

CIEL: COLLABORATIVE ENGAGEMENT TO REDUCE DEATHS FROM OPIATE OVERDOSE

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ABSTRACT

Themed around “design for health and wellness”, undergraduate industrial design and masters of health design students undertook a design challenge to create responses to the opioid crisis. Engaging directly with the idea of context and with a range of stakeholders, this design challenge provided an opportunity to develop a framework for a learning experience inclusive of underserved, marginalized, and stigmatized groups.

Keywords: Health Design, Design Process, Problem Based Learning, Stakeholder Engagement

1 INTRODUCTION

In 2016, opioid-related overdoses claimed the lives of 865 individuals in Ontario, a 19% increase over the previous year [1]. According to CIHI (Canadian Institute for Health Information) in 2016–2017, there was an average of 16 hospitalisations each day for opioid poisoning in Canada [2]. The crisis has claimed over 69,000 annual deaths worldwide and does not discriminate between adults, men, women, and adolescents [3]. It is the leading cause of accidental death in North America, and can be attributed to the use of prescription and non-prescription painkillers, morphine, heroin, tramadol, oxycodone, methadone, and fentanyl [2]. Opioid-overdose can be averted by the timely administration of Naloxone, an opioid antidote [4]. Both undergraduate and master's students responded to the challenge of opiate overdose through a structured learning experience. Amongst the solutions proposed by students were a ‘how to’ guide’ for pop-up supervised injection sites (SIS) by graduate design students, the direct result of close collaboration with the SIS at Moss Park, Toronto, and products and systems to make Naloxone kits visible, accessible, and designed to break stigma, by undergraduate students from Industrial Design, including systems for distribution of naloxone in public libraries, washrooms, and music festivals.

The design challenge was articulated differently for the undergraduate and graduate students, with the graduate students’ goal of conceptualizing and developing a design response to the challenge of overdose more broadly, and undergraduate students conceptualizing and developing a design response to specific contexts for storing and offering Naloxone kits in an accessible form. The specific contextual pockets were chosen based on where drug overdoses are abundant. The graduate students worked with a 12 week time frame and the undergraduates, a condensed eight-week design challenge format.

In this paper, we will explore the use of an integrated learning framework CIEL (Community Integrated Engagements for Learning) for engagements with communities outside the classroom in which students are active participants in change. The framework was informed by co-design approaches [5], and by principles of student centered learning [6], in which students are co-creators of knowledge in research and in their own learning, whereby transferable skills can be fostered such as problem-solving, critical thinking and reflective thinking. Skills that are integral to critically engaged contemporary product design education

CIEL has several components that we would like to highlight in this paper, contextual engagement, the involvement of community members as subject matter experts, knowledge transfer, and

destigmatization. We also highlight some of the practical considerations that have emerged in our experience with the use of CIEL.

2 CONTEXTUAL ENGAGEMENT

One of the features of this integrated approach is connection to communities that are local to the student experience at OCAD University. This is motivating for students, breaks down some of the perceived or real barriers between academia and community, and provides opportunities for practical application of design techniques in real world scenarios. The choice to frame the design challenge as both a spatial and product challenge was deliberate, intended to provide competency building in the articulation and integration of contextual factors in design. For undergraduates, this translates into the application of observational skills, building transferable skills in negotiating access and working with community subject matter experts, and the development of context mapping and analysis techniques. The careful identification and selection of underserved places for opioid response at the onset of the project facilitated student learning. It also grounded the project and provided a strong design boundary that was accessible to the students and gave them direct spatial feedback as they were conducting observations, role playing and implementing their prototypes. The identification of the underserved space and gap in product offering by the faculty developing this specific curriculum propelled innovation in student work and created strong public and industry interest as a result.

For master's level students, the contextual aspect included responding to timely and emergent themes in the opiate crisis local to Toronto without constraining the topic within this theme. This translated into the integration of systems level design [7] thinking techniques in order to locate a design response within a larger system of public health, and the political and social context of overdose. With a much wider initial context, the master's students were also tasked with identifying a focus area or boundary for their own project - choosing the emerging SIS.

3 SUBJECT MATTER EXPERTS

The role of subject matter experts in the learning experience enabled deep contextual knowledge to be brought directly to the students, and facilitated movement of the students into the contexts themselves (the spaces and places relevant to the projects). In the case of CIEL the engagement of subject matter experts also encourages a type of accountability to the wider community in the context of the student projects. All students, undergraduate and masters, had access to a group of subject matter experts (SMEs), selected prior to the start of the learning engagement, who were also able to facilitate links to community groups and spaces. Subject matter experts were positioned as VIP visitors to the studio, their time carefully and respectfully integrated into the learning process at intervals throughout the projects. The use of subject matter experts as community representatives was also a tactical move to enable rich insights and community representation in a situation where direct user testing and engagement would not have been possible due to research ethics constraints and constraints in terms of participant recruitment, safety and sensitivity issues, associated with the topic at hand.

