

Role Playing a Design Game on Participatory Urban Planning for System Evaluation

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ABSTRACT

To assess a system supporting participatory urban planning, we adapted a design game and transformed it into a role play game.

Keywords

Design game, role play, participatory urban planning

1. INTRODUCTION

The title of this paper needs to be read slowly, unraveling the relations between its elements which corresponds to my (indirect) experience with design games. As a short summary, I have adapted a design game from urban planning, transferred it into a role play and used this role play in order to assess a system supporting similar urban planning situations.



Design games with a “language of pieces” developed by urban design students and staff in Boulder

When planning empirical studies of actual group usage of tangible user interfaces for my PhD I found few systems fit for use within interesting application areas. The *Envisionment and Discovery Collaboratory (EDC)* from the Center for Lifelong Learning and Design (L3D), University of Colorado, seemed an ideal candidate with rich and easy to grasp application areas, the institute interdisciplinary and open to young guest researchers. Underlying aim of the EDC is system support for participatory urban planning. L3D member and professor of urban design Ernesto Arias works with physical design respectively simulation games for decades [1] to empower citizens in the framing and resolution of complex planning problems. L3D researchers wanted to augment these games digitally, building upon the notion of ‘physical language of pieces’ and game-like interaction [2]. Individuals using the EDC convene around a computationally enhanced table which augments physical game pieces with the dynamic capabilities of computational simulation. Participants create and manipulate the computational simulation projected onto the surface by interacting with physical objects.

During my research visit two L3D members and me planned, prepared and run a comparative assessment of two EDC versions, utilizing role play to simulate potential use situations (for results see [3]). Several reasons prohibited field testing the system. It was not ready yet for real situations (functionality, usability, stability). Besides, there was no salient problem in the community at this point of time. With a role play we could assess the system in a group situation and find out about functional and usability requirements while provoking some of the emotions, differences in perspectives and ill-structuredness of real situations (role play is a common method in group behavior and facilitation training).

2. SCENARIO AND DESIGN GAME

As one recently developed system version at this point only provided rudimentary functionality, we decided upon a subset of an existing scenario on transportation planning and fleshed it out with quickly implemented additional functionality. Overall goal was a common scenario adapted to the capabilities of the two systems. We had to shift repeatedly between adjusting the scenario and extending the simulation software of both variants in order to develop an identical, but rich scenario for both variants.

The scenario entails the transportation department asking neighborhood inhabitants to come together and develop a proposal for improvement of the bus route serving their area. The route may be expanded or changed (exploiting five minutes slack) and bus stops newly located. The session was organized in several phases according to Arias’ “physical language of pieces” [2], which automatically structures design process into descriptive, evaluative and generative (solution creating) stages. A detailed set of roles was developed, encompassing different population groups and needs. Subjects could choose a role that they felt comfortable with. The successive phases began with introducing the system and letting participants experiment with using it, getting acquainted with the map, filling out a survey about ones role and introducing it to each other. Then participants could freely discuss current problems (which resulted in initial ideas on improvement). Then people demonstrated how far they would be willing to walk under different weather conditions. The last phase had the group decide about the route and bus stops. The system supports discussion by showing the map, highlighting “walking distances circles” and highlighting circle intersection, creating objects, simulating busses and computing bus route time.

In the role play we took the roles of process and technical facilitator, moderating the discussion, explaining the problem and phasing the session respectively explaining system functionality, demonstrating interaction, loading new features and providing workarounds in case of technical problems.

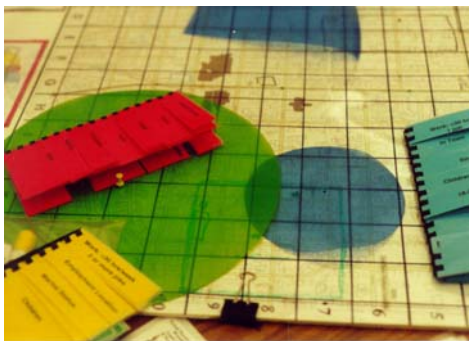
YOUR ROLE: Your name is Lynn.

You are 33 years old and a single parent. Ben is 3 years old and will hopefully go to kindergarten in some time. A neighbor takes care of your son while you are working, she has children the same age. Sometimes your Mom comes to take care of him. You work half days downtown, usually in the mornings. Then you hurry to be back on time for lunch. You do not own a car. The bus route is not really close to your place. Especially when you have been to the groceries and carry bags, or with Ben, it feels far and you'd wish it was closer.

On this map there is an X on the spot where you live.



This scenario was based on a simulation game, developed as student project in “Research Issues and Methods in Environmental Planning” at the College of Environmental Design in Boulder in 1997. In this original game, “real” players out of a neighborhood are invited. Participants are supposed to improve their understanding of the relationship between actual distance and time for walking. The game ends after gathering information about distances people are willing to walk and the conditions which affect this willingness. This scenario had already been expanded for the EDC to include bus route drawing. We changed some more details and took account of the problems the project reported (e.g. not taking a downtown area, as people living down



Original physical bus route game by students, with colored transparent walking circles and personal description leaflets

town have the option to drive bikes or walk), translating phases and actions to the computer-supported environment and including additional features made possible by computer support.

3. LEARNINGS FROM ROLE PLAY

In reflection of the different group processes we had experienced during assessment, we learned not only about the system, but also about the use of role play as an assessment method [4]. Our scenario did not inherently lead to conflict. Thus the role cards were changed to include personas with conflicting desires in order to require more trade-offs and **AUSHANDLUNG**. The group constellation affected the role play as well. As finding subjects for the assessment was difficult, one of the groups consisted mainly of undergraduate students from social sciences. These seemed to be much more concerned with producing “correct” solutions than the older subjects and to feel inhibited in the unfamiliar environment of the L3D-lab. Our style of facilitation heavily influenced participant behavior by serving as a role model, and often was copied instantly. Privileged access of facilitators to the system highlighted roles and responsibilities and disabled participants from taking over system control. In effect this hindered the appropriation of physical and system space. Facilitation of design games needs to be trained and must be seen as integral part of designing the game itself and its features. Despite of these problems the role play was efficient in uncovering design problems of the assessed systems and finding out about required functionality for the application area or usability improvements.

4. ACKNOWLEDGMENTS

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5. REFERENCES

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