

## **WIP: Mozilla Hubs Classes Fight Feelings of Isolation and Online Fatigue**

**Dr. Eric Gary Fuller, University of Florida**

Lecturer and Biomedical Engineering Senior Design Instructor at the University of Florida.

# **Work in Progress: Mozilla Hubs Class Experiences Fight Feelings of Zoom Fatigue**

## **Eric Fuller, Ph.D.**

**J. Crayton Pruitt Family Department of Biomedical Engineering, University of Florida**

This work-in-progress paper proposes the use of Mozilla Hubs for informal online classroom activities and feedback sessions instead of Zoom (or similar platforms). Mozilla Hubs is a 3D virtual social experience in which students can create their avatar, move about the scene, talk with others, upload media, and much more. Through interactions that more closely mimic natural human engagement coupled with a video game-like platform Mozilla Hubs has the potential to create a refreshing break from the typical virtual discussion format and reduce the fatigue from online classes or meetings. The use of Mozilla Hubs is recommended for informal group discussions or feedback sessions, such as the poster rough draft feedback session example given in this work.

Students are reporting increased stress, isolation, and mental health concerns [1]. They feel isolated due to less interaction with peers. They also feel “Zoom fatigue” due to the many classes and meetings they have online. Zoom fatigue is a new term which refers to the social, mental, and educational toll of ultra-frequent video classes and meetings on participants. Although Zoom is a specific platform, the word is now used as a verb to mean any type of video calling and the referenced Zoom fatigue applies to all such online video platforms. A recent article, purportedly the first peer-reviewed article to analyze this effect from a psychological perspective, offers several potential reasons [2]. The first is that all eyes are on you all the time, unlike the natural scenario in which the gaze of all participants is directed at the speaker. Large, close-up faces are common and can subconsciously tire you. The second reason is similar to the first – you are always looking at yourself. A third source of Zoom fatigue is reduced mobility. From the context of a small group discussion via Zoom where video is expected be on, you do not stand up and move around for a quick cognitive break. These three sources of Zoom fatigue could be addressed by using virtual worlds such as Mozilla Hubs for certain classroom activities.

Mozilla Hubs is not the only platform that can host a virtual world for educational purposes. Several other virtual reality platforms, such as Second Life, Activeworlds, and Multiverse have been used for educational purposes as well as tourism, real estate, medicine, and more. For example, an “Engineering Education Island” virtual world was created via Second Life [3]. This island featured a virtual laboratory with multiple floors and exhibits such as AC generators and DC motors. For creating detailed laboratory exhibits Second Life might be an ideal platform. However, users must download software and register for an account, and the creation of scenes is a labor-intensive task for the instructor. For simple, ready to use scenes to host small group discussions Mozilla Hubs is a more efficient platform for both instructors and students.



**Figure 1: Mozilla Hubs poster session example.** Two students are in a virtual forest discussing a draft of a senior design poster. Instead of having all eyes on all participants at once in a group discussion via Zoom, the focus can be on the presenter or the poster. In addition, the game-like environment creates a fresh, low-stress experience for students which they see as a welcome break from the typical platforms.

Mozilla Hubs is a 3D virtual social experience that can fight online fatigue and feelings of isolation by demanding more focus, providing more natural breaks, and creating a new and fun atmosphere. In Hubs, a student creates an avatar in a virtual 3D world that can walk around, talk with others, and view and interact with media much like in a video game. In a standard video call, all eyes are on you whether that is the intention or not, and assuming you are participating with video you are not free to move about. In the Hubs example from Figure 1, the students' attention is directed towards the poster they are discussing. In Hubs students can click on the poster to see it full screen if needed. The students are in a virtual forest with all of their classmates and poster boards lined along the wall, and they are free to move their avatars about the forest to visit other posters and student groups. They can hear other students whose avatars are nearby. They do not hear far away students, however. This mimics the in-person experience of going from group to group and just hearing the conversations near you. In addition, students can have desired physical mobility by walking a few steps away from their computers as needed (compare to a small group discussion via Zoom where videos are expected to be on and there is less mobility). This is how the Hubs environment addresses three sources of Zoom fatigue from [2].

Beyond addressing Zoom fatigue Mozilla Hubs has potential for increased engagement as well. Students have commented that on Zoom they are mostly passively listening, but with Hubs you must be engaged because you are using multiple parts of your body to navigate the scene (one hand for the mouse and another hand for directional arrows or other keys). Hubs also potentially increases feelings of togetherness. In Zoom, you can virtually be on the beach, in the

stars, etc., but you are in your own small box and your neighbor is somewhere else. In Hubs everyone is on the same virtual beach or whichever scene is chosen.

To determine whether Hubs could serve as an appropriate substitute for Zoom for certain class activities, students joined a Mozilla Hubs scene with rough draft versions of their team posters and interacted with each other in groups. This was done in a biomedical engineering senior design course of 97 students. Note that the Hubs default room cap is 24 participants. This cap can be increased but it is not recommended due to increased processing and internet burden for each user. Therefore, for large classes such as this one multiple Hubs rooms must be running at once or a rotation must be in place, and in this case the latter was done. 4 student senior design teams of 5-6 persons per team joined for 30 minutes each. The layout was a square field with the 4 team posters easily visible in each corner of the field and surrounded by forest and mountains. The posters were spaced at a distance such that in the virtual environment one could quickly walk their avatar to any poster, yet any group gathered at a poster could not hear groups discussing other posters. Afterwards informal feedback was collected. Students commented that the format was less stressful and more enjoyable than Zoom. They felt it was more engaging and was a welcome break from the typical classes. They also noted, however, that this Hubs format would not work well for large lectures and is better suited for group interactions and feedback. The initial recommendation from this work-in-progress effort is in line with these student comments. Hubs could serve as a great mechanism for peer review and small group discussions but it would not be well-suited for large lecture sessions.

The future step with this work is to have repeated student experiences on both Zoom and Mozilla Hubs followed by formal feedback collection. The feedback will likely be a questionnaire with Likert scale answers (strongly disagree, disagree, neutral, agree, strongly agree) to questions regarding the different experience of Zoom and Mozilla Hubs. Potential questions would target the feelings of engagement with others, engagement in the class activity, feelings of togetherness, fatigue, and enjoyment.

#### References

- [1] M. Camlasaran, "People need people: students feeling impacts of online school isolation," Ryerson Folio, November 4<sup>th</sup> 2020
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- [3] M.J. Callaghan, K. McCusker, J. Lopez Losada, J.G. Harkin & S. Wilson (2009) Engineering Education Island: Teaching Engineering in Virtual Worlds, *Innovation in Teaching and Learning in Information and Computer Sciences*, 8:3, 2-18, DOI: 10.11120/ital.2009.08030002