Method Cards for Human Movement-based Interaction Design

Neha Kane, Research Assistant

University of Southern Denmark, Department of Sports Science and Clinical Biomechanics LET´S (Learning and Talent in Sport)

Md. Saifuddin Khalid, Associate Professor

University of Southern Denmark, Department of Sports Science and Clinical Biomechanics LET´S (Learning and Talent in Sport)

Have you ever thought about how you hold your phone when pressing your thumb on the home button to unlock the screen? Probably not. The body of research that deals with such questions include the fields of interaction design and service design. This article is based on the review research paper on Human Movement Based Method Cards which is accepted to be published in European Conference on Game Based Learning 2019. This article gives a brief overview of a type of service design tools – method cards. These tools provide a deck of method cards just like playing cards. The authors of this article are investigating how method cards involving body-based activities can be useful for researchers in the fields of interaction design, design practitioners, and the teachers and students of physical education.

IDEO designers define method cards as "a tool used to showcase methods to inspire design processes and to keep designers and users at the center of the process"(web reference https://www.ideo.com/post/method-cards). They are not only a "how to" guide but they are a design tool meant to explore new approaches and help designers to develop their own design methodologies. Method cards are intended as inspiration for practicing and aspiring designers, as well as those seeking a creative spark in their work. They are used to make several different methods accessible to all members of a design team, to explain how and when the methods are best used, and to demonstrate how they have been applied to real design projects.
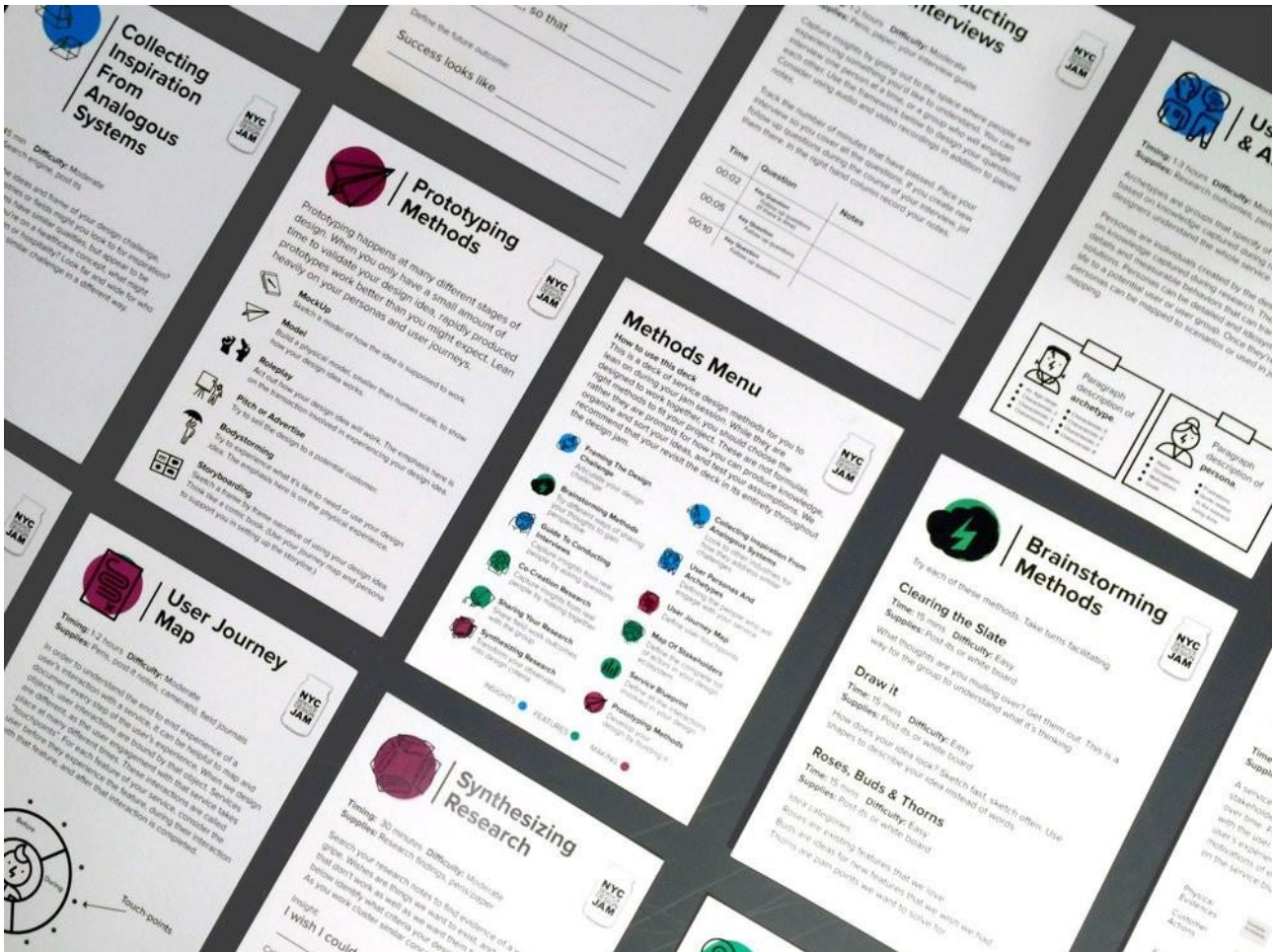
Method cards in Service design tools (https://cargocollective.com/katyarozanova/Design-Thinking-Method-Cards)

Human movement is an innovative way of interaction in the process of product or service design, especially but not limited to digital products. While interacting with a digital device, that is, typing in text, clicking, and touching are the common ways of giving inputs to the systems. Moreover, the methods applied for designing products and services involving physical movement should also have body-based methods so that the concepts are better communicated, developed and tested. Unfortunately, the input mechanisms keeps the users engaged keeping head down and continuously concentrating on the mobile or I-pad or a device screen with the hands busy to interact with it. Furthermore, developing concepts for physical movement and not involving the body as part of the

methods decreases the chance of testing the concepts very early and continuously. So, the "head up" activities like body storming have higher potential to result in a more natural and user friendly interactive system for the domains of play, sports, fitness, and health. With the above-mentioned reasons the authors are drawing attention of design practitioners to give particular attention to the body-based interaction design methods.

