Playing with the elasticity of hybrid design education

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Abstract. This article explores the shift in design education from traditional, hands-on practices to digitally-based approaches, particularly accelerated by the sudden and temporary remote teaching mandates that affected design schools during the global pandemic restrictions of the early 2020's. It uses a case involving an interaction design class during such restrictions, where students engaged in, designed, and facilitated 15-minute remote collaborative activities called "Fire-up" sessions, to demonstrate how a short design doing task can provide surface what is at stake in the design of hybrid learning activities. Reflections of the students and teachers are used to take the pulse of remote and hybrid teaching arrangements that are physicality and materiality inherent in design education, emphasizing the perceived elasticity of physical and digital arrangements in these contexts. The paper offers three main *sensitizing instruments* to consider when arranging and engaging in hybrid design work.

1 Introduction

Design education has long embraced a material and experiential tradition of doing design. Studio-based education, project-based learning with hands-on traditions of sketching [1, 2] and prototyping, whether the clay workshop or enacting experience prototypes [3, 4] the physical space, materials, and actions of the full body of the designer have been common practice. Yet these traditions have increasingly given way to software-based designing with computer screen, keyboard and mouse/touchpad interactions, where the topic under design does not necessarily influence the materiality and physical movements of the designer. The screen, keyboard and mouse combination affords a relatively stable set of physical interactions for teaching and learning activities. The extent of design education's drift into a software- and computer-mediated practice, dictated by the hardware and software of digital devices, became obvious during the COVID19 pandemic. The rapid shift to distributed teaching

arrangements meant that even working with basic materials, such as Post-it notes placed on a wall, was no longer relevant to people who were not in close physical proximity. The emerging use of software spaces, such as Miro boards, allowed for the collaborative interactions of writing and placing Post-it notes on a shared digital "wall" to take place in a similar physical set-up as any other software-based interaction on a computer. The reliance upon video-based software such as Zoom and Microsoft Teams re-oriented how students and teachers look at each other and themselves while in collaboration, generally providing a frontal view of one's upper body and face. There is a general feeling that the move to organizing remote and hybrid forms of design education has increased the reliance upon verbal and text-based forms of doing and learning, in contrast to physically active sociomaterial practices that rely more greatly on the full body, the constraints of physical space and materials. Hybrid is here defined by practices that simultaneously include elements of physical, co-located activity and remote or distributed online engagement. These practices can be facilitated using technologies such as tablets and smartphones, AR and VR headsets, tangible interactive objects, and responsive architectures, but also by software running on regular computers, such as video- or collaborative online design tools. In order to introduce interaction design students to a project focusing on designing the future home office and working remotely, we sought an experiential learning design task to allow students to learn both what it can be like to contribute to hybrid work practice, but also to sensitize them to what it can feel like to have others intervene in one's hybrid practices.

In this article, we would like to introduce how we were able to opportunistically use a small collaborative class activity and design task during the extraordinary remote and hybrid teaching and learning circumstances during the COVID19 pandemic as a natural laboratory for exploring the boundaries of hybrid design education interaction.

While we are not in the position to make strong claims about what is lost and afforded with distributed design education in contrast to co-located activities, we are able to demonstrate how the types of interactional issues that are "in play" when we traverse sociomaterial arrangements within hybrid design education situations can reveal themselves through design doing and reflection.

We frame design education as manifesting in the encounter between the design educator(s) and design students. You can say, the educator/student encounter in the university setting is constrained by the long tradition of organized education, the various communities of practices *at play* within any one disciplinary environment, including their *local practices,* and the situated circumstances of specific educators with specific students at a specific time in a specific set-up. The physical university classroom is still – or again after the pandemic – the dominant mode of delivering education, with students who have chosen the location and program they wish to follow and showing up to the physical school from day 1 of their education.

In design education, where experiential learning is fundamental, the image of the design studio as a physical space supporting the apprentice model of learning has long been celebrated, such as through Schön's [1]examples of Kvist, the design tutor guiding Petra, the student, in her iterative design process of sketching, making a *design move* and getting *backtalk* from the *situation*, a process of exploration between reflection-in-

action and reflection-on-action. Engaging with material, whether working in the clay workshop, creating mocked-up spaces for collaborative explorations, interaction labs for building and enacting prototypes, often plays a big role in design education, as well as in design practice. In a Deweyan sense [5] , design as a practical and pragmatic enterprise has embraced movements between the formalized and regulated teacher-mediated classroom or lab environment and tasks that take students into situations of interaction "in the wild" of everyday *use* of products and services. In codesign traditions, the notion of the design lab is used to define the greater design space, for instance as platform for collaboration [6], including various stakeholders in co-design explorations of complex challenges, the "wicked problems" [7] of today and tomorrow. These types of out of classroom activities may be regulated by educators through the crafting of assignments, possibly preparing the sites or partners for teaching, and the educators' oversight before and after the task, predominantly from the student point of view during teaching and tutoring time.

At the same time, the studio and classroom spaces are no longer as analogue as they used to be, with the influx of digital technologies blurring the lines between remote and co-located activities. Jahnke [8] has formulated CrossActionSpaces as the simultaneous interactions in person in a shared physical education space, while also connecting to other spaces through various devices.

"A person is in a physical place but at the same time in two or several other online spaces; she reads information, she contributes actively in discussion boards, she shares photos about presentation slides, she searches for solutions on how to build a product, for example, a solar energy item at home. And other people do this too." [8, p. 3].

In this sense, in design education, the notion of the physical space has expanded beyond single locations both inside the classroom and outside. It is within these changing conditions of design education that we find ourselves as design educators and that we can view as the natural laboratory of the teaching and learning environment.

