LEt's GO!
Workshop Creativity with Mockups of Locations

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Abstract. Brainstorming and discussions with users about their *situated* needs is difficult with nomadic users as the situation and location setting in the discussion is often lost in traditional workshops in meeting rooms. In many fields, conducting them *in situ* is difficult for both ethical and practical reasons, such as in a hospital. To mitigate this, a combination of methods is often necessary to ensure sufficient detail in the collected data. In this paper we will show the use of *inexpensive children's building blocks* as a tool for creating simple discussion support for brainstorming workshops. We summarize some experiences from a workshop using this combined method.

1 Introduction

Specialized healthcare workers often have nomadic roles [1], where professionals provide work at the bedside or in function specific locales. The use of tools and work practice varies with the locale or setting often focusing on highly specialized tasks. Understanding the overall work process with all its interdependencies may be hard in complex organizations. The complexity in combination with nomadic roles, means that the situation [2] in which the process plays out is also important in defining the context for any work tool or discussion.

There are many ways of creating such realism and fidelity [3] in workshops, from conducting scenarios *in situ* to reconstructing and simulating for realism in laboratory/controlled environments. Choosing an appropriate level of realism and constructing the appropriate fidelity in prototypes and surrounding while at the same time allowing for the necessary time and space compression required is always a challenge in research design.

Thinking aloud and enacting while discussing, or "combination of different techniques that complement one another should preferably be used as their collective application will be more powerful than applied in isolation" [4]. Research using workshops as methodology for data collection in such organizations, be it to capture aspects of usability in current tools or develop new tools for healthcare workers, needs to mitigate the effects of such challenges through adoption of and appropriate use of combinations of methodology.

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The use of "toys" for stimulating workshops are not entirely new, others have examined the use of the same toys for multiple purposes, for example holistic support to HCI requirements elicitation and design [5] and other facilitated workshops methods such as *Lego Serious Play* (LSP) [6, 7]. In this paper we describe an attempt of combining the playful qualities of toys with facilitated brainstorming in groups. While the elements used for construction is the same as in LSP, the purpose, scope and implementation is different. LSP is a method involving a process for team innovation and discussion while *building* mockups of proposed solutions. Although we also aimed to facilitate team innovation and discussion, we included pre-assembled mockups in our design. This might also prove purposeful in more conventional workshops or round-table discussions. Using pre-assembled mockups of the physical location constructed from inexpensive children's building blocks as support for the scenario and contextualization of discussions in a workshop. This is also inspired by other methods such as user-centered design methods [8, 9] combining lo-fi prototyping and role-play to facilitate workshops in a domain similar to ours.

In this article we will describe the case, our approach where we employed our combined methodology, and discuss the lessons learned from using the combined method.

2 Material and Methods

The overall intention of the workshop in our case was to examine the needs and use of a new cooperation tool for a surgical department [10]. Support for surgical workers needs to take into account users that wander between wards, surgical suite, post-operative intensive care and some other locations [11]. Physically surgical work is widely distributed and running 24/7. This makes it difficult to enact scenarios and discuss different situations and requirements in the appropriate locations.

The research project was centered on five central themes: transparency, coordination, awareness, predictability and overview of patient trajectories. One scenario used throughout the workshop involved a patient trajectory with a high degree uncertainty in diagnosis and extensive moving between units. The goal was to explore new technology to create tools within these five themes. The workshop intended to collect feedback on the themes from a healthcare perspective, facilitate new ideas from the users, and identify concrete situations where the tools could provide new solutions.

The workshop was conducted in two operating theatres at a local university hospital with two groups of experts going through the mockup-facilitated section. The first group consisted of 5 healthcare specialists (surgeon, anesthesiologist, surgical nurse and two technicians). The second group had 4 specialists (surgeon, two surgical nurses and one nurse). Both groups were also accompanied by one facilitator and a researcher. In addition there were several observers for sound, video recording, and making notes. While the data collection was primarily done for the purpose of the contents of the workshop itself; we examined the data and conducted an informal retrospective with the facilitators to gather the lessons learned presented in this article.

Fig. 1: The building blocks for our mockups, prior to assembly.

In preparation for the workshop, the authors obtained a large quantity of well-used sets of inexpensive children's bricks (Fig 1). The key locations in our study were identified based on discussions with field experts. We then examined the layout of the departments in question. Especially looking at how the key locations were located in relation to each other. With a set of locations and their relations in mind, we then constructed low-fidelity simple, yet identifiable, mockups of the locations from the building blocks (cf. Fig 2) along with some simple props to represent hallways and features such as stairs and elevators. We also included details such as free-standing corners and walls to represent lack of physical transparency between the departments. Personnel and specific roles were represented by tiny figures, some carrying equipment to indicate their roles.

Incorporating key features of the locations made them realistic enough so that the healthcare professionals would recognize what each mockup were to represent (cf. operating theatre in Fig 2). In total, we used approximately two person-days for the design and construction. The mockups were arranged on a whiteboard in order for participants to be able to make annotate or draw arrows indicating patient flow or other details right on the layout using whiteboard markers.

