Frequency

**PCA** 

Title: BodyVis: A New Approach to Body Learning Through Wearable Sensing and Visualization

1 INTRODUCTION

2 RELATED WORK

3 DESIGN PROCESS AND GOALS

4 ITERATIVE DESIGN OF 3 PROTOTYPES

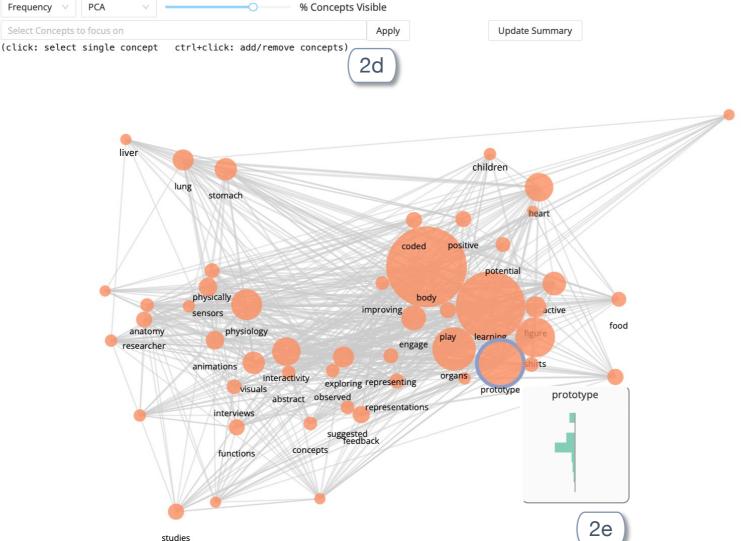
present our three BodyVis prototypes (Figure 2) along with lessons learned throughout the design process. CI Session 1: Initial Ideation. In the initial ideation phase, we conducted a CI session to explore potential design options and gain insight into how children understand their bodies. The CI group used a low-tech prototyping technique, called Bags of Stuff [15], to create interactive t-shirts that represented their anatomy. Our bags consisted of art and textile supplies including markers, yarn, felt, and pom-poms. Children and adult design partners were split into groups and given 40 minutes to design interactive anatomical shirts. Afterward, all groups gathered to share and present their designs to the team. Following the Big Ideas CI approach [15], an adult design partner recorded group ideas on a whiteboard, and discussed surprising and related ideas with the team. Thus, ideas were analyzed and

**5 STUDY 1 TEACHER INTERVIEWS** 

6 STUDY 2 DESIGN DEPLOYMENTS

7 DISCUSSION

8 CONCLUSION



## Summary Editor Done

learning the position, structure, and function of internal body parts is challenging for children.

Paraphrase (>) Save

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Unlike fingers, arms, toes, and other external parts, internal organs remain hidden beneath layers of skin, muscle, and tissue and operate without conscious thought, making it difficult for children to understand (1) the internal workings of their bodies.

In this paper, we present BodyVis, a custom-designed wearable e-textile shirt that combines biometric sensing and interactive visualization to reveal otherwise invisible parts and functions of the human

body (Figure 1 ). 🙋 📋 🕀





The wearer's physiological phenomena are visualized on externalized fabric anatomy, allowing the wearer and viewers to gain a unique view of the internal body.



BodyVis represents a new generation of probeware where the "material" being measured is the human body and the visual representations are responsive,

tangible, wearable models. 🙋 📋 🕀



Our findings show that this wearable tool engages children and that teachers believe it could be an

educational aid. \* 🙋 📋 🕀