At the same time, teaching and learning through the COVID19 pandemic propelled students and teachers to grapple with a transition from a certain type of physical and digital environment that is the learning environment (for students and potentially teachers) and work environment (for teachers), into a less known set of arrangements, often sitting at home or in small groups, connecting via text, audio, and video software. The abrupt change confronted each of us with the limitations as well as the *elasticity* of these spaces – how much they can be reshaped – and what can be viewed as at stake in the renegotiation of activity spaces, in the educator-student encounter. This forced shake-up of daily routines happened in parallel in many education- and work contexts the world round, and even in relation to other aspects of our lives, from medical visits, to entertainment and social gatherings. The forced change in teaching and learning first came in the form of restrictions in using university spaces as a state level mandate to the local department level, introducing the normalization of holding classes via Zoom, the then new video software.

In education in general, this period has been framed as "Emergency Remote Teaching" (ERT) [9] in contrast to both classroom teaching and "Effective Online Education" [10]. If it had not been apparent previously, teachers increasingly became or recognized themselves as *instructional designers* [11] for not merely the tasks and the social dynamics of learning opportunities, but for attending to the physical and digital environments that made up the educational encounter, attempting to figure what could or would not support teaching and learning.

It is striking how the crisis situation triggered teachers and students to be both "forced to", and "allowed to", explore different types of collaborative arrangements in a rather precarious way. People were experiencing these types of situations, with new products and services being introduced ad hoc or tweaked to support the situations, interactions the world round. This disruption, and the subsequent transitions between different modes of engagement, confronted educators and learners with their taken-for-granted norms that define the potential of the education encounter, including the great inequalities that are built into our technological formats [12]. As we see from the emerging literature since the start of the pandemic, the ERT norm was to attempt to mimic face-to-face activities in the remote format, whereas over time, new formats were developed for attending to the learning goals of courses [13]. For instance, Toney et al. attribute students' "Zoom fatigue" to the inappropriateness of using conference software formats for activities that were meant for the classroom.

It was against this backdrop that we have sought to explore new formats of education that could, at best, inform, and at least mimic, the way design is organized *in practice*. On the other hand, pedagogical strategies and instructional models specifically tailored for online design education are well explored research topics. This includes investigating the use of online tools to support project-based and collaborative learning activities [14]. A related issue concerns the building of a sense of community and fostering social presence in online design courses, which is crucial for collaborative learning and peer interaction [15]. Others have explored strategies to promote social presence, such as the use of discussion forums [16], online design critiques [17], virtual design studios [18], and synchronous online sessions that facilitate real-time interaction and communication. However, here we are less interested in situating our results in relation to contemporary literature, than in introducing a format for design doing that activates the issues at play in this form of designing for hybrid experiences.

Below, we draw on a case of an experiential learning project in which students and teachers participated in short motivational activities for participants over Zoom. Students subsequently designed and facilitated their own versions of such sessions. These design activities sought to address the need for social interaction during the unusual circumstances of working at a distance in an extreme form of isolation. Additionally, it was the students' first attempt to create a contribution to distributed work, their main project during the course. We will use the case to unpack a few of the issues at stake when design educators/education moves (is forced to move) between different socio-material constellations. This is potentially relevant to design work in general. The paper offers three main *sensitizing instruments* to consider when arranging

and engaging in hybrid design work. Before introducing the case, we would like to highlight a few aspects of the education encounter.

1.1 Assumptions

We subscribe to experiential and situated learning principles that *"learning cannot be designed, it can be designed for"* [11, p. 2] implicating both students and teachers in co-creating learning in the education encounter. From an instructional design perspective, Goodyear and Dimitriadis [11] see the design of learning involving designing the tasks, and designing the social and physical architectures for learning. They frame the "learning environment" or "learn place" as the location that learning takes place, "learn time" as when it takes place, and view learning as "physically situated", meaning that learning is influenced by everything that is readily available "at hand" in the learn place.

From their perspective, instructional design has to do with creating the conditions for learning to take place during specific learn time activities. In the case of hybrid learning environments, the totality of the physical learning environment moves beyond the university-controlled spaces into the realms of everyday life spaces. In some respects, this extension of the space has already been taking place in design education through the situated tasks of exploring use contexts and collaborative design activities, only that these unknowns are less blatantly exposed to educators.

2 Case: Creating remote *fire-up* sessions

At the start of the Autumn 2020 semester, approximately 6 months into the COVID19 pandemic, 12 students from different countries moved to our European city to start the first year of a 2-year master's program in interaction design. The students hailed from and traveled through different country-specific COVID19 regulations, movement and interaction (such as the need for Covid tests, use of masks, etc.), arriving at a university department under conditions of uncertainty and regular changes to how the school premises were allowed to be used by students and teachers. Six weeks into their education, at the beginning of a 10-week course, there was a limited-use model in place within the design department. As a way of mediating the isolation the students could be experiencing, the students were encouraged by the school leadership to develop "buddy groups", a group with limited number of students to spend time with when at school and away from school premises, while they were also encouraged to avoid interactions with others. The 10-week courses in the program generally have three phases, a foundations period of learning about a specific type of design and the methods for doing so, a project period of design doing, and a sense-making period for reflecting upon and writing about the specific type of design experience. In this case, the course focused on designing for specialized practice and the project was focused on the timely topic of remote work practice in the future home office. However, our case is not looking at the whole project, but instead focuses on a type of warm-up design activity

prior to the project start that called a "Fire-up" activity. From a pedagogic perspective, the introduction of a warm-up activity sought to give the students an opportunity to make their first low-level contributions to distributed work practices through an innocuous design task only for the audience of the class, the teachers and the guest teacher.

