Suggested Practices for Creating an Inclusive Hackerspace for Music/Sound/NIMEs

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ABSTRACT

This paper provides guidance on establishing inclusive hackerspaces for creating NIMEs, filling a gap in literature on feminist approaches to community hacking in music and sound. It advocates for spaces that promote innovation in music technology, emphasizing inclusivity, diversity, and equal opportunity. The authors draw from feminist literature to critically redefine terms like 'makerspace' and 'best practices' to and discuss the key features of hackerspaces, the role of community self-management in fostering inclusivity, and offers practical tips for building an inclusive musical hackerspace that prioritizes empowerment and community involvement. It concludes by stressing the importance of a nuanced approach in developing audio-centric hackerspaces, highlighting technological skill, community engagement, and ongoing self-reflection to ensure these spaces are welcoming to everyone.

CCS Concepts

•**Applied computing** → **Sound and music computing;** Performing arts;

1. INTRODUCTION

The authors of this text consist of the instructors and students of a Feminist Hacking class which was offered as part of the master degree program on Postdigital Lutherie, in The Tangible Music Lab at the University of Art and Design Linz. In fall of 2023 the class was taught by the founding members of EMKVLT; we wanted the class not only to gain an understanding of feminist history and approaches to media in order to contextualize and reimagine their own works, but also to give back to the community by "contribut[ing] to an action based... agenda."[10] All of the authors work in hackerspaces, but none of our spaces are explicitly feminist or inclusive.

The class decided to write a paper addressing the lack of literature on feminist musical makerspaces; we wanted to emphasize the transformative potential of tools and technologies in makerspaces for creating NIMEs, despite financial challenges in starting these spaces. Our research indicated a gap in resources that combine feminist approaches with community hacking in music and sound, despite existing guides for standard fabrication labs and some studies on feminist makerspaces which are referenced later.

As the class became more familiar with feminist literature, we decided collectively to use the adjective "inclusive" instead of feminist because of the exclusionary and racist history connected with the term feminism. To be clear, our work draws explicitly and substantially from feminist literature and activism; our cynosure for this paper was Sara Ahmed's feminist call to "make everything into something that is questionable."[9] However, we wanted to avoid the exclusion that some people feel comes when the term feminism.

Using this feminist epistemology, we interrogated the term Makerspace. We concurred with Andreas Hepp's assessment of the term Maker: "Rather than being a bottom-up movement, the Maker Movement is in fact a pioneer community with intimate connections to the corporate world and the political class maintained by a globally spread organizational elite." [19] Instead we chose to go with the less corporate term hackerspaces. We considered other terms, but several of our members utilize the hackerspaces WIKI to find "community-operated physical places, where people can meet and work on their projects." [17] We also decided to add the term sound to the title instead of simply saying musical to be open to a wider range of auditory experiences including sound art, the physical sensation of vibrational waves, and interdisciplinary approaches involving sonic practices such as acoustic ecology.

We then examined the phrase "best practices" because it seemed too authoritative and paternalistic. The concept of 'best practices' is often touted as a guiding principle in various fields, from business to education and it suggests a certain level of universal effectiveness and efficiency. However, this notion can be problematic: as Neumann and Meadows point out, "The word *best* implies a comparative hierarchy: not many practices, but select and specific practices."[23] By challenging the universality of 'best practices,' and instead using the term suggested practices we ideally open up a dialogue that considers a more diverse range of perspectives and experiences, leading to more inclusive and effective practices that are adaptable to various contexts and needs.

While the evolution of our working title involved changes to nearly every word, the core intention and positionality behind creating this document remained consistent. We believe that a deep reading of our working title offers a valuable window into our decision-making process. This careful consideration extends beyond mere words and into the actions we advocate for, reflecting a holistic approach where language and practice are inextricably linked.

2. SOME HELPFUL DEFINITIONS

We came to this topic from a distinctly feminist agenda. The term feminism has evolved over the decades starting with what is now known in Europe and the US as first wave feminism in the late 1800's which was focused on suffrage or women's right to vote in democratic countries such as the United States and Great Britain. Throughout its history, feminism has been both praised and criticized; although seeking social justice, early feminists focused primarily on the experiences and needs of middle-class, white women and overlooked the unique challenges faced by women of color, LGBTQ+ women, women with disabilities, working-class women, and other marginalized groups. Contemporary Occidental feminism, labeled as fourth wave feminism, increasingly strives to be intersectional, acknowledging and addressing the ways in which gender intersects with other identities like race, class, sexuality, and disability. We were particularly inspired by Mustafa's definition of feminism's commitments to agency, fulfillment, identity, equity, empowerment and social justice. [22] When designing the suggestions for developing a code of conduct we returned to these ideals as well as Anoushka Khandwala's statement "with every design choice we make there is the potential not just to exclude but to oppress." [21]

