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Inequalities in the participation in social learning and open innovation during crisis

Transcript of Pivot 2020 presentation

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Over the last years, I have been working with partners in Mexico to support the co-design of Fablabs and Makerspaces in marginalised communities. Fablabs (Fabrication Laboratories) are non-formal educational settings that provide expertise and machinery to enable local digitally enhanced making in collaboration with others. Fablabs use open innovation processes for producing artefacts locally and sharing ideas and solutions globally across their networks (https://www.fablabs.io). The Fablab LaCampana, situated in a High School in the neighbourhood La Campana-Altamira in Monterrey, Mexico is an example of a Fablab in a marginalised community. After a conflict ridden past, in 2012, the La Campana-Altamira neighbourhood sought a change through open engagement in public life. The community Fablab has been one of many projects that community members and other stakeholders publicly participate in. The lockdown and social distancing measures to prevent the spread of the COVID-19 disease had a disproportionate impact on this marginalised community. This coffee table discussion seeks to explore how we can address the increasing inequalities in the participation in social learning and open innovation in Fablab and Maker communities.

Fablabs; inequality; participation; learning instructions; use of template

Over the last two years I have been working with project partners in Mexico to support the co-designing of a community Fablab La Campaña in Monterrey, Mexico. I was brought into the project to facilitate co-design workshops with Tecnologico de Monterrey students, academics, and community members as

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well as representatives from governmental and non-governmental organizations (Lotz et al., 2019).
British Council Mexico funded this work under a Higher Education Links programme.

Figure 1. Visual Illustration of the location of Fablab in Mexico

It is situated in the high school CB T's 99, in the neighborhood La Campaña Atamira in Monterrey Mexico.

Figure 2. Student’s working in a Fablab
FabLabs (Fabrication Laboratories) are non-formal educational settings that provide expertise and equipment, such as computers, 3D printers, and laser cutters, together with traditional tools, to enable local digitally enhanced making in collaboration with others. The social learning approach is central to the idea of a FabLab.

![Figure 3. Student's connecting with other students via Fablab technology](image)

Fablabs use open innovation processes for sharing ideas and solutions globally across their networks, but producing artefacts locally, with local resources and adaptations in the designs to a local context. A fabLab in a marginalized setting aim to support individuals and groups to learn to create objects and devices in response to local or personal needs.

![Figure 4. Example of a Fablab creation (Mobile Cart)](image)
For example, this mobile cart (Fig 4), where the technology and making equipment is stored, is a design used to provide access to digital creative making in many marginalized and isolated communities. For example, the Mobile cart idea was developed in another Mexican community FabLab project, led by FabLab Yucatan and IYEM FabLab in Yucatan. The strong regional links between the makers allow to translate ideas into local adaptations and filter successful uses of these adaptations in the region, such as that of a digitally fabricated Mobile cart. The La Campana-Altamira community was worried about security if the technologies were stored in the Lab space over night or at weekends or holidays. There were break-ins twice, but since the technology can be stored securely after use, it was not taken by the burglars.

![Figure 5. The La Campana Altamira neighbourhood](image)

After a conflict ridden past in 2012, the La Campaña Altamira neighborhood sought a change through open engagement in public life.

![Figure 6.](image)
The community Fablab has been supported by local and international higher education institutions and by local and international NGOs. They used approaches to community mapping (Fig 6) to identify salient issues that the community would like to address.

![Figure 7 Fablab project for outdoor furniture](image7.png)

**Figure 7. Fablab project for outdoor furniture**

![Figure 8. Fablab workshop in the community](image7.png)

**Figure 8. Fablab workshop in the community**
Together they produced community designs like outdoor furniture (Fig 7) or offered educational maker workshops in the community (Fig 8), for example.

*Figure 9. The Impact of COVID-19 on the community of La Campaña Altamira.*

Figure 9 shows another example of the collaboration between community and academic team members. Previously, a public trash container has been placed illegally in the middle of a park along a river in La Campana. The park is also used for Sunday markets. In collaboration with a guerrilla gardener, the market union, and the city government, Tecnologico de Monterrey students, the community FabLab and Insitu Social, a nongovernmental partner, redesigned the area where the trash container has previously been placed.

Many of these early successes have been overrun by the lockdown and social distancing measures to prevent the spread of COVID-19 disease. This had disproportionate impact on the community, as may be true for many other disadvantaged communities.

*Figure 10. First question posed for addressing challenges*
In this context, I would like to address some questions and it would be interesting to hear about similar experiences from others. The first one is, how in the current pandemic did public participation and community design and learning activities change, as locked down and social distancing measures took hold? Unemployment is increasing dramatically in La Campaña Altamira. The neighborhood is in lockdown still, schools are closed, and homeschooling is a theory. There is very low internet access rate and digital skills to engage in typical online learning replacements like Zoom are basically non-existent. Children and young people are just passing time. In crowded living conditions, we see more mental health issues arising and cases of domestic violence. However, many young people who have previously been actively involved in the Fablab, beg for opportunities to make a positive change now. The concerns for their health, make this very difficult.

How could marginalised communities continue to participate in global social innovation if they cannot use a community Fablab?

Figure 11. Second question posed for addressing challenges

The second question, how could marginalized communities continue to participate in global social innovation, if they cannot use a community Fablab? We continue to engage with the community and hope to provide creative, fun, and useful, informal learning activities in their homes, but first we have to fix the connectivity issue. With the help from a seed fund in the UK, and much funding and staff time from Mexico, they plan to provide local mobile networking technology and mobile phones.

Together, with the small making kit, to continue to engage in learning through making and sharing of the outcomes in smaller networks. Different audiences can be reached, younger or older children, but also local micro businesses can be supported through locally networked distance learning. The aim is to keep the habit of active participation and learning through making alive and bridge to larger opportunities that may arise later.
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About the Author:

Nicole Lotz is a Senior Lecturer in Design at The Open University, UK, which is a distance learning institution. Nicole is interested in design processes, collaboration, and engagement across boundaries and at the margins. Her work aims at understanding and supporting those who want to create and learn to engage, persevere, and succeed, even in challenging situations. This interest arose from her background and lived experiences in Eastern Germany, Hong Kong and the UK, and research carried out in South East Asia, Africa, and Latin America. Her current achievements include leading the School of Engineering and Innovation at the OU towards greater equity, inclusion, and diversity by chairing the School’s Athena SWAN submission. She has also recently completed two Higher Education links projects with diverse stakeholders in Yucatan, Mexico. Nicole currently supervises PhD students who look at racial inequality and mental health in design education.