Democratic Design

Creating diagrams to draw young citizens together

By April Xie

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Democratic Design: Creating diagrams to draw young citizens together
Master of Design, 2018
April Xie
Digital Futures, OCAD University

This research explores the possibilities of a democratic design process, in which technology is not treated as a solution to the civic apathy of young people, but a social construction with embedded values that young people negotiate with their own, as a way to draw themselves together as publics. This will be explored by creating a participatory multimedia-making program for young people, in which critical literacy around data and diagram production is fostered as a form of representation they can consider for articulating civic concerns relevant to them. The resulting program, Rise and Visualize, included eight young people and was hosted in partnership with For Youth Initiative between November 2017 to February 2018. The focus is on the engagement process and issues in design participation, therefore the design prototype being presented is the resulting process framework and case study, rather than artifacts created by the young people in the program.

Keywords: politics, participation, visualization, data, diagrams, representation, youth, civic engagement, participatory action research, design methods, digital media, civic media

Acknowledgements

They say it takes a village. The constellation of people, ideas, energies, and supports that enabled this project to come into being is beyond description, and I humbly attempt to acknowledge some of it here.

To the Rise and Visualize team: Derek (Ly Gia) Thinh, Ayomide Salami, Kokob Hagos, Sharifa Mahkseem, Ransford Bendu, Bora Erden, Charlotte Birungi, and Hieu Nguyen. Thank you for embarking on this journey with me. To *For Youth Initiative* for welcoming me into your space. To Mamawah Kaindaneh for taking a chance on this project and helping secure space, funding, free bus tickets, and food for the team every week.

To my Primary Advisor Dr. Patricio Davila for demonstrating that it is indeed possible to combine several obscure interests, and find the area of study I had always wanted to pursue. It has been a most rewarding year thanks to your passion, guidance and expertise. To my Secondary Advisor Isabel Meirelles for your expertise and attention to detail to help me push the work as far as it could go.

To my Digital Futures cohort for being the most talented and kind-hearted bunch I've yet to meet. It's an honour to be counted amongst you. Thank you to the Digital Futures faculty and students for all you have taught and shared with me. Special thanks to Immony Men for your unwavering support. Special thanks to Reza Safei for helping us turn our ideas into reality, no matter how grandiose or last-minute. Special thanks to Dr. Martha Ladly for your confidence and advocacy since day one. Thank you to Marcus Gordon and Jon Silveira for your support with video documentation and installation. Thank you to OCAD University for partially funding this research through the Dean's Scholarship and Graduate Scholarship.

To my family, Andrew, and my loved ones, this could not have happened without you.

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Chapter 1: Introduction

(1.1) Context

Democratic nation-states have been experiencing growing citizen disengagement with its traditional state institutions. The steady decline in voter turnout, a key proxy indicator of civic engagement, has been well-documented globally (Turcotte, 2015, p. 1). Especially troubling is the fact that the largest demographic contributing to voter decline is young people (Turcotte, 2015, p.1), whose engagement in the present is a looking-glass into the stability of state institutions in the future.

Over the past decade, governments have increased attempts to reach young people through opportunities afforded by digital technologies and the internet. For instance, focus has accelerated around opening digital access to government-collected data to the public, to promote civic engagement.

This enthusiasm for *open data*, the cleaning, machine-readable formatting, and distribution of government data under free-use licenses online, can be felt across democratic jurisdictions looking to modernize their interfacing with young citizens in the digital age. One may point to the *Open Government Initiative* released under Barack Obama's U.S. administration in 2013 as an example, whose objective is to "empower Americans to make Data-Driven Decisions" (Honey, 2016). A quote from the initiative's project web-page summarizes the ethos of open data culture:

> Open data from the U.S. Government is **an important national resource**, serving as fuel for innovation and scientific discovery. It is central to a more efficient, transparent, and collaborative democracy… President Obama [is committed] to ensuring all

Americans reap the benefits of public open data... **(emphasis added by author)** (Honey, 2016)

In result, a global industry has been created around open data culture, with particularly ripe opportunities for highly-skilled UX designers, developers and thought leaders in the digital technology sector. The pipeline of competencies through which the resource, *data*, may be converted into social capital by citizens, in this case, *knowledge*, is the practice of *visualization* (i.e. the visual communication and display of abstract data via encoding to graphic variables, to create *diagrams* such as graphs, maps, and charts). The logic is that by making user-friendly tools available to help the everyday citizen visually represent data, the patterns and insights data have to offer about civic concerns may be illuminated, thus empowering them with knowledge to engage more fully in democratic society.

This argument follows the libertarian spirit of access to technology as inherently promoting individual liberty and capacity to participate in civic affairs (Johnson, 2014). However, although the open data movement is still young, there is already a growing disconnect between this claim and reality. Rather than citizens, the majority of those harnessing open data for analytical insights and creating digital applications have been state bodies and corporations with high-skilled workers (Johnson, 2014, p. 267). As a result, the resource of open data has been utilized for profit more so by those who created the need than those who supposedly were in need.

What makes the described logic problematic is its orientation to *technological determinism*. The assertion that access to technology directly leads to human agency assumes technology to be a neutral, inevitable force that society must conform to and keep up with. This view overlooks the social conditions in which technologies are created, and the world-views they privilege around how they are to be used. Data and its visualization are not neutral forms that everyone may benefit from equally; they are socially-constructed technologies that privilege particular purposes, competencies and biases among many possible others (Johnson, 2014, p. 264). To

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rationalize that technological progress is the natural direction society will take and is good for everyone so long as they *keep up*, is typical of "groups with power and influence [who] often equate their own interests with public interests" (Mirra and Garcia, 2017, p. 131).