We all agreed that what distinguishes a hackerspace from other types of communities is that it is a physical space with shared hardware. Guthrie describes "tech shops, maker spaces, hackerspaces, hack labs or fab labs [as places that] enable individual production by providing both the physical tools, such as 3D printers and laser cutters as well as a network of members who are willing to share their knowledge to help others;" [16] Hackerspaces, with their unique combination of shared high-tech tools and a collaborative community, can offer an ideal environment for the creation of New Instruments for Musical Expression (NIMEs). Unfortunately hackerspaces have primarily been seen as the domain of men; in response women began organizing specifically feminist spaces such as HackerMoms. "Like other hackerspaces, HackerMoms supported creative do-it-yourselfers in sharing tools, knowledge, and community. They offered member-based access, nearby public transport, and facilitated workshops for learning new tools...They built HackerMoms to serve mothers....members of Hacker-Moms claimed [traditional hackerspaces] became unaffordable or unmanageable without opportunities for childcare."[24] The class visited a feminist hackerspace in Austria , Mz* Baltazar's Laboratory, and read one of the co-founders articles "Feminist Hackerspace as a Place of Infrastructure Production," [27] and were deeply inspired by the concept of infrastructure in hackerspaces. Here infrastucture as defined not only on the physical facilities but also on the often invisible labor that is essential for a community to thrive. This focus on labor is particularly important to create a successful, inclusive hackerspace.

3. DEALING WITH PEOPLE

Before delving into the physical design of an inclusive/feminist hackerspace, it's crucial to first envision the kind of community we aim to foster. Establishing clear rules of coexistence is essential for creating anti-hierarchical spaces. Understanding hackerspaces as communities with a specific technological objective in which the management of resources falls on a limited number of individuals, these spaces should serve as incubators of creation, where members can embark on individual and collective projects. We suggest adopting the values inherent to self-managing communities Community self-management begins with identifying the needs and desires of individuals in a community.[12] These "states of lack" are what motivate individuals to have basic drives to improve their community. With a clear understanding of these values and shared needs, one can proceed to design the necessary infrastructure to serve the community targeted by this creative space. We believe that the core value of inclusivity is empowerment, and have structured our suggestions for developing a code of conduct accordingly. Maryam Mustafa combines social economist Naila Kebeer's definition of empowerment as "a process by which those who have been denied the ability to make strategic life choices acquire that ability"[20] with social activist Srilatha Batliwala's concept of women's empowerment "by accessing material, information and ideological resources, which in turn allows them to redistribute power in their societies"[11] An inclusive approach is a process; in the rules proposed for the development of an inclusive hacker space, it must be understood that the space provides a service as an organization and that although these services are open there will need to be a structure for sanctions that effectively order the operation for the benefit of the entire community in case of disruptive members.

In audio-centric hackerspaces, these guidelines are particularly important in a shared space dedicated to activities like sound production and critical listening. Managing sound isolation is a key concern, especially when the space is used by multiple members simultaneously. Effective sound isolation can be achieved through the use of physical barriers, such as soundproof panels, or by strategically scheduling activities that require quiet or concentrated listening. This ensures that one member's work does not interfere with another's, allowing for uninterrupted audio work. The guidelines should also set clear expectations around noise levels. This includes specifying maximum acceptable volume levels for different activities and times of day, to prevent any disruption.

Additionally, the space must be inclusive and accessible to people with disabilities. This means not only ensuring physical access to the space but also making accommodations for those with impairments such as hearing. Visual alert systems and ensuring that sign language interpreters are available during workshops can make the audio-centric space more welcoming and accessible. We also want to stress the importance of fire extinguishers and a fire egress plan; these are not specific to audio-centric spaces but are essential to consider in a DIY venue.

4. DEALING WITH STUFF

Drawing from our own knowledge as well as the resources at the Tangible Music Lab and the hackerspace electronics lab website [?] we have come up with the following list of audio-centric equipment that can be added to any standard hackerspace. With this, we are adding to previous work presented at the NIME conference by Michael Sobolak that aims at assembling ingredients for a Music Makerspace (and coursework) and take it one step further outside the

institution into hacker territory. [25] We believe an ideal hackerspace for music and sound creation should also have a space for small performances in order to share projects. In addition to the equipment often found in these spaces a music-specific space needs specialized gear and attention to the sonic properties of the room.
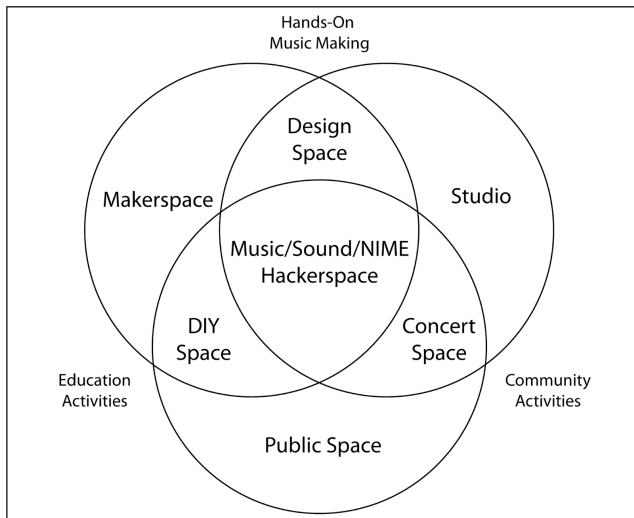
Figure 1: A Venn Diagram of the Components of a Music/Sound/NIME Hackerspace.

