

Virtual Reality & Youth Incarceration:

Methodological Reflections from a Media Education & Research Program

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Introduction: Anti-oppressive media education & VR

This paper presents a reflective and analytical discussion on the success and challenges to creating, implementing, and researching a virtual reality (VR) art design program in a juvenile rehabilitation centre (JRC). The research aimed to provide young people in a JRC with access and exposure to VR as a growing media technology industry. The research also aimed to better connect our public library partners to the JRC school, to offer media education that was fun and engaging, and to introduce the digital arts to participants as a potential career path.

In this paper, we identify carceral logics that circulate within the institutional systems governing the research site, the on-site school where we worked, and the ethical approval process necessary to conduct research in this setting. We contend that these carceral logics define and determine not only the work that can be done in this type of setting, but also the research outcomes vis-à-vis what kind of learning can ensue. This paper addresses the systems that impact educational research in a juvenile rehabilitation centre. We are asking: What is the relationship between circulating carceral logics and media education research efforts involving virtual reality and

incarcerated youth? What are the practical, educational, and theoretical considerations necessary to do this type of research, from a methodological perspective?

Over the course of one year, we created a VR curriculum focused on art-making. We delivered the program to girls and boys in partnership with local public libraries, including the JRC in-house school library. We aimed to study the value of the program and its participatory design elements through qualitative research methods.

In this research brief, we describe this process and its implications for doing participatory research in the logistically regulated environment of a youth prison. This paper offers insights into similar educational research projects for educators, advocates, and library and information professionals. Importantly, we reflect on the interwoven systems of oppression that interact with research and media education efforts in this environment.

Literature review: VR, libraries, art & systematically oppressed groups

Research on arts-based interventions for youth in the legal system show a positive relationship between arts-based activities and participant attitudes and behaviors, including digital programs in photography and video (Development Services Group, 2016). Our work is situated against a rich backdrop of existing media education interventions with young people who have been incarcerated, including digital storytelling (Morris, 2018), mural painting (Holler, 2019), and music creation (Kallio, 2022; Hickey, 2018; Venable, 2005). Some media arts programs have taken a prevention, intervention, transition, and healing approach with young people (Quillen, 2020). For example, the Young New Yorkers program focused on employing restorative justice

principles via digital storytelling to allow youth to frame their own narrative discourses about their lives (Morris, 2018). In a rural community, another program sought to bring together community members and young probationers through painting large-scale murals (Holler, 2019). Recently, researchers have also argued that not all arts-based interventions are effective, highlighting how some programs may further perpetuate corrective frameworks and systemic inequalities (Kallio, 2022). Our work builds on these past efforts with young people by engaging with design practices and adopting a community-based approach.

Teng and Gordon (2021) also describe the potential for VR to support mental health, specifically related to reducing anxiety for women leaving prison and re-entering society. Teng and Gordon's (2021) work, like ours, draws on Participatory Design (PD) practices to involve institutional staff, researchers, currently and formerly incarcerated women, and community organizations in a VR design program (Yip, Sobel, Pitt, Lee, Chen, Nasu, & Pina, 2017).

Teng and Gordon identify how realistic experiences can be captured in VR to support women's reentry when their own experiences and concerns are incorporated into the design process. The authors also address the limitations and challenges to pursuing a PD practice in the deeply regulated environment of incarceration. These challenges include limited access to participants, attrition, and the need for support from high level administrators. In this research brief, we contribute an analysis of our educational and methodological work by focusing on how carceral logics influence and inform possible outcomes for VR, digital media education, and juvenile rehabilitation research and programs.

Methodology at work: Technology programming in juvenile rehabilitation

Anti-carceral logics

Carceral logic can be defined as the ways in which the idea of imprisonment shapes behaviors, beliefs, and social systems, and the multiple ways injustice is encoded into laws, practices, technology, and technology systems (Benjamin, 2019). These structures are deeply ingrained and prevalent in contemporary institutions, including schools (Alexander, 2010; Foucault, 1977), and infiltrate many aspects of daily life. In this paper, we aim to demonstrate how carceral logics at different institutional levels interact with media education research. We discuss what this means for learning and knowledge development in the domains of technology, young people, and incarceration (Foucault, 1977; Meiners, 2007).