In studying the apprenticeship model of learning to be a tailor in Liberia, Jean Lave makes a distinction between the "practice" and the "way in" to a practice. *"Way-in is a nickname for whatever it takes to get from a state of high ignorance about how to do something to a state in which one can make a first approximation to it."* [19, 184]. In this sense, as a way of breaking the linear process of user-centered design project, we ask how we can we provide the students a "way in" to their collaborative practice at the earliest stage of a project and how to provide students an opportunity to develop their first approximation of the whole, of contributing to the future home office. The introduction to the Fire-up format and the students' subsequent designing of their own fire-up sessions took place over the first three weeks of the 10-week course. Students and the two teachers were first invited to experience this specific type of remote activity facilitated by the creator of the format, then given a lecture of his work prior to the pandemic and the development of the Fire-up format during the pandemic, with a focus on the needs this type of work responds to. This was followed by a seminar in which the guest teacher guided the three groups of students through an initial process of designing their own 15-minute Fire-up session. After continuing their design task in teamwork, each group received an iteration of tutoring and ultimately held their own 15-minute Fire-up session for the whole class.
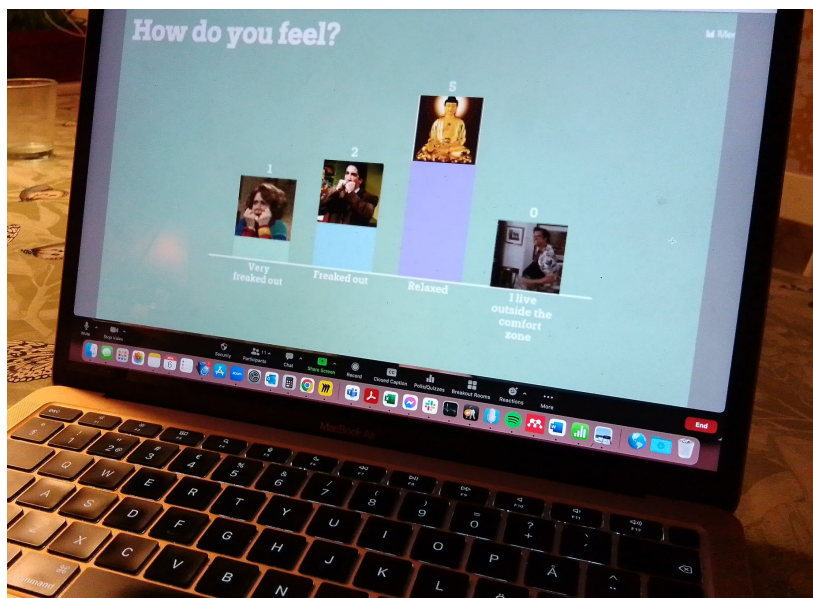

Fig. 1. Example of a playful online poll.

2.1 A Fire-up Session

"Fire-up" sessions, as introduced by a guest teacher working as a consultant in industry, were 15–30-minute activities over Zoom, where distributed participants were guided by a facilitator through a set of physical activities such as dancing and mirrored movements over video, and short breakout discussions. The zoom fire-up activities responded to the sedentary and socially separated way of working during the pandemic.

Starting with a cheerful "Welcome!" Ken directs us to an online poll, "How do you feel?" (see Figure 1). This sets the tone of the activity. Ken encourages us to "come out of our comfort zones" and explains the setup of the first activity. He asks everyone to click on "gallery view" and to then stand up. "We are going to do a movement exercise, let's try it out for 10-15 seconds so we can figure out how it works." We are asked to mirror his movements as best we can and try to "stay connected" to his movements. He then starts moving his arms like a bird, then moves close to the camera, then far away, finally spinning around. There are a few giggles as it becomes obvious this is very playful activity, not what we have been used to doing over Zoom.

"Now that you know how it works, we are going to try it a different way. I might "spotlight" one of your screens", meaning that person becomes full screen for everyone, and the spotlighted one leads the movements. Ken puts on a "cheesy 80's song" and it quickly becomes a type of playful dance party. One-by-one he spotlights each person, and we follow their dance moves, playing to the camera, sometimes appearing in and out of the field of view and trying out all the funny dance moves we can think of. Once the song ends, Ken introduces a breakout activity before sending us off into small groups, "introduce an object you are nerdy about, you have 3 minutes, accept your breakout rooms and go!"

While the activities appear spontaneous, during the Fire-up design seminar, Ken introduces the meticulous minute-by-minute planning of a Fire-up session. "Yes, let's!" is an exercise that focuses on accepting each other's ideas with unconditional support. Ken explains that when you are in a pure state of "yes let's" it is impossible to be judgmental and people start to dare to put their ideas out there. Similar to brainstorming, one group member makes a suggestion, and everyone replies loudly with "Yes, let's!", no matter how silly the idea. For example, during the first session with Ken, someone shouted out, "Let's make pizza!" and the rest of the group answered enthusiastically: "Yes, let's!". Everyone then demonstrated their interpretation by improvising movements or sounds, pretending to make pizza.

Once it was the student's turn to hold their own Fire-up sessions, each group facilitated a 15-minute session that combined elements of the original, but also a variety of different types of interaction. They were taught to always have a focal point to their facilitation, to celebrate technical glitches, to create variety in the rhythm of activities, to use music, and to experiment amongst themselves before trying things out with others.

Often the facilitating team were co-located in a shared room, yet each using their own laptop to allow one person per rectangular Zoom space. One team created a shared

view of the Zoom gallery in a way that everyone had a unified view and stable ordering of participants, so that the participants could toss an imaginary ball to each other.