As a result, a divide is exacerbated between those whose skills, interests, capital, race, ethnicity, age, and class are privileged via the design choices embedded in these technologies, and the remaining majority who are not. When lack of uptake by the majority is met with a shrug by the minority because *they nonetheless have access*, the majority is left feeling they have only themselves to blame for being further left behind.

There is potential for data and the production of diagrams as a tool in civic engagement, but it is not enough to simply provide access to *open data*. If we are genuinely engaged in the project of *civic engagement in democracies* through data and visualization*,* we must pose questions of representation: how people in fact want to be engaged, how their worlds have been reflected, or not, through these technologies, and how the dominant application of these tools could be complicated and reimagined. In other words, a non-deterministic inquiry of the role of data in civic engagement considers how it may be negotiated with their existing life-worlds (Mirra and Garcia, 2017). This is an inversion of the typical approach to civic engagement in the technology sector, which tends to focus on developing tools in isolation, or educating people on how to use them.

Designers are central to this challenge, as our task is to guide the values by which our artificial worlds, *our technologies*, may be directed. Viewed in this way, design is a political profession, for it is through design choices that frames, biases and agendas are reflected in technologies. This thesis project looks to develop a process by which young people may be engaged as citizens with power and agency, via negotiation of how data and the creation of diagrams may

serve their agendas and their representation choices. It is proposed that such a design process may be undertaken through the vehicle of c*ritical literacy*, to facilitate and strengthen *publics*.

(1.2) Purpose

This research explores the possibilities of a *democratic design process*, in which technology is not treated as a solution to the civic apathy of young people, but a social construction with embedded values that young people negotiate with their own, as a way to draw themselves together as *publics*. This will be explored by creating a participatory multimedia-making program for young people, in which critical literacy around data and diagram production is fostered as a form of representation they can consider for articulating civic concerns relevant to them. The resulting program, *Rise and Visualize*, included eight young people in its duration, and was hosted in partnership with youth agency For Youth Initiative between November 2017 to February 2018. The focus of this thesis project is on the *engagement process* and issues in *design participation,* therefore the design prototype being presented is the resulting process framework and case study, rather than artifacts created by the young people in the program.

(1.3) Objectives

My objective is to work with young people between the ages of 15 to 24 to create multimedia projects as a way to explore their strengths, experiences, concerns, and hopes for the future, as a way of interfacing *bottom-up* from daily life to civic affairs. Ways to work with data and create diagrams will be critically considered as they relate to participants. The output of this process will be an installation for the 2018 Digital Futures Masters Thesis Exhibition that features the work of the young people involved, as *co-producers*. The resulting prototype of this research is a framework for designers to co-create multimedia as civic knowledge with communities in a reciprocal manner, rather than a deterministic one.

The primary question guiding this research is:

How can data and visualization be integrated into a   critical media-making process that promotes civic engagement with young people?

Secondary questions include:

1. What are the potential roles of the designer in participatory media projects?

2. What power and ethical dimensions must the designer navigate?

3. How can the sharing of technologies in the media-making process operate within a framework that is reciprocal, not deterministic?

(1.4) Rationale

Civic engagement in democratic societies encompasses the sense of agency and duty as a citizen not only in the political sense but also the cultural sense (Kotilainen, 2009, p. 244). Multimedia literacy production is a fertile ground for strengthening channels for young people to represent themselves as political and cultural agents. This approach to civic engagement recognizes the plural forms it can take, especially with the rich modalities of expression possible in the digital age. Designers and technologists can play an impactful role in this intersection between civic engagement and media creation, given their material skills in their respective practices. This thesis document provides an actionable framework and case-study for practitioners in digital media looking to offer their technical expertise in this space.

(1.5) Theoretical Framework

The theories informing this research draw from the ontology (the nature of reality) and epistemology (relationship between inquirer and the knowable) of social constructivism. This paradigm of knowledge considers reality not as an external and universally-observable phenomenon, but as a social construction created through dialogue and interpretation between subjects, their social conditions, personal experiences, and world-views (Gray and Malins, 2004,

p. 20). Social constructivism is positioned in counter to technological determinism in this thesis, in that it suggests there are infinite ways to interpret the use of technologies, and privileging a particular form is an assertion of power. Via social constructivism, Langdon Winner proposes an understanding of technological change not as *black box determinism* but as an arrangement of technical workings "shaped through various kinds of social interaction" that can be unpacked through analyzing a technology's *social history* (1993, p. 368). The social history and values that gave rise to the contemporary practice of data collection and diagram production will be described in the literature review, as way of situating the technological form as one possible arrangement of reality amongst those of the youth co-producers. Warren Sack's *aesthetics of governance* (2007) will be used in particular to describe the bureaucratic origins of diagrams, and how their arrangements of order promote bureaucratic or democratic publics. Paulo Freire's concept of critical consciousness (2000) is used to orient social constructivism to an actionable framework for applying technologies towards critical dialoguing space, in which oppressive social conditions are discussed, revealed and emerged from. Through these theories, this research takes the position that diagrams can be co-created with a democratic process that draws its participants together in a site of critical consciousness, towards civic engagement. This theoretical foundation informed the chosen methodology: Participatory Action Research.

