our world. Meeting the criteria that the user requires allows for an improved product. By being aware of all of the relationships and their implications, that are tied with the technology, can lead to greater insight on how to improve the experience with the technology.