

Working with CoCe

Designing for Collaborative Games



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Summary & Learning goals

The students are introduced to using a design space as a generative tool for design of collaborative games.

Learning goals:

- Recognize a few gameplay design patterns that are relevant for the design of collaborative games
- Analyze how a framework in the form of a design space can be useful for design of a collaborative game
- Reflect on how gameplay design patterns can influence design of collaborative games

Recommended readings

- Eriksson, E., Baykal, G. E., Torgersson, O., & Bjork, S. (2021). The CoCe Design Space: Exploring the Design Space for Co-Located Collaborative Games that Use Multi-Display Composition. In Designing Interactive Systems Conference 2021 (pp. 718–733): Association for Computing Machinery.

Exercise

- Have a look at the CoCe design space and select at least one gameplay design pattern from each of the four perspectives
 - This can be done randomly or by picking patterns that seem promising
- Check the descriptions of the patterns at <http://gameplaydesignpatterns.org>
- Invent a concept for a co-located collaborative game that makes use of the select patterns
- Check the CoCe framework to see if there are any more patterns that are relevant for your design and list these

Delivarable

- Prepare a few slides where you
- List the selected properties and values for your concept
- Give a brief presentation of your concept. Using one or more sketches can be a good idea.
- Describe how the selected gameplay design patterns affected your design concept
- Good luck!

Designing for Co-located Collaborative Games

- Presented the concept collaborative game
- Presented the concept gameplay design pattern
- Look at how patterns can be used to form a design space for collaborative games

The CoCe Design Space

Exploring the Design Space for Co-Located Collaborative Games that Use Multi-Display Composition

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ABSTRACT

In this paper, we map out the CoCe design space - a design space for co-located collaborative games that use multi-display composition. The design space grew out of the analysis of game instances based on the 4in1 concept. First, we did a horizontal analysis of 16 game instances with 31 corresponding gameplay design patterns (GDP), followed by a vertical analysis of 89 GDPs occurring in the description of the GDP COOPERATION. Through inductive analysis, we have identified four perspectives with corresponding dimensions that span the CoCe design space. By applying the CoCe design space with game instances, we illustrate how it can be used both as an analytic tool for analysis of games and also as a generative tool in the design or re-design of cooperative games that use multi-display composition.

CCS CONCEPTS

• Human-centered computing → HCI theory, concepts and models.

KEYWORDS

Collaboration; game design; design space; intermediate-level knowledge, gameplay design patterns.

