LEARNING PLAYFULL LEARNING THROUGH XR

INTEGRATING XR INTO REMOTE WORK

Assignment by Rasmus Broe
Copenhagen, Denmark
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Module 6: Integrating XR into Remote Work

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CONTEXT AND NEED FOR INNOVATION

At the Center for Educational Items, we are committed to enhancing the educational landscape through innovative learning methodologies.

Our ongoing project, "Playful Learning," funded by LEGO, is dedicated to integrating playful learning activities within the Danish school system. As part of this initiative, our team is responsible for educating teachers on implementing these concepts effectively in their classrooms.

However, we have encountered significant challenges in conveying the theoretical aspects of playful learning to teachers in a manner that is both engaging and contextually meaningful.
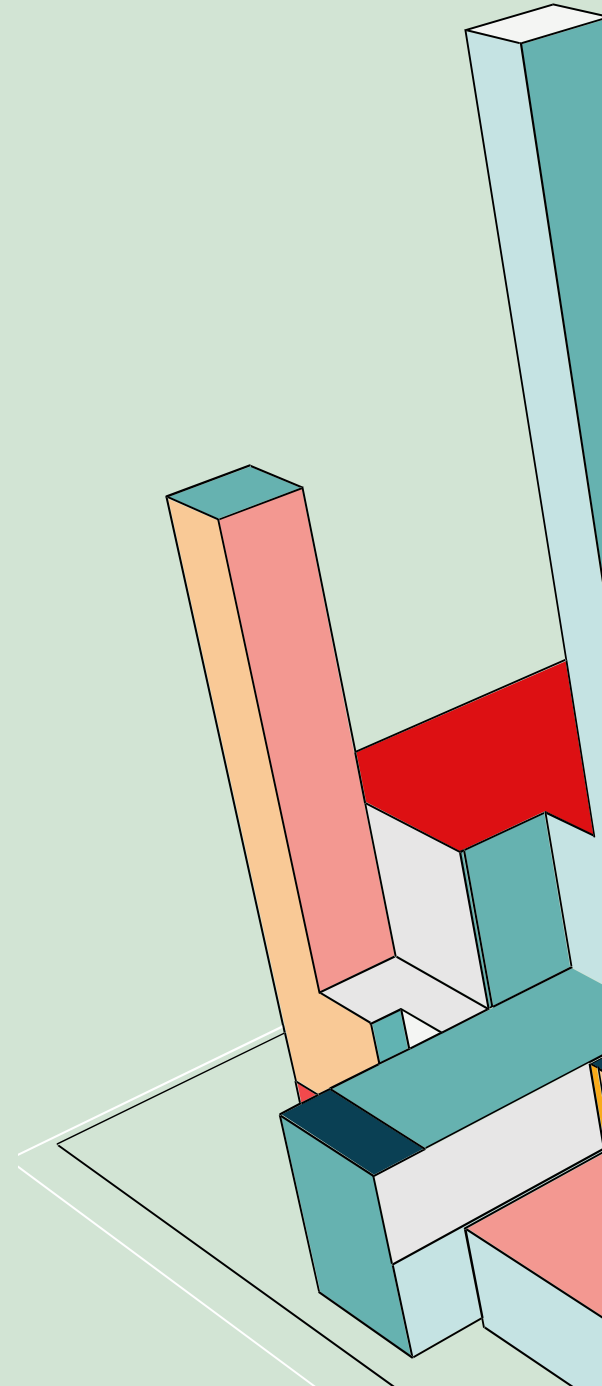
CURRENT CHALLENGES:

A significant challenge we face is in transforming abstract playful learning theories into vivid, actionable examples that truly resonate with teachers, particularly within the constraints of virtual meetings.

While digital seminars and remote workshops have enabled us to connect with educators nationwide, these formats often lack the hands-on, interactive elements essential for fully conveying the dynamic nature of playful learning. This limitation in our current approach not only reduces the effectiveness of our teaching methods but also impacts our ability to fully engage and inspire teachers.

However, this scenario also presents an opportunity. The process of adapting these educational theories for virtual engagement itself fosters creativity and innovation, making the learning process both playful and enjoyable. This approach not only enhances the teachers' experience but also boosts their willingness to embrace these innovative strategies, crucial for the success of the "Playful Learning" project.

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PROPOSED SOLUTION:

To better support our nationwide network of teachers and overcome the barriers of traditional educational methods, we propose the creation of a digital virtual environment using XR technologies.

This would consist of several 3D interactive rooms within a virtual platform, each designed to demonstrate different aspects of playful learning in an immersive way.

Teachers from across the country can access this virtual environment, allowing them to experience and interact with the content directly, irrespective of their physical location.

DESIGN FEATURE 1. MAIN ROOM

Design Feature	CSCW Principle	Advantages	Tradeoffs
The main room will have an icebreaker activity for all users and instructors together. Here they will adapt to the virtual environment and feel more comfortable with each others avatars.	Without shared meanings or histories, information will lose context as it crosses boundaries.	The assignments are supposed to be fun and playful, and can only be solved by involving all team members.	Interactivity is much harder to accomplish virtually than in a common physical space.

DESIGN FEATURE 2. TAILORED ROOMS

Design Feature	CSCW Principle	Advantages	Tradeoffs
The virtual environment will include a mix of mandatory and elective topic-based rooms. Teachers will have the flexibility to choose rooms that align with the specific subjects they teach, allowing them to explore playful learning activities tailored to their areas of expertise, while other rooms will be essential for all participants.	Members of organizations sometimes have differing (and multiple) goals.	Users will have an experience that they can feel is especially suited for their needs, and the virtual space gives the advantage of always having enough space and unoccupied rooms as opposed to the physical world.	Playful learning is better with a lot of peers.

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DESIGN FEATURE 3. INCENVTIVES

Design Feature	CSCW Principle	Advantages	Tradeoffs
Some of the experiences that the instructors present to the users, must be made so that they can be transferred directly into the users own workflow the following day.	Incentives are critical	It´s often very motivating for our users to be able to transfer from course to "action" immediately.	The "ready for use" experiences are often not the ones that holds the most long term didactical outcome.

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DESIGN FEATURE 4. VISIBILITY

Design Feature	CSCW Principle	Advantages	Tradeoffs
The principles behind the Playful Learning concept are on the virtual wall. The users can see each others avatars in game, and they can see some body expression (arms) when talking to each other.	The visibility of communication exchanges and information enables learning and greater efficiencies.	Playful Learning principles are accessible at all times. Experiences that require a users specific physical position in the room are possible.	Written communication like chat-history is not possible in this version.

DESIGN FEATURE 5. CUSTOMIZED AVATARS

Design Feature	CSCW Principle	Advantages	Tradeoffs
Avatars (Icons- or Cartoon-like) represents the users. These avatars are quick two-minutes designs, that also carries a T-shirt representing the users team.	People prefer to know who else is present in a shared space	Avatars are easily made, and give the users a feeling of both virtual self identity, and team identity.	Users will not be able to see each others facial expressions when cooperating.

COSTS AND TECHNOLOGY

1: Technology Requirements:

Software: For a testing phase, utilizing existing virtual environments like Rec Room or VR Chat, which are free to access but may have costs associated with premium features or specific customizations. Later iterations might reveal a need for our own customized project platform.

Hardware: Oculus Quest and Pico VR headsets. These are standalone VR devices known for their portability and ease of use, suitable for educational settings.

2. Costs:

VR Headsets: As of the latest pricing, Oculus Quest 2 units cost approximately $400 each, and Pico headsets are somewhat lower priced.