Influence of Affordance on Tangible Display and Digital Media

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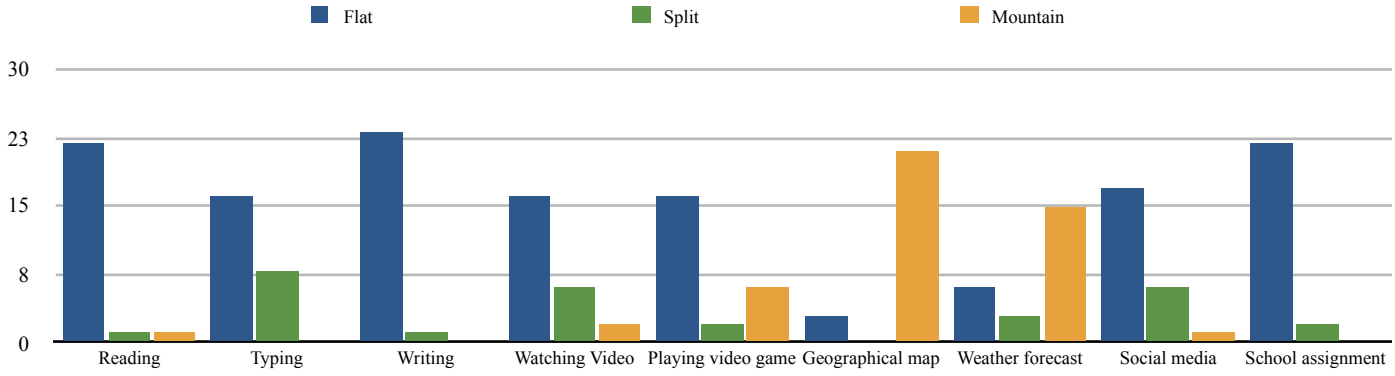

Figure 1. Result of young adult experiment and their choices of display for each task.

Abstract : We propose a method to analyze and identify the impact of display's geometry on its affordance, and how it could be used to create engaging interaction processes .

Keywords : User experience, shaped display

1. Introduction

With increasing ways to access information, the variety and complexity of interface designs has increased. May it be an educational artifact or a large surface with original interactive possibilities, current design approaches and solutions toward interface representation and interaction capacities are ever increasing. Regarding the development of displays and interfaces, we aim with this study at understanding the relations, if there are any, between digital content and interface, and if the shape of the interface can improve or decrease the perception (visibility, understandability, etc.) of its content.

By doing this across different age groups, we hope to see consistency or leading characteristics in interpretation we could integrate in the design and conception of tangible displays and interfaces. We are taking into consideration that the difference in user age corresponds to different levels of cognitive analysis and shape interpretation.

2. Research Method

In order to understand and analyze the difference in perception between children and young adult, we asked participants to match tasks usually achievable on a desktop PC or tablet PC with three displays with three different variations of geometry (Flat, split and mountain geometry), see Fig. 2. This is done in order to understand how the geometry of a display could be more suitable for different tasks. For this experiment we chose to focus on two age groups: children (average of 8 years old) and young adults (average of 25 years old). These groups represent two types of populations supposedly fluent in electronic device usage, but at a different level of involvement and understanding.

3. Results

Result for young adult are visible in Fig. 1, where it is visible that there is an overall preferences to choose the flat display. We argue that display with peculiar geometry could imply a specific kind of interaction possibilities, visible with the matching of the mountain shape display and the tasks centered around geography (Geographical map and Weather forecast). We also received comment indicating that the split display could lend itself to content separated in different categories, if we take social media as an example: Each of the three parts of the display could be used to show precise information, from different groups of friend or with different country of origin.

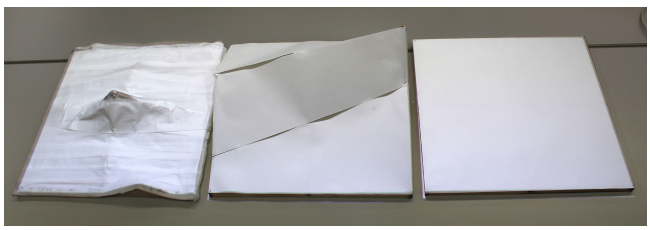

Figure 2. Above are the three display used during the experiment (left to right, mountain, split and flat geometry).