In this work, we demonstrate how the institutional structures at our research site, within governing research bodies, and particular research design choices (sometimes unwillingly) are complicit in perpetuating systemic opacity and limiting efforts to bring digital arts to incarcerated young people. Additionally, we demonstrate how participatory research methods are hindered by carceral logics in place at the institutional level. According to feminist scholar Sandra Harding (2009), “how one interacts with the world around us both enables and limits what one can know about it” (p. 403). We aim to demonstrate how and where research design impacts what we see and how we are able to understand and reconcile with these realities, if at all, in the scope of the burgeoning domain of VR.

Research design

For this project, we integrated the community aspects of Participatory Action Research (PAR) (Hayes, 2014) with Participatory Design (PD) techniques (Walsh, Foss, Yip, & Druin, 2013) known to be successful for co-creating with disenfranchised groups. These include working with community members, recognizing local knowledge, respecting local practices, grounding our knowledge in feminist practice and critical theory, and giving back. We incorporated elements of co-design into our methods and into the development of our educational program. These involved exploring how to create VR of interest to and with participants. The project proposal and funding involved the JRC school principal and public librarians who had worked in the JRC previously, ensuring that we had connections to the setting and community already in place. We sought further participatory engagement from youth participants and VR industry members wanting to work with incarcerated youth to develop skills in the digital arts.

Our intended data collection methods included observational field notes of participatory design activities; interviews with school educators, librarians, and youth participants; and visual data in the form of material and digital art and designs created by participants. Our aim was to conduct interviews and focus groups with participants and educators at the school before, during, and after the program to involve them in each stage of the project. The project culminated with an exhibit of participants' art made in VR and about VR. This exhibit was displayed in the regional local library near the JRC. In the following text, we describe how this project unfolded.

Program overview

The VR educational program involved 24 participants ages 12 to 22. Of these participants, 22 were boys and two were girls. There were 12 participants at a time for two hours, twice a day (9

am-11 am and 12 pm-2 pm), and eight modules run over one month in May 2019. There were four or five facilitators at all times, including faculty, graduate students, team members from the public libraries, and JRC school staff. The high ratio of facilitators was a huge advantage to the program's success, and the near-peer mentorship with graduate students was celebrated by participants—who thought they were all “cool.” This practice has been well-documented in other types of youth media education studies (e.g. Dahya, Fong & Jenson, 2017).

Our targeted outreach to girls went on for a month before the project and throughout the first week of the project as well, to no avail. The explanations we received from students and staff were: (1) only one-quarter of the total incarcerated population were girls and, (2) that girls were more focused on their formal schooling and extracurricular activities than boys. We were unable to discern the accuracy of the gendered commentary about girls' engagement in school. One girl who consistently came to the project suggested that girls were hesitant to participate in technology and “gaming” programs. This points to expected barriers for girls related to the masculine culture of technology (Wacjman, 1991). This gendered division is also evident in wider public library studies in Washington State (Dahya, King, Lee, & Lee, 2021; Lee, King, Dahya, & Lee, 2020); it is also a well-documented phenomenon and contested stereotype across gaming cultures (Fisher & Jenson, 2017). In the end, we conducted 13 interviews with teachers, staff, and the principal, as well as one focus group discussion with three program participants. Due to low acquisition of participant consent, we are unable to analyze and share details of onsite activities and outcomes. In this paper, we focus on the development of both the educational program and the study, with an emphasis on the regulatory limits and carceral logics in research and practice.

Implementing educational research in a JRC

State level ethical review

In Fall 2018, one of our first steps was to complete the Washington State IRB (WSIRB) application. This administrative process was detailed and extensive, requiring individual information, CVs, and criminal records of all personnel involved. During this time, we were also building local professional networks related to technology education and VR social enterprise to support incarcerated youth. The state IRB required all partners to be included in the application from the start. This significantly shrank our network-building time because all collaborators had to be secured at the time the application was submitted in November 2019. Additionally, following WSIRB approval, the entire team needed to submit volunteer status applications to enter the facility. It took until April 2019 to secure these various levels of permission to enter the facility as researchers. The educational program itself did not need WSIRB approval and was scheduled for May 2019.