2.2   Method

This study draws on collaborative auto-ethnography in which we have turned our personal experiences into shared references providing multiple viewpoints on the Fire-up activities. Ellis and Bochner [20] define autoethnography as "autobiographies that self-consciously explore the interplay of the introspective, personally engaged self with cultural descriptions mediated through language, history, and ethnographic explanation" (p. 742). Several weeks after the course had ended, a teacher sent an invitation to the 12 students and a co-teacher inviting those who were interested to participate in reflection and contributing to a publication. We then held a 90-minute workshop via zoom, where students and two of the teachers in pairs reflected on their experiences, facilitated by a shared Miro board. The discussions resulted in 59 written notes, plus photos, a few hand drawn sketches, links to online resources and five short videos of discussions. After this, the experiences discussed, in the form of the annotated Miro board along with a draft online text document were shared with the whole group, followed by a core group continuing the analysis through writing. For this case we introduce five accounts resulting from these activities, put them forward as demonstrators for the types of issues that are "at play" in this design intervention. All names of authors of the reflective accounts have been modified for anonymity within the paper. The selected names do not reflect the international character of the group, as they were selected from list of common English names beginning with A, B, C, D and E. The authors have added the discussion section and conclusions.

3   Reflective Accounts

The five reflections in italics below are written as first-person accounts from the perspectives of students and teachers taking part in the Fire-up activities, followed by extracts from the authors in non italics.

Ava (student): *As a design student, I had never experienced sessions like these. They forced us to make ourselves vulnerable in a way that online education rarely does. Since transitioning to online education, I have felt myself slip into my own comfort zone more and more in the way I participate in education. The physical distance makes me feel that my presence in an educational session is less important and I have started to understand that I rarely make myself vulnerable through online channels, because it feels less safe. Vulnerability requires trust in the people you make yourself vulnerable to and building this trust seems to be challenging though online communication. This makes me wonder what is limiting this 'trust-building' in the online setting.*

When I was a dance student, we had some similar sessions. Then we were often asked to improvise movements, sounds, monologues or dialogues in front of groups of people we would later collaborate with. These improvisation sessions were usually used for either of two purposes. Firstly, to improve the team dynamic, build trust and inspire each other. And secondly, to challenge our resilience. In auditions or competitive environments improvisation is used to test a student's limits and creativity. These two purposes seem to almost contrast each other, but in general it all comes down to how vulnerable you are willing to get and the positive effects of overcoming mental barriers. I feel that the Fire-up sessions did the same for us. They were so unfamiliar to us that we had to be vulnerable and move beyond our own comfort levels. When we can tell that others are daring to make themselves vulnerable, we empathize with them in a different way, regardless of how big of a step they take.

Another thing that has stuck with me is that often students seemed more uncomfortable when we had to involve our bodies in some way. We are so used (as designers) to communicate with words, text and drawings, that we lose touch of what it would be like to communicate with our bodies. I think this is a shame, because surely if we as interaction designers would be as 'in tune' with our bodies as we are with our minds we could create more exciting interactions. Some interactions just have to be imagined with our bodies.

I feel the Fire-up sessions might have worked this well because they were hosted in zoom. The way zoom allows the host to 'force' people to go into breakout rooms or to be spotlighted is exactly what a fast-paced session needs. A more "voluntary" setup would allow people to sit back and I think the level of participation would be very different.

In her account, Ava describes two sides of vulnerability and comfort in learning activities, and the balance between voluntary and forced activity, and how the balance in this case brought her into new experiences. Considering the schooling from home and home office set-up provide different types of comforts, working in one's home space, yet the "comfort" that drifts toward remaining inactive and detached runs counter to goals of a learn place. She sees the vulnerability that this activity triggered as an unusual school experience, especially during online education.

Brianna (Student): *For me, the sessions blur into one cohesive experience as I look back. However, thinking of the very first session, I remember that being vocal in new ways felt the most awkward to me – when we were supposed to shout things out and respond to others with engagement. Picturing the scene, I remember that I had just set up my home office space. My desk was against the wall and I was standing up facing the group on my laptop screen, and the wall to my neighbours' apartment behind it. The door was open to the rest of the apartment, and I knew my partner was out there working. Since I have practiced dance before, I really enjoyed standing up and moving, and I pushed aside that internal voice telling me that this made me look silly, weird, and awkward. When it came to being more vocal, that is where I held back. I did not want to shout at my neighbours' wall or disturb my partner.*

Something felt awkward about the audio feedback in the virtual space; my own voice was so much louder and clearer than the rest of the group's, and while Zoom makes it quite clear that everyone shares a similar visual experience it is harder to know how