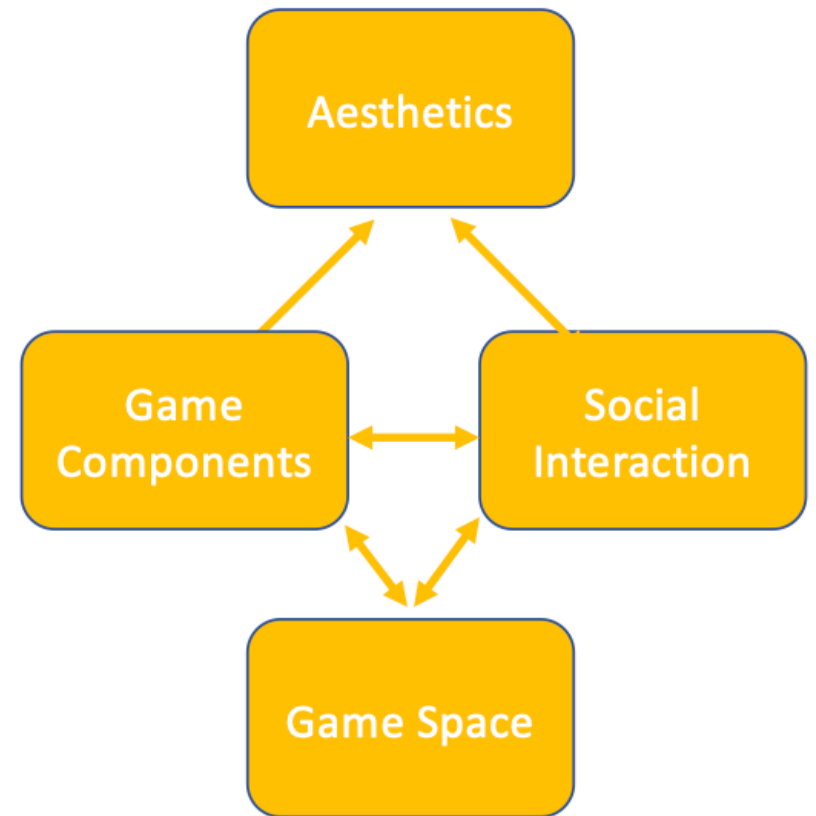
1 INTRODUCTION

The introduction of touch technology has revolutionized the way we interact with computers, and devices like tablets are gaining increasing popularity in many educational settings. However, the vast majority of applications developed for tablets are targeting one user using the device alone, and tablets are "typically perceived as a personal device, evoking the image of its owner tapping away - silently submerged in their private digital bubble" [40, p. 1405]. One way to break this 'mobile bubble' and use touch technology to support groups of people acting together in a collaborative manner on a common activity could be to instead design for, and make use of, large shared screen displays and tabletop computers. A problem with this approach is that tabletop computers are still rather expensive and cannot easily be moved or carried around. Rather the users need to gather in the place where the tabletop happens to be located. As an alternative, we argue that tablets could also be used to create engaging collaborative user experiences instead of being devices used to lock each individual user into his or hers mobile bubble.



The CoCe Design Space

- Four perspectives of collaborative games where each perspective has several dimensions
- A design space spanned by gameplay design patterns
- A tool for analysis and design



CoCe Design Space Overview

Perspective
Dimensions
Gameplay design
Patterns (examples)

GAME SPACE		
Set-up	Mechanics	
MULTI-PLAYER GAMES SPLIT SCREEN VIEWS	SYMMETRIC GAMEPLAY ASSYMETRIC GAMEPLAY	
SOCIAL INTERACTION		
Roles & Skills	Actions	Goals & Planning
TEAMS SOCIAL SKILLS AVATARS ABILITIES	COLLABORATIVE ACTIONS SYMBIOTIC PLAYER RELATIONS ALTRUISTIC ACTIONS	MUTUAL GOALS ASYMMETRIC GOALS TACTICAL PLANNING STIMULATED PLANNING
GAME COMPONENTS		
Roles & Skills	Actions	Goals & Planning
NEW ABILITIES HANDLES COMPETENCE AREAS	GAME ITEMS FOCUS LOCI MOVEMENT	LEVELS RESOURCES SHARED REWARDS
AESTHETICS		
Game space	Social Interaction	Game Components
TENSION COMPLEX GAMEPLAY	COMPLMENTARITY REFLECTIVE COMMUNICATION	GAMEPLAY MASTERY

The Game Components Perspective

- 3 dimensions
 - Roles & Skills
 - Actions
 - Goals & Planning
- 28 patterns

GAME COMPONENTS		
Roles & Skills	Actions	Goals & Planning
HANDLES NEW ABILITIES IMPROVED ABILITIES COMPETENCE AREAS TEAM COMBOS	GAME ITEMS FOCUS LOCI MOVEMENT MANEUVERING OBSTACLES - MOVED CAPTURE DEXTERITY BASED ACTIONS AREA CONTROL CONTROLLERS	LEVELS RESOURCES SHARED RESOURCES SHARED REWARDS TRANSFERABLE ITEMS LANDMARKS GEOSPATIAL GAME WIDGETS FREE GIFT INVENTORIES ENEMIES NON-PLAYER CHARACTERS AGENTS GAME SYSTEM PLAYER ALGORITHMIC AGENTS INTERNAL CONFLICTS

The Social Interaction Perspective

- 3 dimensions
 - Roles & Skills
 - Actions
 - Goals & Planning
- 24 patterns

SOCIAL INTERACTION		
Roles & Skills	Actions	Goals & Planning
TEAMS FUNCTIONAL ROLES AVATARS SOCIAL SKILLS SYNERGIES BETWEEN ABILITIES PARTIES SOCIAL ROLES ROLEPLAYING CHARACTERS PRIVILEGED ABILITIES ENTITLED PLAYERS COMPANIONS ABILITIES	COLLABORATIVE ACTIONS ASYNCHRONOUS COLLABORATIVE ACTIONS SYMBIOTIC PLAYER RELATIONS ALTRUSTIC ACTIONS	MUTUAL GOALS CONTINUOUS GOALS SUPPORTING GOALS ASYMMETRIC GOALS STIMULATED PLANNING PREVENTING GOALS TACTICAL PLANNING

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