In consultation with our partners at the school, we requested verbal consent from parents for research. The young people in this facility came from across Washington State. Their parents did not always visit regularly, making written consent extremely difficult to secure. Our request for verbal consent from parents was denied by the WSIRB. We are not questioning the decision of the IRB in this case. We simply note that the regulations for working in a JRC, in this case, needed a much longer lead time to build co-design opportunities and that these conflict with funding timelines and educational planning from within the JRC school. These practices are derivative of carceral logics - these systems exist in some combination of tensions between “protecting” youth

and volunteers by surveilling all parties. The implicit fear or concern is to engage in these levels of assessment and permission to enter, to avoid illicit behavior that needs regulation, and to prevent further harm to incarcerated youth. In our case, the regulations (also) constrained opportunities to understand the setting and involve participants in more meaningful ways.

In April 2019, although we were partnered with the school principal, senior administration at the JRC facility surfaced new concerns about potential risks regarding the impact of VR to participants' health. No specific health risks were brought to our attention. Rather, it seemed there was a fear around the use of this technology broadly. One of the psychologists on staff served as an advocate of the project. He was more familiar with VR and able to communicate directly with senior administration about potential hazards/risks of VR. Similar to Teng and Gordon (2021), we had a relatively high-ranking administrator who supported the program and helped navigate the institutional requirements, and without their support, the program may not have been approved at the facility level.

The bureaucracy at the JR institution involved the state level procedures, the facility administration, and the school. The distributions of power across these various layers were sometimes unclear, making it difficult to create direct and open lines of communication across involved decision-makers. This logistical and political matrix is reminiscent of Bentham's panopticon, where carceral logics are at play. The "central tower" of power is figuratively located within these institutional systems, watching and making decisions for and about our work. Yet, the assessment is "unverifiable," with layers of obscurity between what we could see and the decisions being made (Foucault, 1977). In these ways, the institutional structure of WSIRB acted

as the watchtower, replicating carceral logics that had a critical impact on the kinds of research we could conduct and power being centrally located and obscured by bureaucracy.

Creating anti-oppressive curriculum in educational research

Co-creation and regulation

As the reality of regulatory restrictions emerged, we were faced with difficult questions about how to proceed. One option was to wait until the following year to offer the program, and to spend more time trying to secure informed consent from participants and their parents, prior to co-designing the curriculum. However, we had made a commitment to our partners at the school to offer this program as a supplement to their arts curriculum, which they had requested due to a shortage of media arts teachers at that time.

In this case, delaying our educational commitment to pursue our intended research strategy seemed to prioritize our research interests *over* the needs of the community we aimed to serve. Meiners (2007) articulates the complexities of working as an educator, researcher, and volunteer supporting incarcerated people. In these settings, finding the balance between prioritizing relationships with institutions and individuals to build trust and serve the community is critical. For our teams' pre-tenure faculty, the pressures to do research, collect data, and publish was also present. We engaged in difficult discussions about our commitments to the young people and our partners at the JRC school. Following these deliberations, we decided to proceed with curriculum design, albeit in a more conventional form—educators and researchers constructing a curriculum and delivering it as opposed to co-creating with participants.

Institutional rules and participant wellbeing

The school principal organized a site visit for us to see and become familiar with the school and library while our WSIRB application was still in review. We took a tour of the grounds but were not able to interact directly with students. During this orientation, we were briefed about school and facility rules and regulations. Volunteers and teachers are not allowed to talk to JRC residents about their lived experiences, histories, or lives outside of their current incarceration. During our program, if a participant brought something up, the adult was required to stop or change the conversation.

Participants wore plain clothes like jeans and t-shirts on most days. However, if a participant engaged in an act of violence against others or was at risk of self-harm, they wore orange and yellow jumpsuits. Art materials needed to be counted in and counted out daily. Any missing materials, even a single pencil, would result in a classroom lockdown. This could lead to strip searching students if the item was not found. Sharp objects like scissors or metal paper clips were not allowed on school grounds.

As we developed the curriculum, we considered these additional parameters. We had no guidelines for selecting content, except to avoid violence and use games, films, or experiences that worked well offline. As a team, we carefully assessed potentially traumatic content. In one example, we found a beautifully animated VR adventure that opens with your avatar walking alone on a dark road at night. Our team discussed scenarios like escaping domestic violence or homelessness to consider how people with varied life experiences might encounter this VR setting. As Teng and Gordon (2021) suggest, commercial VR is not made for incarcerated

people, or arguably, with the experiences of vulnerable populations in mind at all. The limitations of working with existing VR games, as opposed to being able to create our own VR experiences, were clear and limiting.