the sound might be perceived by the others. On my end, at the time, my laptop's sound card was not working properly, and I preferred using wired headphones to be able to speak closer into a microphone during classes and meetings. At first, when we shifted to the physically active parts of session, I tried keeping the headphones on, which really hindered my movement and participation. Removing the headphones then became a bit of a hassle, to quickly take them off, find a good place to put them on my desk, check the audio settings and then get back to dancing or making faces. Eventually I think it created this hyper awareness of how my sound would come through.
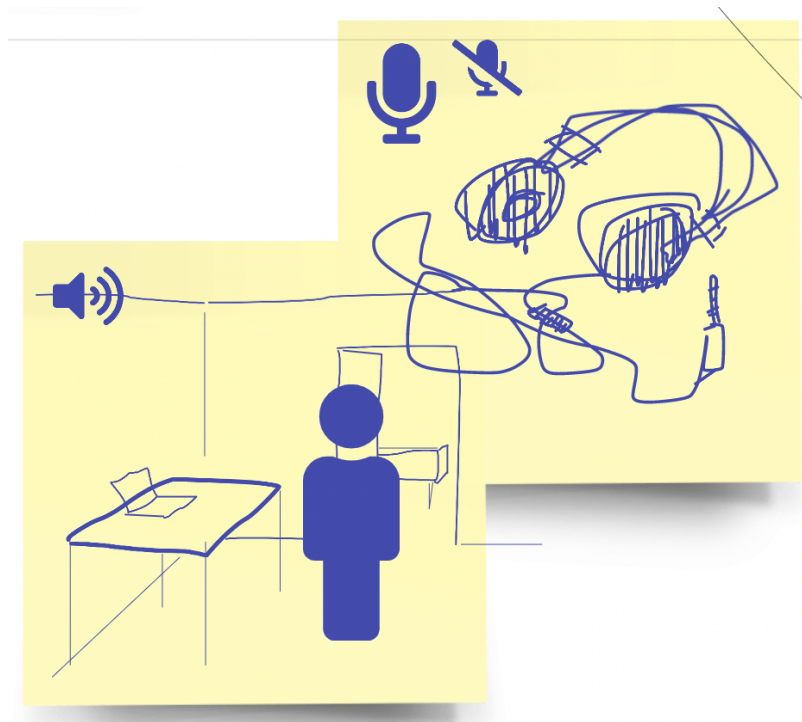

Fig. 2. Brianna illustrating considerations of being vocal in a virtual space, presented on two electronic notes on Miro. Note how the illustrations include a hybrid mashup of hand-sketching and pasting of online clipart.

For the duration of the project I was struggling with this expectation of having to perform in order to be paid attention in the virtual space. I reflected a lot on why it was so important to act out with intensity and why some kinds of performances seemed to be more valuable. In the beginning of this process of pushing "out of the comfort zone" it felt dishonest to me. As if my natural way of being was just not good enough in this virtual space.

Constantly being able to see myself on screen initially made my experience less about how we as a group created a playful and energizing environment together, and more about how I personally performed in front of the camera. Something that probably would not have crossed my mind in similar activities in a physical space. As we worked through the sessions however, I think I started to focus more on the shared experience. Especially as we moved on from being participants in Ken's Fire-up sessions, to facilitating our own sessions for the rest of the group. At the time it felt like the class had an internal, shared understanding of how to act, respond, and behave. For me, it eventually did become this safe space of exploration that we initially aimed to create. However, as we applied our new skills in presentations for the company, it was clear that e.g. dancing in front of your colleagues in a professional, virtual setting is not for everyone. As we tried something with them that now was common practice for the class, one of the staff members dropped out of the Zoom call. We had no means of knowing why, and had not prepared a way for how to bring them back.

From Brianna we get glimpses of the effects of the group video format, with the vulnerabilities around seeing oneself on screen and being seen by others, and more consequentially in her experience, hearing one's own voice and potentially being heard by others. While she describes having personal resources from dance to help herself fight away the worries about looking silly to her partner or neighbors, hearing herself and the prospect of being heard by her partner and/or neighbors created a greater obstacle, as well as the constraints posed by her technical set-up.

Charles (student) *After the initial sessions, it was the turn for our group to organise our own 15-minute Fire-up session. Our group of four students from four different cultural and national backgrounds felt physically isolated from society challenged by the cold and lack of light. We had to find ways to stay active, engaged and support each other, in situations when we felt tired. This was reflected in the way we worked as a group and also how we chose to set up our session, as a highly physical activity, wearing sports clothes and being fully engaged.*

One exercise we introduced was inspired by "Mario Party" on Nintendo Switch, which we often played in the group to take small breaks. We realised that the game had elements of playfulness, but also gestures of group support, which required each player to synchronously move their controller. This tied back to the synchronous movement exercise, the dances with Ken, but also to the "Yes let's" activities. This exercise also referred to the manga character Doraemon, a blue cat with super powers with the help of digital tools. During the first exercise we had already played the Doraemon theme song, to build up momentum for this second exercise. We gave the participants 10 seconds to fetch any random object, and reimagine it as a digital tool, then in breakout rooms explain to the others what they saw in that object. For example, someone picked up scissors and reimagined them as a digital tool to cut away people they did not want to see on zoom. The second exercise was concluded as a big group, where everyone described their ideas on Mentimeter, facilitated by the host, as a way of sharing ideas between breakout rooms.

Fig. 3. Charles' photo of the "backstage" physical setup when his group conducted a Fire-up session from school.

The technical setup for this session posed numerous challenges to us. The "backstage" (see Figure 3) had to accommodate space for moving, placing laptops with cameras, taking the visible frame into account, lighting, keeping the agenda visible and time-keeping. With a group of four, but only two laptops, not everyone could fit in the frame simultaneously. To avoid echo, we only used one microphone at a time. That required more planning who speaks when and made it harder to respond spontaneously. An unresolved conflict concerned that in the first exercise we prioritised screen sharing over showing video of participants reacting. It would have been more fun to see all participants in gallery view, instead of sharing the screen with the pairings.

Charles demonstrates how his team drew on various resources such as ways in which the students had been taking each other through playing video games together, and attempting to bring that type of activity into their fire-up session. Additionally, the team painstakingly worked through the learn space's technical constraints, demonstrating how the details of the visual and audio exposure in their project room required more nuanced orchestration to deliver the effect they were seeking. At the

same time, according the account, the more detailed orchestration took away their ability to improvise responsively with the participants.

Fig. 4. A teacher's home office set-up.