For the undergraduate industrial design students, the integration of the subject matter experts facilitated a sensitivity training and creation of a safe space for students to critically unpack stigma around drug use as well as have the opportunity to ask functional and user centred, sometimes personal questions around drug use and first aid response. Having the subject matter experts present for feedback at the conceptual and final stage of the project development offered the opportunity to address assumptions, gain feedback on human factors and functionality from experts, and above all gain insights of multiple perspectives on their projects that they were invited to integrate into the further development of their first aid response kits.

3.1 Subject Matter Experts: Setting the Stage

- Expectation management for subject matter experts. The expectations of the subject matter experts need to be explained clearly before the onset of the project. These include but are not limited to terms of time commitment, role within the project, definition on the set of expertise translated into a design learning context, possible outcomes, and intellectual property and basic understanding of terms should the project outcome be reproduced for commercial or non-commercial applications.
- Subject matter experts were involved at specific points during the design process – at the launch of the assignment to provide insights of the project scope, for sensitivity training in class, at the

concept stage where the subject matter experts provided feedback to students in which direction to consider, once before the project finalisation stage. The subject matter experts were attending the final in class presentation as well as being special guests to the public exhibition of the project outcomes generated by the students. Testing with end users was not part of the experience.

- Outcomes/giving back to SME's and community: When engaging in a collaborative project with subject matter experts it is important to consider how the SME's or other involved stakeholders/community members might benefit from the project. This needs to be discussed and decided on before the start of the project and resources allocated accordingly (finances, time, materials (printing and fabrication costs), exhibitions, conferences, publications)

3.2 Subject Matter Experts: Reflections on Roles

Some masters students were also volunteers at the SIS facilitated access as they were already trusted members of the SIS community - in some cases playing a dual role as SME and student.

Masters of design for health students were challenged to reflect on their role as 'designer' in a situation where community members were assembling a safe injection site (SIS) solution for themselves – reflecting questions raised in current discourse on co-design and allied approaches [8]. With a reframing of the role of design, the Moss Park site in Toronto served as a full-scale design experiment in which drug users themselves revealed their unmet needs through the configuration of their own solution but within the constraints of resource access, expertise, the realities of weather, site, and time. The project, for the design for health masters' students, was not to redesign what had been created by community members but to rethink design as a lens through which to analyse and abstract design requirements for community led safe injection sites, considering critical success factors for adaptation and scale. Further, a combination of community engagement through close ties with volunteers, observations, and desk research, resulted in the identification of specific design requirements yet to be designed products that would support such a community based SIS. The master's student's work extended to position pop-up safe injection sites within a range of harm reduction strategies, provide accessible materials for decision makers and community leaders considering the creation of a pop-up SIS, and specific service design considerations for volunteer involvement, locating these considerations with a service design model. Locating specific product needs within a service design provided a structure for students to consider design needs at any scale - for example, the design of SIS tents for use during poor weather and cold conditions, alongside requirements for a pivoting chair for better supporting the administration of naloxone during first aid.

4 KNOWLEDGE TRANSFER

By integrating an issue of topical relevance and local applicability into the curriculum, it is possible for students to experience real impact of their work - both in terms of the collaborative design process with subject matter experts, and by realising actual designed outputs for exhibition and/or for use in context. CIEL emphasises the potential or knowledge transfer through exhibition, commercialisation and/or donation.

The undergraduate students produced prototypes donated and/or exhibited in a public venue in order to enable knowledge transfer to a wider audience/ the public. Students also produced movies showing scenarios of use for each prototype. The movies had two components, the first one was situating their research observations and findings in the current context where opiate overdose is often happening without having accessible first aid kits at hand (public bathroom, bars, music festival) and the second part explained the scenarios with their product responses in context showcasing how this would allow the timely response to aid a person in opioid overdose.

4.1 Knowledge Transfer: Exhibition

To disseminate the project both undergraduate Industrial Design and graduate Design for Health master's work was exhibited in a joint public exhibition as part of the Toronto Design Offsite festival in January 2018. The Toronto Design Offsite Festival (ToDo) is Canada's largest cultural celebration of design with over 100 exhibitions and events forming Toronto's design week celebrating contemporary culture and providing opportunities for emerging talent, and engages the community with exceptional and accessible public programming [9].