(1.6) Methodology

Freire developed Participatory Action Research (PAR) methods via his observations from almost a decade of teaching Brazilian sugarcane workers how to read and write, before a military coup imprisoned him as a state traitor in 1964. PAR is a set of methods that follow the ethos of sharing power with participants as co-researchers of their own realities; the direction, topics, and forms of the resulting work are chosen by them. In this methodology, the researcher is not a removed observer, or *provider* of power, but a facilitator who works as an ally with

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participants as they galvanize knowledge and power amongst themselves. While primarily used as a qualitative-based method in social science, PAR is a well-suited framework to situate design methods within democratic frames. Particularly, Participatory Visual and Digital Methods are employed through co-design workshops with young people (Gubrium and Harper, 2013). Case study method is used to describe the workshops undertaken, as a qualitative, reflexive and contextual approach to ground the resulting design process framework.

(1.7) Scope and Limitations

This research investigates the role of the designer in co-design projects which aim to facilitate publics and view participants as subjects with power in their own right, rather than passive or ignorant objects. The literature review focuses on contextualizing data and visualization as social constructs, to situate their social histories amongst the world-views and agendas of the young people involved. Finally, this research will propose a framework for designers to create critical media literacy spaces, in which contemporary modalities of representation can be re-contextualized with underrepresented communities.

This research is not an ethnographic study on the opinions or attitudes of young people towards civic engagement, technology, data, or visualization. However, there are discussion summaries and quotes from members of the Rise and Visualize program featured in the case study that may allude to these topics. Neither does this research claim open government data is antithetical to civic engagement, or make claims for subjective experience over empirical knowledge. Rather, it speaks to ways in which designers can more reflexively negotiate between the two when working with underrepresented communities, through creating critical media literacy space that considers the advantages and limitations of both, within their contexts. I also treat *diagram production*, or *visualization* as a representational and expressive media

practice in this thesis, and do not explore visual cognition principles of diagrams, or its application to analytics.

The key limitation to this thesis project and its outputs is the usage of PAR methods within the context of Masters-level research in an academic institution. The time allocated for conducting Masters research is a fraction of what is required to build the deep relationships and sustainable impact desired in PAR. The Rise and Visualize program was created towards my agenda to attain a Master's degree, and certain representational forms of my choosing were given emphasis; given time constraints, program design was not able to involve young people from the beginning of its ideation. Despite the methodological ideal of having participants choose their topics and activities, what they were able to do had to be restricted considerably in order to receive clearance for research with human participants from the Research Ethics Board. For example, participants could not collect primary data outside the program space, due to the complications this would add to the REB application. These barriers have prevented more Masters-level research from being conducted in partnership with communities outside institutional walls.

Therefore, a contribution of this thesis is a demonstration of the potential and limits of academic research towards building sustainable impact with communities via PAR, given the bureaucratic hurdles that disincentivize such efforts. These limitations are discussed in more detail in chapters 3 (Methodology) and 4 (Case Study).

(1.8) Outline

This document begins with a literature review that describes *civic engagement* as the fostering of *publics* via Freire's concept of *critical consciousness*. Under this lens, young people are seen as civically active agents whose modes of participation are not recognized by state

bureaucracy. Then, it is argued that, via the collecting of data from citizens using problematic categories, then the visualizing of this data to amplify its rhetoric, state bureaucracy imposes identities that fragment publics as a form of control. The framing, collection and visualization of state census data is used as an example of how oppressive bureaucratic agendas can be reified into natural fact as an assertion of power.

I discuss the ways designers may engage young people to adopt diagrams instead as means of fostering *publics* towards civic engagement. I reference Freire's conception of PAR to inform a democratic design method. I will describe how the methodological ideals of PAR were negotiated with the realities encountered during this research to develop Rise and Visualize: a ten-week critical media literacy space at For Youth Initiative. I joined with participants to become a member of a team, to learn, create and advocate for youth matters. Case study method is employed to describe the bottom-up development of the *democratic design process* via cycles of action and reflection. The resulting output from the Rise and Visualize team is an interactive web documentary titled *In The Eyes of Youth*. Learnings from this process will be described, regarding the role, and opportunities, and limitations for designers looking to engage in similar work.

Chapter 2: Literature Review

The goal of this literature review is to describe how *democratic designers* may foster youth civic engagement by creating critical media literacy spaces for young people. The particular media practice focused on is data, and its visualization. Civic engagement will be defined as *publics*: spaces in which people gather to develop Paulo Freire's concept of *critical consciousness*. Our ability to construct representations of ourselves is an important part of fostering publics. In contrast, it is argued the state is concerned with creating contained bureaucratic citizenries that are easy to manage, which is directly at odds with the fostering of publics. The ways in which the state exacerbates this by collecting and producing diagrams of census data will be described. Finally, discussed are the opportunities for the designer to create spaces for young people to respond to diagrammatic representations that do not serve them, by making representations of their own.

(2.1) Civic engagement and young people

(2.1.1) Critical consciousness: representation creates liberating knowledge

As beings with the capacity for self-awareness, humans are able to break through the natural order of reality and artificially transform it for themselves. Freire argues the freedom to be human, or the pursuit of *humanization*, is therefore to be aware of one's perpetual incompletion and to continuously engage in the vocation towards it (2000, p. 26).

The enabler to this ability is what Freire termed *critical consciousness*: a reflexive engagement of "perceiving social, political, economic contradictions, and [taking] action against oppressive elements of reality" (2000, p. 20). The concept is based on the social constructivist worldview

that reality is created through dialoguing between subjective experience and the external world, as the two inextricably reflect and inform one-another.