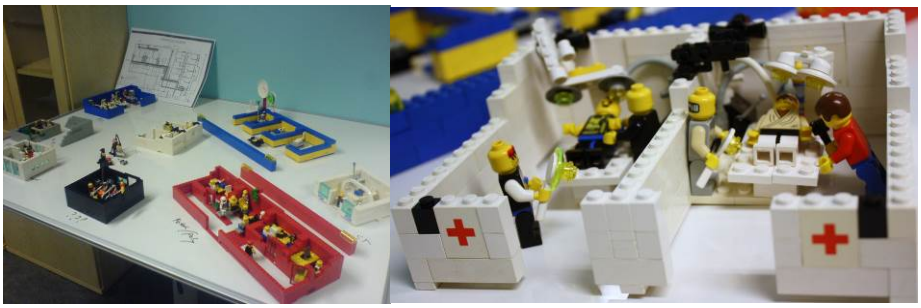

Fig. 2: The finished mockups and the original layout that were represented on a whiteboard with some notes (left) and our surgical suite (right).

3 Results and Discussion

Mockups provide visual cues easing discussion of the participants compared to unaided techniques such as focus group interviews where participants have to solely rely on their memory. Being able to physically point to locations in the mockups during discussions helped the participants in framing their discussions. This way a joint understanding between the participants was quickly established and helped avoid misunderstandings.

Alongside the discussion, the almost universal familiarity these types of bricks, invited the participants to modify and interact with the mockups. They moved the tiny figures and equipment around as necessary when playing out the scenarios (without prompting). It also seemed that the mockups' properties of also being toys promoted playing and hence lowering the bar for enacting.

The workshop participants immediately found the mockups humoring – akin to a *caricature* of the real-world. This worked out as a nice icebreaker in the workshop setting and created a friendly and atmosphere. The participants quickly started acting out the intended scenarios replicating the actual work setting, without the need of any training.

The mockups have a clear strength in that they are low-cost, easy to assemble, reusable and easy to transport. In out case we ran our workshop in the operation theatre of the hospital to increase the realism. We pre-assembled the mockups and brought them to the hospital an arranged them on a horizontal whiteboard. The setup time was negligible. Pre-assembling the mockups sets our method apart from some of the existing facilitated methods by removing the time spent on having the participants assembling during the workshop. In our experience this is more efficient and leaves more room for discussion and reflection rather than construction.

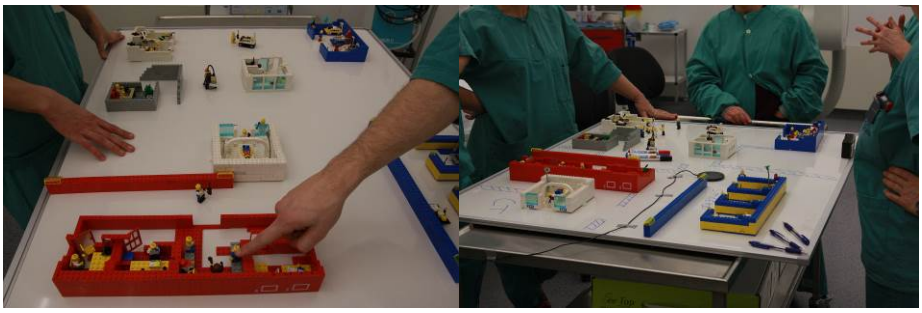

Fig. 3: Pictures from the workshop with the participants discussing using the mockups.

Some of the themes and scenarios raised in the workshop were difficult to enact in a single location. Many relied on interaction and cooperation between multiple actors that were not collocated. The complexity in the situations for the workshop were also significant in terms of the number of actors involved with different roles and differing needs and requirements. The mockups proved very useful in playing out phases of a patient trajectory and interdependencies between different actors. Roles not directly represented by the participants in the workshop were carried by one or more of the tiny figures. The mockups helped visualize and represent the distance between various locations, making the cost of physically moving between the locations rather than using communication tangible in the discussions.

Mockups just as other visual aids, makes it challenging to document the discussion in full. Audio recordings are often difficult to interpret when the participants rely on visual aids for their arguments, and points or acts out scenarios without thinking aloud. Even under stricter "thinking aloud"-protocols, some of the context of the discussion is quickly lost in audio-only recordings.

In our case, we opted to record the whole workshop on video, but it was still challenging to capture the details of the interaction without having multiple cameras covering different angles. Depending on the method of analysis, the documentation and preparation for recordings needs to be well prepared and tested to ensure that the details of both the interaction and modification of mockups are captured in sufficient detail.

Using *inexpensive children's building blocks* as a tool for facilitating workshops, in our experience enhanced the discussion and stimulated the participants positively. Using children's toys for the mockups rendered them "harmless", encouraging playfulness and promoted scenario enactment by the participants.

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