Designing Interaction in Interaction Design: Using Interactionaries in Order to Understand Student Use of Interaction Design Concepts

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Interaction design is about designing interaction. But how do first year students of interaction design understand and use concepts of interaction in their design processes? By interaction analysis of video material we analyse how students used concepts adhering to interaction. The aspect most frequently used was interactivity. Interaction was mainly handled by using spoken language. While working with physical materials, talk about interaction decreased.

Keywords: Interaction design, interactionary, concepts, use of concepts, design

BACKGROUND

Good design of digital tools and applications has become increasingly important, as these have become an integral part of our everyday life, including our work, leisure and education. As compared to other fields of design such as industrial design, interface design and graphic design, interaction design puts its emphasis on the design of the interaction between users and computational artifacts. Such work often includes design of user interfaces as an important element, but as e.g. (Löwgren & Stolterman, 1998) have argued, interaction design is about more than designing a user interface; it's about designing *interaction* between users and the use of artifacts. Interaction design is further often about proposing novel ideas about *future* interaction, i.e. creating representations of the final artifact and its use.

Sketching is an integral part of all design disciplines but how is *future interaction* sketched and how is this taught? A sketch can generally be characterized as a not fully specified drawing often made as a brief preliminary account or outline of a design. But how can a static sketch represent the abstract qualities of *future* and *interaction*? Sketching is useful in many respects but has limited power to represent the essentials of what interaction designers' should focus on, namely interactionitself with its dynamic and temporal aspects. As complementary means, professional designers seem to use other means such as domain specific talk, moving around pointing and gesturing to build their design (Tholander et. al., 2008; Artman & Arvola, 2006). The complex manner in how interaction is planned is not well researched and furthering our understanding regarding these issues has consequences for how to think about and develop support for collaborative design practice as well as for design education.

Therefore, in this paper we report on results from a study investigating how interaction design (IxD) students relate to and handle a number of specific issues regarding *interaction* in interaction design tasks performed during 'interactionaries'. Originally, in an attempt to create a fun way to teach interaction design, Scott Berkun came up with the concept of Interactionary (http://www.scottberkun.com). The goal was to create an alternative way to demonstrate collaborative design technique, and for presenting design concepts in a conference forum. The goal was to expose the dynamic intangibles of design in progress, and allow an audience to listen in on teams and observing how they work. An interactionary is a pseudo game show type format that allows teams to work on the same design problem, live on stage. Each team works one at a time, and is given ten minutes to work through the problem. Berkun and colleagues who organized interactionaries at CHI 2000, picked four categories to be focused on; teamwork, process, final design, and user focus. In our work we built upon this

concept and adapted it to fit an educational setting. Our interest was to understand how first year students addressed and pursued a number of aspects regarding interaction: namely dynamics, temporality, interactivity, sequentiality and context of use.

METHOD

In order to investigate this we set up two design briefs where eight groups of self-selected students participated. The groups were meant to consist of between four to five students. The design groups were provided with several different design resources (whiteboard, clay, paper, plastic paper, paper, scissors, pencils etc.) to use in their design. The students were informed they would do a presentation of their proposal, they were told to focus on making something with the resources (sketching, models etc.), and to have fun. At the start of the design session, they received a document presenting the design brief as well as general design concepts relevant to the brief. They were informed they had five minutes to read, pose questions to the teachers/researchers or discuss within the group. After that they had 25 minutes to both distribute tasks and design their proposal.

The design brief reported on here focused on physical twittering and the task was to elaborate on and to come up with concepts and a design idea that embraced instant messaging with some physicality. Using questionnaires, students were asked to rate their understanding of the concepts before and after the sessions. The design sessions were video recorded from two different angles. Video data has been transcribed and analyzed using interaction analysis (Jordan & Henderson, 1995). The analysis directs particular interest towards how aspects of interaction were handled, shaped, and acted out when designing but also when demonstrating and exemplifying the use of the interactive artifacts designed by the student teams. Moreover, quantitative analyses of how frequently the various aspects were addressed are presented. The students' use of these five core aspects about interaction were independently rated by three trained raters based on an assessment protocol defining the characteristics of each aspect (inter-rater reliability coefficients were 91% (group1) and 96% (group2)).

RESULTS

The aspect most frequently addressed by the students in both groups was interactivity. This was also the concept rated as the most familiar by the majority of the students.

In their design work the students used spoken language, gestures, various physical materials in sketching (clay, white board, paper and pen, etc.) but while addressing interaction they mainly used spoken language. Now and then, the students bring up topics related to interaction. Occasionally interactivity is described in a narrative way in the form of user scenarios.

Notably is also that when students worked with a physical material (such as clay, sketching on paper, etc..) their addressing of aspects and concepts decreased and focus of the physical models and prototypes was largely on appearance and physical features rather than interactivity. Further, the students typically did not draw interaction in sketches on paper nor on the whiteboard. E.g., states and modes are not illustrated visually.

Also noticed is that when the students were directly asked about aspects of interaction during their presentations, more focused discussions about interaction were held. This indicates a need for more feedback and debriefing or interventions during their design work.

REFERENCES

Arvola, M., & Artman, H. (2006). Enactments in Interaction Design: How Designers Make Sketches Behave. *Artifact - Journal of virtual design, 10*.

Berkun, S., http://www.scottberkun.com

Jordan, B., & Henderson, A. (1995). Interaction Analysis: Foundations and Practice. *The Journal of the Learning Sciences, 4*(1), 39-103.

Löwgren, J., & Stolterman, E. (1998). *Design av Informationsteknik : Materialet Utan Egenskaper (In Swedish)*: Studentlitteratur AB (An English version is published as Thoughtful Interaction design. MIT Press).

Tholander, J., Karlgren, K., Ramberg, R., & Sökjer, P. (2008). *Where All the Interaction Is - Sketching in Interaction Design as an Embodied Practice*. Paper presented at the Designing Interactive Systems (DIS2008).