Following this view, the act of perceiving oppressive elements of reality creates *liberating knowledge*, which informs new actions upon reality, which enables transformation. This is an endeavour of representation: the ways in which we see ourselves reflected in the world (i.e. perceiving reality) inform our subjectivities, and the representations we are able to create in response (i.e. subjectivity) are actions that transform the world around us.

(2.1.2) Publics: civic engagement as space for critical consciousness

"The temples, the Acropolis, the agora... were the ways the Athenians had invented to reflexively seize themselves as a totality living together and thinking together"
(Latour, as cited in Sack, 2007, p. 14)

The question of how relations of power may be constructed between people so they may co-exist in conditions of humanization is the occupation of politics.

Democracy is the system of government offered within contemporary western nation-states as an answer: it purports a power-relation in which the people govern themselves, either directly or via elected representation (demos, *the people*, -cracy, *rule by*). As the sustainability of democracy is predicated on active participation from the people in the affairs of society and governance, it must make spaces that enable citizens to name the social conditions in which they are embedded, and take action upon the world if those conditions are not serving them. The freedom to create this liberating knowledge is central to the functioning of democracy.

The term *civic* describes this community of democratic citizens, bound together by shared spheres of public, cultural, and political life (Mirra and Garcia, 2017). To engage civically in the democratic sense is to participate in *spaces* where critical consciousness can be galvanized around affairs that make up the sense of commonwealth (2017). These spheres of civic community will be referred to in this literature review as *publics*.

While the vitality of publics is often measured in proxy by voter turnout in democratic elections, they should equally, perhaps more importantly, be assessed via engagement in the informal, everyday activities within realms of culture and community that are "concerned with shaping the society we want to live in" (Vromen, as cited in Harris et. al, 2010, p. 10). It is within these informal community spaces that people are able to meet each other, exchange their interpretations of the world, and draw them together into larger positions concerning public life. These spaces in which to interface everyday experiences with societal concerns are the spheres in which civic engagement is fostered (Evans and Boyte, as cited in Richards-Schuster and Dobbie, 2011, p. 235).

Such forms of participation involve a range of activity from formal participation in democratic electoral systems, to cultural gatherings with members of a community in celebration of the freedom to represent oneself. No matter how seemingly small, all these acts contribute to the sense of co-existence in democratic systems.

(2.1.3) The spaces young people occupy

This right to participate in civic life extends to persons who are shy of, or newly of age in exercising formal voting power. Young people, or youth, are defined by Statistics Canada as persons between the ages of 15 to 24 (Turcotte, 2015, p. 1). Regardless of having reached

voting age, youth are entitled to the expression of citizenship and "the social right to participate in any decision-making processes that affect their lives" (Checkoway, as cited by Kim, 2016; p. 39).

The dominant representation of young people's engagement in civic life has been one of crisis, deficit and decline (Kotilainen, 2009; Richards-Schuster and Dobbie, 2011; Mirra and Garcia, 2017; Harris, et al., 2010; Turcotte, 2015). The argument most often made is that of the ongoing youth vote decline cited across democratic states (O'Neill, MacKinnon et al., as cited in Turcotte, 2015, p. 1).

Martin Turcotte's survey of Canadian youth civic engagement in 2015 echoes this dominant representation of apathy: youth were cited as the least likely to have voted in the 2011 election; they comprised the largest proportion of "politically inactive individuals"[1]; they were the demographic least likely to follow news and current affairs (2015, p. 3). The situation is bleaker when examined through immigration and education: immigrants were less likely to vote in the next election, and lower educational attainment was associated with decreased political participation (2015, p. 9).

However, youth were found by Turcotte to demonstrate high engagement in publics not readily recognized by the state. They were the most likely of all age groups to be "members of or participants in groups, organizations or associations" (2015, p. 10). They were the most likely to "participate at least once a week in group activities or meetings" (2015, p. 11). They were "as likely as older counterparts, if not more likely, to take part in political activities like marches or demonstrations" (2015, p. 6).

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[1] "Politically inactive" is defined as non-participation in non-electoral political activities and disinterest in voting for the next Federal election (Turcotte, 2015, p. 3).

What becomes evident is not that youth are inherently disengaged, but rather they do not identify with citizenry through state collectivist publics (i.e. the political vote). They have shifted to representing their civic identities through "informal individualized, everyday activities [that are regardless] deeply rooted in their desire to engage publicly" (Boyd, as cited in Harris et al., 2010, p. 27):

1. **Personalizing politics:** young people prefer to express themselves politically through choices in "taste, lifestyle, consumption, leisure" (Harris et al., 2010, p. 13). Hierarchical organizing is being replaced by interest in individual causes, and individualized forms of activism, such as computer hacking, culture jamming, brand boycotts, and recycling (2010). Music subcultures such as hip-hop and punk are also sites of political and social expression for young people (2010);

2. **Expression via multimedia:** young people are using the internet and social media to voice their social and political views in a more ephemeral sense, with the pretense that it will be viewed and engaged with by peer groups and influencers. Young people also express interest in engagement via multimedia production, especially regarding local issues directly related to them (Loader, as cited in Kotilainen, 2009, p. 250);

3. **Peer spaces:** The favoured participation strategies among young people are 'being heard' and having discussions with those within already familiar social circles, rather than engaging with electoral institutions. Social and leisure spaces are becoming increasingly important "as a site for peer-to-peer politicization for young people" (Pfaff, cited by Harris et al., 2010, p. 26).