This venue was deliberately chosen in order to bring the urgent and emerging topic of opioid crisis into the broader public discourse and broaden the scope of design as a vehicle of response. The exhibition titled “Designing for Health, Wellness, Action and Destigmatization” received over 700 visitors, garnered wide ranging media coverage, and received two design awards, including the prestigious Herman Miller juror’s choice design award [10], and noted as one of the 10 best exhibitions of the 2018 Toronto Design Festival [11].



Figure 1. Design Exhibition as part of the Toronto Design Festival 2018

4.2 Knowledge Transfer: Scaling

Also, integral to the CIEL approach is consideration for how project outputs might live beyond the educational experience. At the exhibition opening, representatives of the University incubator were invited for project “pitches”. By introducing opportunities for further scaling, distribution and commercialisation, students are provided with outlook and tactics on and connections on how they could further develop and implement their work beyond the classroom, should they decide to do so. Through the press coverage and the presentation format of a project pitch, students got invited to share their work with a medical industry partner.

By publicly sharing the project outcomes at exhibition, introducing students to the next steps of project scaling and implementation, the intention is to honour student work, empower and enable design students towards taking their design studio work beyond the classroom into a professional/ commercial/ public setting. By pointing out the next steps of further potentials of research and commercialisation students are exposed early on to the idea, potential of becoming entrepreneurs and socially- by understanding the positive impact that design can have on global issues- and financially benefit from the work that they produce during their studies.

5 DESTIGMATIZATION

5.1 Destigmatization: Student Experience

To create a safe environment that is conducive for learning as well as respectful to the subject matter experts given the challenging topic area (opioid overdose) the following factors may need to be put in place:

- Sensitivity training for students in form of a workshop with a subject matter expert. The workshops intent is to create a safe space in which undergraduate students can engage with the topic, asking questions, unpacking stigma through a collaborative and critical reflection on how the health challenge is visually or formally communicated and manifested
- The provision and review of resources for students at the start of the course that includes research relevant to stigma [12], including, for example, language and image use[13,14], and any accessible research [15] that will help guide students in their approach.
- Competency training for faculty members. When engaging with a marginalised community it is pertinent that the faculty member running the course is familiar with the appropriate language to use. This can take the form of formal training as well as conversations with the subject matter experts on perspectives and challenges.
- Risk mitigation: Faculty members need to be trained in appropriate response and access to

resources should a student or a subject matter expert discloses a personal challenge with the subject at hand.

5.2 Destigmatization: Student Experience

While visual and written language may not be the focus of the training experience of a student of product design, introducing a critique of the current visual language around drug use and overdose was chosen as a starting point to introduce students to three key elements of the learning experience - the topic of overdose itself, the topic of contextual integration and systemic relevance of product design, and thirdly how design and aesthetics can be used to destigmatize. The dominant written and visual language of drug use and overdose is currently overwhelmingly negative in its tone, invoking dark alleys, dirty surroundings and dirty people, a language of hopelessness and marginalisation that serves to further stigmatize [12,14,15]. The CIEL approach and the topic chosen enabled design and aesthetics to be used to destigmatize and broaden the social impact of industrial/product design. This was achieved through guided critical reflection and dissemination of text, images and stigmatizing media portrayal of the overdose crisis as explained above; the positioning of the design outcome in context; physical and formal design qualities; and dissemination. Destigmatization was addressed by students directly in their projects, for example, creating a first aid kit that draws visual attention through the way it is formally designed to stand out and positioned at a bar, accessible both for bar staff and bar guests, it is intended to spark conversation about the overdose topic and how it cuts across a large section of the society while at the same time educating the broader public in how to provide first aid when encountering someone in overdose. Subject matter experts were involved at several points in the process to provide students with feedback on aesthetic choices, portrayal of overdose setting and scenario, language use and material prototypes, thus providing direct feedback on whether destigmatizing intention of the projects had been met. Prototypes were not tested with drug users or other members of the lay public.



Figure 2. Naloxone kit for bars final prototype

6 CONCLUSION

CIEL (Community Integrated Engagements for Learning) was developed for engagements with communities outside the classroom in which students are active participants in change. We chose the topic of opiate overdose as an urgent motivating topic, and to illustrate the potential for both real world and educational impact of engaging in contextually informed project work. Using a framework such as CIEL deliberately broadens the scope of industrial/product design to go beyond addressing functionality and usability criteria by using the power of design and scalability to position the discipline for impact on public social and health discourse through design - a positioning of design we want our university students to be aware of and carry on through their professional practice.

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