

# Designing Re-materialized Interactive Object Using Makey Makey

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As ICT (Information & Communication Technology) and microcontroller technology have been developed, physical characteristics in products have disappeared gradually because controlling and displaying data becomes main features of products. However, after the concept of Graspable User Interface was introduced, there have been many design experiments for materializing user interfaces inside 2D screens and products. These are very meaningful in terms of designing intuitive and natural interaction methods because a human being lives in the physical world. In order to design re-materialized interactive object, tangible interaction researches from journals, thesis, and articles about the experimental prototypes were collected and categorized with the human-system interaction model. The human-system interaction model is suggested in this paper to describe the relationship amongst a human, interfaces (i.e. mouse, keyboard, screen, tangible user interface), and control and data inside object. The collected cases are organized in three different phases with the human-system interaction model. This paper proposes new model to generate concepts for next generation tangible interactive object design. The Makey Makey was selected as the toolkit for the new experiment and two interactive product design courses were instructed at Yonsei University and Seoul National University of Science & Technology from 2014 to 2015 in Korea. Many interesting outcomes by mapping control and data with humans' everyday behaviors were designed. This paper can contribute to the study on the future of products how objects can be designed in tangible and physical ways.

**Keywords:** Interaction Curriculum, Tangible Interaction, Re-materialization

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