These forms of participation are valid modes of civic engagement in the sense they are spaces for developing critical consciousness; the forms young people identify with have simply shifted in response to systems that are not serving them (Mirra and Garcia, 2017).

(2.1.4) Who counts as a good citizen?

This disconnect between youth modes of engagement and state representations of their apathy continues to be exacerbated. Through a comprehensive review of state measures of civic engagement, Mirra and Garcia developed a list of what they labelled *normative* measures of citizenship in the United States (2017, p.140), which can be generally applied to other modern liberal democracies:

TABLE 1
Normative Characteristics of Citizenship

- Belonging to at least one group
- Attending religious services at least monthly
- Belonging to a union
- Reading newspapers at least once per week
- Voting
- Being contacted by a political party
- Working on a political project
- Attending club meetings
- Believing that people are trustworthy
- Volunteering

Figure 1. A table of normative characteristics of citizenship. Reprinted from "Civic Participation Reimagined: Youth Interrogation and Innovation in the Multimodal Public Sphere," by N. Mirra and A. Garcia, 2017, *Review of Research in Education*, 41, p. 140. Copyright 2017 by AERA.

This list may function as an understanding of how the modern democratic state *represents* a good citizen and which behaviours count. Civic engagement, rather than publics for fostering critical consciousness, is reduced here to a check-list of state-defined activities: It presupposes that publics are recognized in limited forms; it presumes that receival of information is legitimate only through state-recognized channels such as newspapers; it asserts that engaging with formal institutions such as political parties is the prime indicator of the absence of apathy.

If young people do not see themselves reflected in state knowledge of good citizenship, they are imbued with a reality of being inherently apathetic, disengaged, even lazy. They feel excluded from the knowledge constructed by the state that forwards its own agenda. The effect is a

marginalization of forms of participation, and those who adopt them, along lines of age, race, income, and immigration status, to name a few. Conditions of humanization are negated by homogenizing the pluralities of experience with citizenship.

The next section will explore this disconnect through the nation-state as an institution of bureaucracy, which does not encourage representation of its citizens through the lens of humanization, but rather a lens of rationalization to manage and control them. Doing so negates civic engagement as critical consciousness in publics.

(2.2) Bureaucratic representations of citizenship

Despite lip-service to the values of democracy, *inclusion*, modern nation-states are simultaneously preoccupied with bureaucracy (*bureau*, the office; *-cracy*, rule by) which maintains certain borders of citizen identity by dividing people into manageable and accountable units.

Modern democratic nations, in their contemporary size and scope, require a bureaucracy to manage and account for their large, pluralized, shifting citizen boundaries; it does this by imparting a universalist knowledge about who counts as a citizen, and what citizens should do to be recognized by the state. However, according to political theorist Chantal Mouffe, this silences and distances the people from engaging and participating authentically in their own politics (Mouffe, 1999).

Mouffe argues that such rationalized citizenries do not tolerate *the political*: the expression of dissenting and conflicting opinions to allow critical consciousness to develop (Mouffe, 1999). She argues that by representing citizenship through the rationalized knowledge of bureaucracy, authentic civic engagement is kept at a distance so its people are easier to control (Mouffe,

1999). This rhetoric suppresses public critical engagement with its statecraft, which suppresses the values of democracy.

(2.2.1) Oppression: The *banking* of bureaucratic knowledge

By defining the terms of humanization, Freire concurrently defined its opposite: dehumanization, or oppression. He characterized oppression as the unjust conditions an oppressor maintains to dehumanize the oppressed via the denial of critical consciousness (2000). Critical consciousness is denied when knowledge is not considered a social construction of which can be transformed, but rather a one-way dispensing of universal information which becomes a "crafty instrument of domination of one by another" (Freire, 2000, p. 70). The oppressors ensure their domination over the oppressed through practices that prescribe knowledges and representations: an extreme example of the depositing of state knowledge is the techniques of propaganda used by totalitarian states. Regardless of the degree to which information is so dispensed, Freire argues the oppressed will passively accept their place in unjust conditions and adopt the "fragmented view of reality deposited in them" (2000, p. 54), and their disengagement is further exacerbated.

The bureaucratic practice of depositing definitions of civic engagement onto young people has this oppressive effect, which Freire called *banking* (2000). To bank knowledge is oppressive, in that it deposits correct ways of knowing and being onto the oppressed in a relationship of prescription (Freire, 2000).

Hence, the contemporary concern for youth apathy in civic literature is the result of a banking of knowledge regarding what counts as good citizenship. This results in a paternalistic self-fulfilling prophecy that places the blame on young people, and generates feelings of blame in youth upon themselves. When young people do not see themselves represented in knowledges that

have been banked upon them, there are oppressive effects. Especially when considered through lenses of lines of race, immigration and income levels, youth are discounted in their agency as citizens, the contributions they make to civic life, and their feelings of belonging to a humanizing society. They discount their importance and relevance in civic life because the ways in which they are represented tell them to.

Bureaucratic knowledges are banked upon citizens through countless forms, apparatuses, and representations that create oppressive experiences with reality. The next section discusses how citizen identities are reified into bureaucratic knowledge via collection of information, as *data*, and its visual representation, as *diagrams*, and how the worldviews and agendas behind the creation of diagrams can either hinder or enable the drawing together of citizens into publics. Diagrams are a relevant form of visual knowledge to discuss this notion, for they articulate abstract relations to also create *space* in the conceptual sense – whether democratic space in which people may gather critical consciousness, or bureaucratic space which erases the possibility.