Two regulatory forces were at play here. The first being the rules of the institution and how this framed our curricular design. The second involved the regulation of our emotions and sense of responsibility as a team, to not incite further violence into this space. It was crucial for us to avoid either producing poor content or damaging participants' relationship with learning, research, schooling, libraries, and/or media making. It was also essential for us to avoid putting participants in a position where their already-difficult realities were made worse by way of triggering or creating trauma related to their historical experiences and current realities inside the JRC. Our reflection of these forces reiterates Kallio's (2022) call to acknowledge how juvenile justice institutions are not neutral spaces and how we must engage with the politics of these programs.

Designing flexible and dialectical curriculum

Considering these realities, we decided to focus the program on exploring two-dimensional (2D) and three-dimensional (3D) space using traditional art materials and in VR. Given the JRC's rules, it was important to avoid creating conditions that could cause regulatory problems leading to violence on/against participants, based on our curricular and material choices. We worked with drawing materials, paints, tear-away image collage, and foam blocks to construct 2D and 3D material environments. We also used offline art and world-making VR applications. We

designed a series of self-contained curricular modules—sessions that could be run as one-offs in case participants were unable to attend regularly (see Patino et al., 2021).

The regulations around sharing personal narratives pushed our curricular development further into this art and world-making space, and this complemented our desired pedagogical approach. Youth media education research demonstrates how a focus on narrative retellings about hardship, marginalization, etc. can re-inscribe these same realities for participants and for viewers, calling for more creative media forms that do not rely on personal stories (Dahya & King, 2020; Dahya & Jenson, 2015; Dahya, 2017; Fleetwood, 2005).

At the same time, the restrictions around sharing personal information also surfaced tensions during the program. Relationship building, validating, and witnessing the everyday realities of participants was made more difficult. For example, there were two occasions where a participant came to the program in a jumpsuit, which stands out in a room of plain-clothed educators and peers. In both cases, we were unable to ask participants how they were feeling or if there was anything they wanted to address through art, VR, or in discussions related to whatever was going on in their lives. We stood in the imbalanced position of knowing that these individuals had either harmed someone else or were at risk of self-harm, unable to do or say anything about it.

Dialogue is an important element of anti-oppressive curriculum, outlined by radical and critical pedagogues like bell hooks (1994) and Paolo Friere (1970). In these moments, a contrast was palpable. On one hand, we had an energetic group of young people making art and playing games, with their varied interests, skills, and opinions. On the other hand, we faced the silence

about their lives beyond the walls of the one-room library where we worked. The carceral logic behind the rule is part of a system defined by control, silence, and fear or repercussion for noncompliance for all parties involved – educators, researchers, and incarcerated youth.

In our assessment of this program, we can say that participants came regularly and for the full duration of the program. Engagement was evident through participant interaction with curricular modules and VR. In addition, the energy in the room was open, active, and enthusiastic. In her research interview, the school principal stated that the program allowed the participants to engage with each other in collegial ways that she had not often seen at the institution. The behavior of the boys involved was notable, as they lived in different residences, were affiliated with different social groups and gangs, and came from different ethnoracial backgrounds. Each program module was effective at generating the construction and production of art in VR and using traditional materials. In contrast to the picture of the participants and school painted for us during orientation, the participants attended regularly, followed curriculum and instruction, and were excited to see us for the entire program.

Public outreach, public libraries, public art

The final art exhibit of participants' work was designed to connect the local public with the facility and the participants there. It was also designed to encourage participants to reflect on their VR experiences. A team of Museology graduate students prepared this project in a service learning class and also worked as facilitators of the media education program. All participants agreed to display their work in the public library. The head JRC administrator approved the art exhibit as well. However, when the time came, field trips for participants were untenable. A lack

of supervisory staff, concerns about behavior, and the lack of resources for security and other regulatory support became hard barriers to the collaborative co-curation planned at the library. The team of museology graduate students installed the exhibit. This included participants' work, such as decorated Google Cardboard headsets, storyboards of VR story ideas, collages about their VR experience, and printouts and a digital display of VR art made in tools like Tilt Brush. We recorded a short video documenting the exhibit and the principal had a screening for participants. We also returned participants' art work to them, printed VR art for them, and created a thank you postcard collage for them to keep with information about the public library.