Functions of Music/Sound/NIME Hackerspace can be combined into three basic groups - the space should work as Makerspace, Studio and Public Space. In the context of Music/Sound/NIME creation, the same equipment can be used to perform different tasks, e.g. the same speakers, amplifiers and microphones can be used as laboratory equipment at the Design Space, musical instruments amplification for the Concert Space for amplification of the speech for the workshop host in DIY space, etc. An example of possible technical riders for an audio-centric hackerspace can be found here: https://bit.ly/inclusiveaudiohackerspace. Equipment should be ideally robust, reasonably priced and repairable; to save costs we have suggested versitile multi-purpose equipment that can move between the three services.

5. GETTING STARTED

The concept of 'do-ocracy,' a form of governance advocated in The Hackerspace Blueprint, is rooted in the philosophy of proactive participation. As Hackerspace Gent articulates, the ethos is straightforward: if a task or project doesn't irreversibly impact the core infrastructure of a space, individuals are encouraged to "just do it" and then discuss it post-action, resolving any complaints through dialogue or reversion if necessary [2]. This approach, prevalent in the hackerspace lexicon [8][7], traces its origins to the Burning Man festival around 1996, a renowned art event characterized by its gift-based economy and ethos of personal participation and civic responsibility [13][14][15][18].

In parallel, open-source software communities, like Debian, also embrace do-ocracy, allowing individual developers significant autonomy over their work [1]. This governance style is appreciated for lowering barriers to contribution and contrasting starkly with consensus models, which can lead to protracted discussions on minor details [3][4]. However, do-ocracy is not without challenges, particularly in managing and controlling critical infrastructure, which may align with individual interests rather than the broader community [26].

Hackerspace Gent, for instance, mitigates these risks by incorporating as a non-profit with a board capable of resolving conflicts and protecting the space [5]. The guiding principle is simple yet profound: start a hackerspace with a clear focus, like inclusive sound hacking , and build a community through social networks vital for negotiating space and tools acquisition. When evaluating success, we suggest using the principles of "critical publics that, rather than take for granted the homogeneity of participants in collective processes, parse out their differences, make clear why they matter, and identify opportunities for convivial collaboration."

We suggest starting a conversation with the organizers about the following subjects:

- How will we control access to dangerous or fragile tools?

- Who are the people at the margins we might be disenfranchising?

- How will we assess our effectiveness both qualitatively and quantitatively?

- How can we be community led and make sure people are not speaking for others?

- How can we ensure that all members can strive for agency, fulfillment, identity, equity, empowerment, social justice[22]

We suggest that the members of an inclusive space follow the three simple raver's rules :

- 1.Respect personal boundaries

- 2.You are responsible for your own experience

- 3.The interplay of these two rules defines everything else [6]

Creating a code of conduct for a hackerspace that centers on inclusivity is a vital step in fostering a welcoming and diverse community. This code should emphasize respect, equality, and acceptance of all individuals, regardless of their background, skill level, or personal identity. It should explicitly prohibit any form of discrimination or harassment, promoting a safe and supportive environment for everyone. Members should sign a contract which includes a commitment to the principles of the organization. In every aspect, from the physical layout of the space to the projects and events hosted, inclusivity should be a key consideration, ensuring that the hackerspace is accessible and welcoming to all who wish to learn and create. It takes active effort to center inclusivity, and it is not a one-time effort–inclusivity is a process and the code of conduct should be regularly assessed to ensure it is meeting the needs of the membership.

6. CONCLUSION

The success of an audio-centric hacker space is contingent upon a dynamic interplay of fundraising, technological acumen, community engagement, and a commitment to self-reflection. Leadership must distribute the responsibilities of nurturing both the space and its occupants ensuring that the space is welcoming to newcomers and meets the needs and expectations of its users.

7. ACKNOWLEDGEMENTS

8. ETHICAL STANDARDS

This paper was a collaborative effort that included contributions from both faculty and students at The Tangible Music Lab, Institute for Media at the University of Arts Linz. All student authors are listed as co-authors on this paper to rightfully acknowledge their contributions. This was a voluntary part of the course; not all faculty and students participated.

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