(2.3) Diagrams: constructing citizenries through visual forms of knowledge

(2.3.1) Diagrams as socially constructed knowledge

Barbara Tversky's definition of *diagrams*, "an arrangement of marks on a virtual page that represents a set of ideas and their relations" is employed to discuss the form (2017, p. 350). According to Tversky (2017), they are graphic representations that "structure information to enable comprehension, inference, and discovery" (p. 350), and they leverage principles of human visual cognition to communicate spatial or conceptual relationships in ways that elude language (p. 350). While the term *diagram* can apply to a wide range of visual forms, from line

drawings, to symbols, to even words, I will refer in this review specifically to the subset of diagrams that graphically represent and communicate *information* – such as maps, graphs and charts. Via the lens of social constructivism, I also position diagrams as a creative media practice, they are visual representations that are shaped with the goal of communicating a point of view.

Diagrams aid human understanding and communication, and are visual forms of knowledge in themselves; following W. Brian Arthur's definition of a technology as an object, process, or method as "means to fulfill a human purpose", diagrams can therefore be defined as a technology (Arthur, as cited in Le Dantec, 2016, p. 23).

Examples of diagrams can be traced back to the earliest forms of record-keeping and observation around the fall of the Roman Empire (Drucker, 2014). The age of Enlightenment in the 1700s gave way to a surge in the production of diagrams, which reflected a cultural emphasis on universalist and comprehensive knowledges (Drucker, 2014). Diagrams pre-dating the 20th century were largely ignored as an aesthetic or rhetorical practice in themselves; they were considered neutral aids to mathematical and written forms of knowledge, which were historically given dominant status of validity (Drucker, 2014). The late 20th century gave rise to an explosive growth in sophistication and capacities of computational tools and information storage; in tandem, intellectual enthusiasm rose for leveraging visual cognition principles for large-scale bodies of information. It was during this time that the practice was consolidated into a distinct field named *information visualization,* primarily toward analytics within positivist knowledge disciplines such as the sciences (Sack, 2007; Drucker, 2014). Card et al. define the field as "the use of computer-supported, interactive, visual representations of data to amplify cognition" (1999, p. 6).

Reading diagrams through the lens of social constructivism looks to understand the biases, social histories, and power structures they reflect and perpetuate from their creators. Positioned in this way, diagrams are forms of rhetoric: from the collection of the information to its framing and output, they reflect the world-views of their creators, and produce visual knowledges that construct reality. Diagrams tend to have a reductive quality to them that present the information they convey as empirical fact; however, the translation of phenomenon into diagrams is not neutral, but interpretive (Drucker, 2014). Drucker uses the example of time-keeping to illustrate: although there is no inherent truth to the linear concept of time, the calendar and the clock construct our visceral experience of a cyclical, uni-directional arrow of time in contemporary western culture (2014).

Just as a map is not the territory, the way information is collected to inform a diagram, and the arrangement of elements in the diagram itself, are rhetorical choices that inherently abstract and reduce the complexity of phenomena in order to symbolically represent them. From the design of information collection methods, to cleaning, categorization, framing, and visualization, the biases and world-views of the authors of a diagram are masked by the reductive effects of visually encoding them.

(2.3.2) Aesthetics of Governance: Diagrams as body-politic

Media theorist Warren Sack offers theoretical language for understanding certain diagrams that articulate relations between people - meaning, collective societal bodies, or *body-politic* (2007). Following social constructivism, the worldviews and agendas from which these diagrams are embedded construct a particular *body-politic*. The resulting visual knowledge constructs a visceral experience of social relations that can either *fragment* people to make them easier to control (bureaucracy) or *draw them together* in a way that materializes a *public* (democracy).

Sack labels this interpretive framework of diagrams as *aesthetics of governance* (2007): a

critical reading of diagrams that "considers the body politic... how people and things are woven

together" (p. 9). Sack describes diagrams as a virtual space in which people gather; as in

physical space, it can be a site for people to see each other and galvanize critical

consciousness, as in the streets or in the public squares (2007, p. 19) or, it can be a

compartmentalization and isolation of people from each other that produces bureaucratic

effects, akin to urban designs that reinforce class or racial segregation, for example.

In diagrams about body-politic that reflect bureaucratic agendas, the identity of a person is

reduced to categories in which they can be measured and collected as *data*, or a set of

qualitative and quantitative variables. The practice of devising data collection methods to

articulate a state citizenry, which became the practice of population statistics, is what English

economist William Petty coined *political arithmetic* (Drucker, 2014, p. 88). This reduction of

person into *data* is a rationalist interpretation of what is important to count about this person,

and the diagrammatic drawing of people together in this way enforces bureaucratic views in the

person about others and about themselves. These diagrams threaten to "[decouple] and dissect

[body-politic] ... [risking] their dissection, erasure and disappearance" (Sack, 2007, p. 14**)**.

I illustrate how diagrams that construct bureaucratic body-politic do this through describing the

practices of collecting and visualizing data for state censuses.

(2.3.3) Data: constructing population statistics as political arithmetic

Prior to the 18th century, the *art of governance* was a matter of drawing borders by geography

(Foucault, as paraphrased by Sack, 2017). Once the world was parsed and divided into

European territories enshrined by maps, a new challenge emerged around managing the

swaths of empire; an identity crisis emerged as to whether the Indigenous belonged to the new

citizenry of colonizers. This was to be the occupation of bureaucracy, and the forms of knowledge they construct via framing, collection, and visualization of population data.