Research insights

Much of the insight gained from the onsite time with participants and their art designs is proverbially behind lock and key. We conducted 13 interviews with teachers, staff, and administrators and a focus group discussion with three participants. From this data, we noticed a dual perception from educators and staff. They expressed that youth came into juvenile rehabilitation with limited technology experience, focused on mobile phones and social media. They also stated that many of the young people were "tech savvy," having knowledge about how to "hack" institutional controls on school computers to access the internet and games.

One clear finding from these interviews was that the teachers, administrators, and staff had fairly basic technology literacy themselves. Their focus, justly so, was on supporting youth in the JRC through their social and emotional journeys, and on minimizing violence to the self and others. What happened to young people before and after their time at this institution was presented by interviewees as somewhat of a black box.

There also seemed to be a lack of knowledge among interviewees about the role of technology education, libraries, and museums in participants' lives. The rules limit what teachers and staff know, limit researchers' ability to talk or work with participants, and limit the contributions we can make to knowledge building in this example. The three participants discussed distrust of and exclusion from museums and libraries, as well as mixed interest in VR or digital art careers in the future. Drawing again on Meiners (2007), we consider how research in settings of incarceration reproduces institutional violence, rather than dismantles or exposes it, if all that we can share are the restraints and constraints on these participants' lives.

Emotional labor in educational research

PIs on projects like this carry an immense responsibility to the participants first and foremost, as well as to project partners, Faculty collaborators, and student researchers. Researchers are not only learning about educational research as a practice in curriculum development and data collection, they are learning about the ethos of working with systematically oppressed communities and the politics of incarceration. In this case, they are also navigating challenging conditions where children are penalized for society's failures to support them.

In these ways, the project resurfaced the importance of non-judgement and compassion, of checking our own analytical lenses, and of having ongoing, difficult discussions as a team to unpack these realities. These happened during lunch breaks, on our long car rides back to campus, or in team meetings outside of field work activities. These are necessary methodological components for anti-oppressive research in order to stand alongside incarcerated youth, with or

without knowledge of their alleged crimes. There are, to our knowledge, few resources or supports for researchers doing this work.

Concluding thoughts

Building relationships and navigating new and complex institutional environments takes time. It took eight months to even receive the WSIRB approval and start our work. Not-for-profit and community organizations have long known that short-term, competitive, external funding models are inherently contradictory forms of support for community development and social justice initiatives. This proves to be equally challenging for community-engaged research and for initiatives that are participatory and educational, where relationship building and continuity are critical elements to success and to influencing change.

While we initially had our own ideals based on prior research, it was clear from the start that we needed to rapidly change our strategy. Within human-computer interaction research, improvisational action has become a way for researchers to adapt design methods in changing and shifting contexts (Kang, Jackson, & Sengers, 2018; Lee, Roldan, Zhu, Saluja, Na, Chin, Zeng, Lee, & Yip, 2021). Under improvisational action, five key themes exist. *Reflexivity* is the constant and active reflection taking place during experiences. *Transgression* is the invitation of unseen and uncertain factors. *Tension* is about balancing structure (planning) and freedom (surprises). *Listening* looks at how to have dialogic exchange with participants and stakeholders. Finally, *interdependence* is the co-construction in the relationship between the actors and the context. Putting these five themes together, our research and design needed to consider inquiry as improvisation, particularly when it meant designing and learning together with incarcerated

youth (Lee et al., 2021). Moving forward, we call for tighter collaborations between the designers of emergent technologies like VR and the leaders of these institutions, multi-year funding opportunities, stronger cross institutional communication plans and channels; and critically, we further advocate for centering the voices of incarcerated youth in the design of research and technology products.

Prison abolitionist Angela Davis (2003) says, “This is the ideological work that the prison performs—it relieves us of the responsibility of seriously engaging with the problems of our society, especially those produced by racism and, increasingly, global capitalism” (p. 16). Technology is implicated and embedded in this ideological framework, and the function of carceral logics are continually re-inscribed through the systems that we use and through capitalist structures that technology reproduces and upholds. Conducting a VR program with incarcerated youth falls squarely within this capitalist frame, promoting tools and an industry fraught with carceral implications while simultaneously trying to interrupt it (Benjamin, 2019). We emphasize the need for technology education and digital literacy programming for incarcerated youth to also expose the ideological work both prison, research, and technology can perform. More expansive and nuanced descriptions of efforts, process, successes, and failures are needed to further distill and disrupt the institutional regulations shaping research design and outcome, and, constraining our knowledge and understanding of incarcerated young people with regard to technology.

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