David (Teacher): *During the Fire-up activities, I was basically a participant, having organized it ahead of time, but not having any type of responsible role during. During the first session when spotlighted, all of a sudden, I was now the one to lead the dance. Here I was, standing behind my chair at my desk in my child's room, with all the neighbours potentially able to see me through the windows, but not seeing them, feeling forced to do something I have always feared, dancing in front of others open to their scrutiny. At the same time, I felt I was exposing myself to the students, and contemplated the appropriateness of it all. There is something very awkward about introducing what could be considered "childish" activities in design and design education, something that many people shy away from. Yet I felt I had to fight through it to uphold the integrity of the good-intentioned activity.*

Once Ken said spotlight, one student dropped off from the Zoom call, then another. It struck a nerve in me. How appropriate is this activity actually and how uncomfortable is it for the participants? After the activity, I wrote to both students who dropped out checking on their well-being. I then had individual video calls with each of them. This proved to be rewarding as it allowed a discussion about the challenges of the activity

and what could support the students in going forward. In A's words, "when Ken said he was going to spotlight us, I wasn't ready and reacted by just shutting my computer. Then it was all of a sudden quiet. I mean, I wouldn't have walked out of the class if it were in person, I just reacted and shut it. It then seemed weird to try to come back, so I just stayed out."

David brings a teacher's perspective being responsible for arranging the activities and inviting Ken to host the Fire-up session, but not directly in charge of them. His vulnerabilities combined the physical space in the "neighborhood" as well as feeling a type of pressure to perform and pressure for the Fire-up activity to work for everybody. The palpable vulnerabilities in relation to the students and need to provide a strong learning environment for all the students.

Emily (Teacher): *At the open office space at the university where I usually work, there are "sound-proofed" glass booths used for taking phone and video calls. I participated in one of the later Fire-up sessions in one such booth, when I had become kind of used to the setup, less self-conscious about whether anyone else at the office would see me. After the session one of my graduate students, confused by the glimpse of their supervisor dancing in front of the laptop, sent me a short video clip of what they had seen. It wasn't really until then that I realised "oh wow that looks so silly!". I found the situation funny, and forwarded the clip to the slack channel for the participants in the course. Figure 5 shows a snapshot from the video and its reactions from students in the slack channel.*
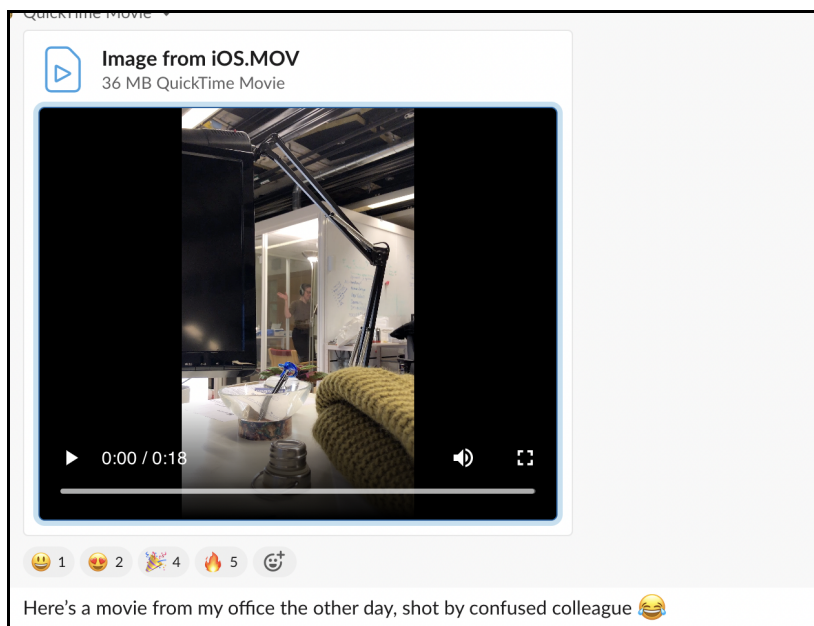

Fig. 5. Screenshot from course slack channel, with teacher sharing a video.

This example illustrates some of the pushing of boundaries, and how in terms of professional and social status, it felt as we all became beginners, shifting to a more "side-by-side" orientation with the students, and quite informal in tone. At the same time, especially in the beginning, I felt that as a teacher I couldn't back out of these activities, I just had to participate even if it might have felt awkward. Probably students felt the same, but from the other way around, that they felt they "had" to perform in their roles as students, even if Ken told us we could all leave if we felt uncomfortable.

The reaction to Emily's participation in the Fire-up activity, a playful video taken and sent by a PhD student, and her account of realizing she had quickly become used to performing in this way to the computer and feeling comfortable, demonstrate a link from the sensitives the participants felt toward their unintended audiences within their dual use spaces, and the way it may trigger others. Taken together with the other teacher David, we see the pressure to perform as a teacher attempting to encourage participation of the students. The sense of shared vulnerability can be attributed to it feeling like everyone became beginners together.

4 Discussion

In the above accounts from the experiences as co-organisers, co-participants and co-performers of the Fire-up sessions, a number of themes or insights were expressed. Here we bring forward these in discussion, specific to the context of design education, and by extension or by extrapolation, to design practice. We would like to see this task through the lens of an action-oriented activity, making available what might be at stake when designing for hybrid environments, both as designers of the activity, and as a participant to such activities. In many respects, participation in the challenge provides different learning experiences for each.

The overall set-up of the moving from shared physical spaces of classrooms, restrooms, studios, etc. to distributed set-up with each participant meant to be in front of one computer in a non-specified location, pushed the boundaries of what can be considered the classroom and the class time. We get a glimpse of pushing the self-perceived physical, visual, and audio boundaries of these spaces, as they simultaneously double as their original purpose and as a video-based learn space. Viewing these circumstances as a laboratory for exploration, and the project as an arena for students and teachers to engage in designing for the home office, puts the participants in the position of a unique probing device, drawing on their biographic and situational resources.