Data collection categories were devised in the 1800s to create a national population, using social constructs such as as race, culture, religion, language, and family lineage to create mandatory census forms for people to fill (Bloor and Bloor, 2013). The defining, dividing, and managing populations by such criteria was an activity of bureaucracy in nation-states to "make a society legible" (Scott, as cited by Kertzer and Arel, 2002, p. 2).

When this problematically-collected data is visualized into diagrams, their rhetorical power is strengthened through visual representation. The resulting visual knowledge that is created amplifies the fragmentation of publics into bins and axes in order to build and manage nation-state citizenry. As maps were instrumental to the circulation and powering of an agenda to manage space, these diagrams amplify the management of populations from central powers at home and abroad (Drucker, 2014, p. 90).

Having population statistics data extracted from us and circulated via visual forms of knowledge results in our internalization of bureaucratic citizenry. This is viscerally felt in our identities that are divided along race and ethnicity, constructs that did not exist prior to the creation of the modern state (Gellner, as cited by Kertzer and Arel, 2002). Examples of this can be found in the practice of the state census.

(2.3.4) The Census: Data collection and visualization as bureaucratizing identity

Meriel and Thomas Bloor (2013) note how racial and/or ethnic questions in European colonies were used to deny citizenship to the colonized, and control interbreeding between settlers and Indigenous people. Caste systems in some Spanish colonies in Latin America prompted

civilians to indicate one out of fourty-seven categories that best described their ratio of

European blood - a level of detail that "almost [suggests] parody" (Bloor and Bloor, 2013, p. 91).

Similarly, the 1890 census from the United States of America asked for the fraction of blood

deviation from white as to determine the social status to be ascribed through many institutional

forms (Bloor and Bloor, 2013, p. 89).

These constructions of profound discrimination are still felt in modern western nation-states.

Deep racial and cultural divides continue to perpetuate stereotyping of peoples, systematic

denials of rights and privileges, and oppression of citizens who fall along the wrong sides of

census boundaries. All of these mechanisms work to deny people the virtual space for critical

consciousness.

The statistical diagrams below from 1898 visualizes U.S. population growth from census data

collected between 1790 and 1890. It paints the foundations of U.S. nation-state identity

implemented by its colonial founders, which are reflected in the cultural and racial ideas that

continue to fragment its citizens along these lines. The smaller graphic on the left is a

choropleth map, and a stacked area graph is on the right.
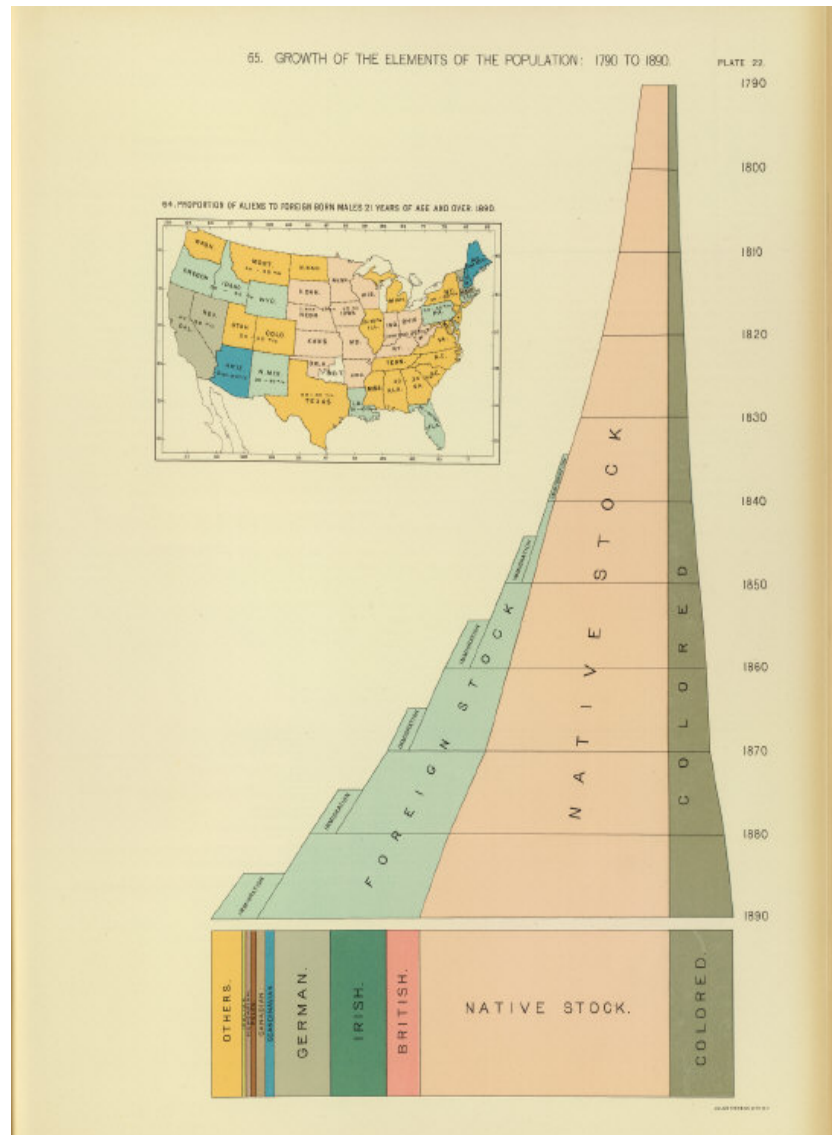
Figure 2. A chart and choropleth map showing the growth of the makeup of the US population from 1830 to 1890. Reproduced from *David Rumsey Map Collection*, by D. Rumsey, Retrieved from https://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~31967~1151348:22--Growth-elements-of-population-1?sort=Pub_List_No_InitialSort%2CPub_Date%2CPub_List_No%2CSeries_No&qvq=q:Growth%2Belements%2Bof%2Bpopulation%2B1790-1890;sort:Pub_List_No_InitialSort%2CPub_Date%2CPub_List_No%2CSeries_No;lc:RUMSEY~8~1&mi=0&trs=1. Copyright 2018 by Cartography Associates under Creative Commons.