There are many card-based toolboxes containing interaction design or service design methods. Many of these cards-based toolboxes are freely available and can be easily deployed in the designing process. Each card has number of steps involved in the method printed on it and it also has "What", "How" and "Why" answers. It means that each card is very much self-explanatory giving information about what the method is all about, why to use the method, and how to apply it with the exact steps.

Some examples of method cards tools are

- IDEO Design kit

(http://www.designkit.org/)

- 18 F US Gov. Digital Service Methods

(https://methods.18f.gov/)

- Design Method Cards (RMIT university) (http://www.designpracticemethods.rmit.edu.au/)
- Media Lab Amsterdam Design Methods toolkit

(http://medialabamsterdam.com/toolkit/)

- Hyper Island Toolbox

(http://toolbox.hyperisland.com/)

- Practical UX Methods

(http://practicaluxmethods.com/)

- UX design Kit

(http://uxdesignkit.com/)

- Social Innovation Lab Kent (SILK)

(https://socialinnovation.typepad.com/silk/silk-method-deck.html)

- Design research techniques

(http://designresearchtechniques.com/)

- Usability Book of Knowledge

(https://www.usabilitybok.org/methods)

According to our recent research article on the topic, at present there are limited method cards which apply body-based activities. Most of the toolboxes contain the bodystorming method, which is an improvised brainstorming method with bodily activities. Bodystorming is deployed in the form of role playing, game-based activities, dance based activities and rigorous body-based activities. The method cards are categorized according to Stanford's D. School's design thinking activities (Empathization, Definition, Ideation, Prototyping and Testing)

Bodystorming as Role Playing: In these types of method cards, existing literature and cards suggest creating situations and the use of props to role play. They say that bodystorming requires physically relocating the team of 4 to 6 to a real-world location where product is likely to be used, immersing the team in the reality of the user experience. It gives the team a keen understanding of use in both ideal and less-than-ideal conditions. Body storming with role playing is used in empathize phase most commonly. Many authors even claim that this type of method can be rigorously deployed an all phases of design thinking.

Game based body storming: Authors of the Hyper Island Toolbox, Project of how, and all about UX use body storming in the form of games. The team of Hyper island tools proposes the bodily games as energizers or ice breakers. The authors say that Learning-by-doing is the process of learning through active reflection on direct experienced. The games help designers to discover, improve teamwork, and to come up with innovative ideas. The designers of Hyper Island tool box have grouped the methods under "energizers" category.

The "Project of How" uses the games-based cards as group dynamics which help improve the team activities. The designers propose "Nippon" game where the participants play the game standing in a circle and shouting and bending knees. This is an energizer game.

All About UX uses the game-based card "Outdoor Play Observation Scheme (OPOS) " to evaluate head-up activities. In this method, outdoor games are played and they are video recorded to evaluate children's activities while playing. This method is used for observing and evaluating the nature of players in outdoor games.

After reading all these game based methods in details, we categorized Hyper Island tool box methods as empathization phase, "Nippon" as empathization and ideate phases and "OPOS" as testing phase. However, some other researchers or practitioners of design thinking may categories them differently as per Stanford D Schools design thinking categories.

Dance based body storming: The "Hyper Island Toolbox" and "Project of How" deploys body storming in the form of dance-based activities. The cards "Dance, Dance, Dance" and "Silly

Dance" are dance based activities under "energizer" and group dynamics categories. In game based body storming it is already mentioned that these activities could be categories under empathize activity of design thinking.

Physical ergonomics: Usability book of Knowledge applies body storming in a different way than all the other cards discussed in our paper. The authors of the method card propose body storming as "physical ergonomics" where they say that "Physical ergonomics is about the human body's responses to physical and physiological work demands repetitive strain injuries from repetition, vibration, force, and posture are the most common types of issues, and thus have design implications. Areas of focus in physical ergonomics include the consequences of repetitive motion, materials handling, workplace safety, comfort in the use of portable devices, keyboard design, working postures, and the work environment. The process of ergonomics involves studying the user and studying the job, and then designing the work environment (or processes and products) to optimize the user's safety, health, comfort, and performance."

Concluding Summary

Khalid and Neha (2019) reviewed the method cards to give the design researchers, educators, and practitioners a nudge by informing how the method cards involve body-based activities. Furthermore, the cards are categorized according to the activities of design thinking process of Stanford D. School. One can either choose to use the existing cards or they can simulate the ideas of the existing cards and create their own cards depending upon purpose, context and scope of design process. It is concluded that there are very few methods and cards which involve human movement-based interaction. It is recommended that dedicated card boxes for human movement-based methods should be developed. The designers, educators, and practitioners in the domains of play, sports, fitness, health, and human-computer interaction are expected to gain from such card boxes for human movement-based interaction design.

Here is the list of links to get information about some of the interaction and service design methods.

1. gamestorming.com
2. servicesdesigntools.org
3. servicedesigncards.com
4. projectofhow.com
5. allaboutux.com
6. designgames.com.au

Please write to Khalid (skhalid@health.sdu.dk) and Neha (neha.kane@gmail.com) for feedback, comments and suggestions.