Most striking is how this short format of a remote activity provoked both students and teachers to experience an extraordinary style of engagement for collaborating via video in a variety of physical spaces. An obvious focus is how participants, whether teachers or students, felt that they were forced to or encouraged to *push their boundaries* in different ways. This diversity of experience, and the way in which the experience and accounts of it demonstrate variety within the wicked problem space of

traversing different constellations of people and devices in physical and digital learn spaces, allows for experiential understanding of the breadth of factors at play in working with dynamic challenges. We here use the notion of *elasticity* to point to the *stretchiness* demonstrated in pushing boundaries, the resistances, sometimes hesitations and other times reaching provocative limits, either causing a breach in participation or a bounce back effect to the "known" or "expected" state of comfortable participation in post pandemic hybrid settings. In line with MOMA's exhibition The Elastic Mind [21] that provoked contemplation about the current states of contemporary experience. In this sense, the short project aiming to design 15 minutes of participation that is meaningful for people working in distributed hybrid formats provides the "first approximation" of a variety of issues. Here we look at three types of elasticity.

4.1 Elasticity in boundary pushing

The Fire-up sessions provoked strong reactions as both the students and teachers highlight, with each demonstrating different nuanced styles of heightened spatial awareness and the sensitive areas of social and emotional safety. We draw from this that there is both a sedentary norm to remote work, but that this norm may still be up for negotiation and redesign. The transition to Zoom as the *learn place* could be framed as a form of unintended intervention with characteristics of a *breaching experiment* [22]. Due to the pandemic activities that breached the norm of everyday expectations, the activities exposed unseen social ordering of activities. The Fire-up activities appear as an extreme version of this transition by their fast pace, short time-period, and mix of different uses of sound, body, and space and different forms of interaction with each other.

Most obviously, Zoom sessions with cameras on very literally push the boundaries of visually letting students and teachers into the varied physical spaces of one another's, as well as in a way forcing ourselves, as teachers/students, into spaces of our fellow students/teachers. Everyone in the course potentially caught a glimpse of the messiness or even cleanliness of our various spaces: at school, but also at home, kitchens, living rooms, even bedrooms, sometimes with other family members and/or pets. Participants had the choice to attempt to mask the visibility of their space through how they arranged the space in relation to the camera or through introducing a Zoom background that predominantly blocked out the visibility. But the practice also pushed boundaries in terms of unexpected audiences, where partners, children, colleagues and neighbors became unintended spectators of the activity, triggering different forms of participation from the students and teachers.

In particular, being *forced* to engage in full bodied activities, was a form of pushing the boundaries of what constitutes legitimate "working" movements in front of a computer, from sitting to standing up, dancing, moving and performing in *unusual* ways. Finding "safe" physical spaces to engage in, avoiding unwanted audiences, became important in a very spatial way, taking into consideration not only the physical

space in terms of its appropriateness of performing to the screen (height of table, appropriate lighting, whether the background was tidy enough, etc.) but also whether the unintended audiences would be exposed to these types of "unconventional" activities visually. This points toward both teachers and students either projected how others may see or hear their activities, creating either discomfort or motivation to look for a solution. In this sense, rather than a classroom within an educational institution setting clear-cut boundaries for legitimate learning activities, the free form of distributed engagement relocates a big part of the boundary-making activities to each participant.

4.2 Selected elasticity of the performative space

When a teacher or student walks into a shared physical space, there are certain visibilities that play a role in what can be expected from each other. In a typical arrangement, the teacher can see the student "in the round", what they have brought to class, and the various inputs that may draw the attention of the student. If we think of Goffman's [23] front stage versus back stage of impression management, the student and teacher are in the front stage of one-another. What the student may be thinking and experiencing emotionally, where they came from and where they are going afterward are in the backstage, the student's interaction with a computer or phone is in the front stage, but most of what is taking place in these interactions is backstage. The concept of CrossActionSpace looks at how co-located people interact beyond the boundaries of their shared space, while in a shared classroom space. The teacher's gaze over the space can play the role of an authority through the visibilities within the room and the power that comes from teacher as organizer of activities and the evaluator of performance. While CrossActionSpace account for the extension of the classroom via digital devices, teachers may explicitly create limitations, allow or encourage use of digital devices increasing or decreasing their use. In this case, the two teachers (co-authors) played the role of participants in the Fire-up activities, relying on the guest teacher for both facilitating and coaching the students in their activities, yet one was the course responsible, a likely force at play in students awareness. Instead of a clear teacher student encounter, it was first the guest teacher and then the students who played the roles of organizers and facilitators of their 15-minute sessions learning to keep the focus and attention of all the participants throughout their 15-minutes.

The subsequent reflections by students and teachers on the Fire-up experiences revealed snapshots of the types of emotional issues that were in play to the participants. The facilitation role relies upon everyone in the group "playing along", creating a type of front-stage peer pressure for participation. As the teachers noted, there was a reluctance to stop despite the discomforts, based on the idea of setting an example. The facilitators prototyped activities that purposefully provoked the sedentary Zoom participant to become active, activating their senses through mirrored interaction and turn-taking activities. As the student Brianna stated, maintain her neighborly boundaries in relation to noise by wearing headphones was not possible while following the activity based on the need to follow the dancing actions.

Toney et al. [13] focus on the differences between classroom teaching and learning and online highlighting how the space affords choosing groups based on proximity, and the teacher's ability to observe student body language in contrast to online views. The lack of shared spatial reference makes unavailable or highly altered referential language for orientation. In linguistics, contextual anchoring of self-in-space and time at any one moment puts the speaker at the intersection of the *spatial and temporal deixis* of a language, a ground zero that allows for the use of orienting language for those sharing context [24]. That is, within a communicative event, the speaker is located at the center and refers to you and I, mine, yours and theirs. And spatially, that one over there, behind you, versus this one here. The accompanying gestures and language that creates short-cuts to shared references in relation to who is present and visible.

Within the video environment of the Zoom, the physical orientation of the participants does not allow for a shared picture of who is where, it is different for each viewer of Zoom. This limits the use of spatial deixis indicators, something that one group created a work-around for, giving all Zoom participants a shared view, allowing for pointing and passing around an imaginary ball.

Moreover, in a design studio or classroom, students are often working with some form of physical material, e.g. gesturing along with sketching on paper, which are important communicative tools, not only between student peers and between students and teachers, but for students to test and articulate their own ideas. Although these activities may still take place in online settings, either offline or using online tools such as Miro, the character and communicative patterns are different, as the medium is highlighting or focusing specifically on the face-face interactions.

4.3 Elasticity in what it means to do design education

The rhythms of in-classroom activities are generally regulated by physics of how fast people may move in physical space, how sounds carry in relation to the layout and materials. For instance, walking from a chair to the white board, getting together in groups, finding a place to work, and sitting or standing appropriately, taking a bathroom break all require movement and take time. At the same time, organizing learning activities, including many types of collaborative design activities, involves focusing on the social dynamics that arise in relation to different spatial circumstances and tasks. For instance, if there are four people in a group sitting around the same table, giving the group one copy of instructions on an A4 paper requires them to agree on how to share the instructions, possibly sitting close together and reading it at the same time or having one person read out loud. If the A4 is taped to the table or pinned on the wall, it shapes the collaboration differently. In contrast, if each group member is given their own copy of instructions, they are more likely to read alone in silence without the need to coordinate. Design teachers, at least these authors, have experience in applying a repertoire of techniques into designing design learning activities through the use of the properties of physical spaces and materials, and of group dynamics, specifically, with consideration to what the students' expectations of design education may be. These rhythms play by a different law of physics when engaging remotely. It is within the

transition from the physical spaces to the virtual spaces that we, as educators, seemed most uncertain.

Designing for the new social complex of online design education could be framed as a "wicked problem", ill-defined and without a single clear-cut solution. Here however, we reflect on how our instantiation or attempt at a method for addressing this context, became a wicked situation in and of itself. As implicitly expressed in the personal accounts, there was an inherent character of "naughtiness" in the setup, a breaching of boundaries through a kind of playfulness that not everyone agreed upon, and an initial resistance by almost everyone to participate. Thus, although intended as playful and instructive for the case we were working on, it was not considered playful, or even useful to either us educators or our students, at all times.

Is there value of such "wickedness" within a design education? Is there any safe space for "uncomfortable interactions" [25] when engaging students in co-design? Several existing and established methods, used for ideation as well as for conceptual reflection and criticism explicitly include elements of mischief or unseriousness, extreme personas [26], cruelty as a dimension of play [27], misuse scenarios [e.g. 28] and not least the satisfaction and – for the purpose of design judgement – often constructive function of writing/reading negative product reviews [29]. We could further link this to the fact that we often put students in positions of uncomfortable interactions in a way that is invisible to teachers (e.g., user studies/fieldwork). The dual challenge of trying to "lighten up" things in the educational context of a pandemic and to find openings for playfulness and joy to the idea of the future home office, along with the subjective matter of what is "fun" or even "ok", without everyone feeling ready or open to such an "unserious" take in the context of professional practice. Here we like to acknowledge that this is a complex challenge to face in online design education, and which is still not resolved.

5   Conclusion

Our experience from the "Fire-up" sessions is here framed as a form of design lab, resulting in reflections around different forms of *elasticity* that we find inherent in hybrid design education. The rather simple group task of designing a 15-minute Fire-up activity for fellow students and teachers proved to challenge and confront what could be considered the emerging "norms" within the highly unusual way of organizing design education occasioned by the pandemic, not only for students, but teachers alike. This was not only a case of attempting to set up our design education in a remote fashion, but also using the remote setting for students and teachers to explore the circumstance of remote work itself, and the inherent 'hybridity' explored in such work, whether 'fully remote' or not. Using our own experiences and sensitivities as probes, the case demonstrates the challenges involved in developing distributed work practices that do not appear to conform to the notion of sitting at a desk working, while also demonstrating how quickly group activity can develop alternative practices. The combination of a collaborative reflection on the overall experience as represented in the five anecdotes surfaced many of the invisible aspects of, in this case, traversing hybrid

education formats. At the same time, through active participation, we get a snapshot of how the physical body has drifted out of hybrid design activity, highlighted by the discomfort participants experienced when the Zoom facilitator "spotlighted" their full bodies in motion. As a *way in* to intervening in the future home office, organizing and participating in these sessions proved to give the students and teachers their "first approximation" of what is at stake when designing for distributed work. These experiences were purposefully tied to the circumstances of the specific situation in time and the specific hybrid constellations, and therefore are not meant to be replicable. Rather, we see much promise in educators identifying similarly short projects that engage students and teachers in doing design – experiential learning – for each other in way that explores the boundaries and elasticity of our hybrid environments, including attempts to "design" the minimum contributions to practices that both they can participate in and that may fit their target audience, giving themselves a first approximation of designing within the dynamics of a complex problem space. For this we see greater potential for pushing the boundaries through playfulness and even deviance that quickly surfaces and sensitizes teachers and students to what is in fact, in play when they design.

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