Data framing and collection: A close reading of the stacked area chart reveals the categorizations of data individuals were required to fill. Individuals had to self-identify between the binary of *Native Stock* (white and born in U.S.) and *Colored* ("members of the African race"), until the first major wave of immigration in the mid-1830s (United States Census Bureau, n.d; Pew Research Center, 2015). No category is made for multiracial individuals. Indigenous

communities were excluded from the census process until 1890 (Pew Research Center, 2015). The choropleth map visualizes the "proportion of aliens to foreign born males 21 years of age and over" in 1890 (National Archives, 2016). The census data encoded in this map required self-identifying as a U.S. citizen: meaning, one had to be either born in the U.S. or had become naturalized by the time of filling the Census (National Archives, 2016). Those not born in the U.S. despite naturalization status were labeled "Foreign born" (United States Census Bureau, n.d). If naturalization status had not yet begun, applicants self-identified as Alien (National Archives, 2016).

Visualization of data into diagrams: The bureaucratic agenda that is embedded in the framing of categories for census data collection is powered, legitimized, and circulated by visualizing the data into maps, charts and graphs. Following Card's defining the goal and effects of visualizing data as amplifying cognition (1999), the relations that are constructed between data that fragments people as bins and axes also amplifies its atomizing and oppressive biases, and constructs a visceral, visual reality of bureaucratic citizenship. These representations suppress individual agency to draw themselves together as publics, and keep people from seeing others outside the categories they've internalized. Therefore, the visual representations of bureaucracy amplify the problematic ways census data categories are framed.

Opportunities to Design for Democratic Body-Politic

I propose a resistance to these bureaucratic civic representations that generate oppressive conditions by creating spaces in which people, young people in particular, can create representations of their own – space in which their plural forms of experience with civic life, the myriad forms *data* can take, and the visual ways these relations can be drawn are honoured, legitimized, and connected with larger spheres of public participation. I propose the forums in which young people prefer to participate - multimedia and social spaces - should be privileged

as the sites designers must approach, as an ally to young people in their galvanization of critical

consciousness and as response to bureaucratic representations that do not serve them.

I argue designers have a role in developing these spaces, especially within the modes of

multimedia production and critical media literacy, to develop sites where youth can reclaim their

representations, critically consider their relationships to public life, and produce their own forms

of democratic knowledge. This is a reconceptualization of the traditional role of the designer,

from creating artifacts, to creating facilitative space in which critical consciousness can be

fostered through co-production of visual knowledge. The particular opportunity I explore in this

thesis is a critical production space that focuses on data and diagrams. The next section

discusses the theoretical foundation for such a *democratic design process.*

(2.4) Democratic Design: Praxis for Publics

I conceptualize a foundation for *democratic design* through adapting practices of participatory

design and Participatory Action Research to create critical media literacy space, in which young

people may consider the possibilities of representation afforded in visualizing data into

diagrams, to generate visual knowledge that constructs the worlds they wish to see and meet

each other as a *public*.

(2.4.1) Participatory Design: Redefining People as Experts

Design as institutional practice

According to Ken Friedman and Erik Stolterman, the interdisciplinary field of design is drawn

together by its purpose of harnessing creativity to serve human needs and imagine new futures

(Le Dantec, 2016, Series Foreward, p. xiii). Design can be considered a set of practices that are

embedded within, reflect, and reinforce the societal frames and institutions it is situated in.

While the broad definition of design has resulted in a field that continues to shift and expand its applications within practice and research, the field is rooted in its origins of 18th century market capitalism (Sanders and Stappers, 2013). The discipline originated in industrial design to create products at the turn of western market capitalism, and these origins continue to shape its disciplinary emphasis on artifacts via principles of user-friendliness, function, simplicity of use, and mass-producibility (Le Dantec 2016; Sanders and Stappers, 2013). Sanders and Stappers (2016) label design practices that share these values as the *expert-minded* paradigm, where emphasis is placed on the knowledges of a trained professional who is tasked with the creation of needs and education of users regarding these needs.

The expert-minded paradigm is incompatible with *democratic* purposes, i.e. to facilitate civic engagement as publics. Much in the way bureaucracies reduce identities into manageable citizenry, the practice of expert-design reduces the complexity and contradiction of people into user needs that can be extrapolated into a mass-produced product. Capitalist market frames and their resulting design methods render people passive, and their participation is kept at a distance.

Redefining the Expert: Participatory Design

In contrast to the expert paradigm, there are opportunities to orient design practice to the democratic realm by looking to the *participatory* paradigm. Sanders and Stappers (2013) map the spectrum between expert-minded and participatory design:
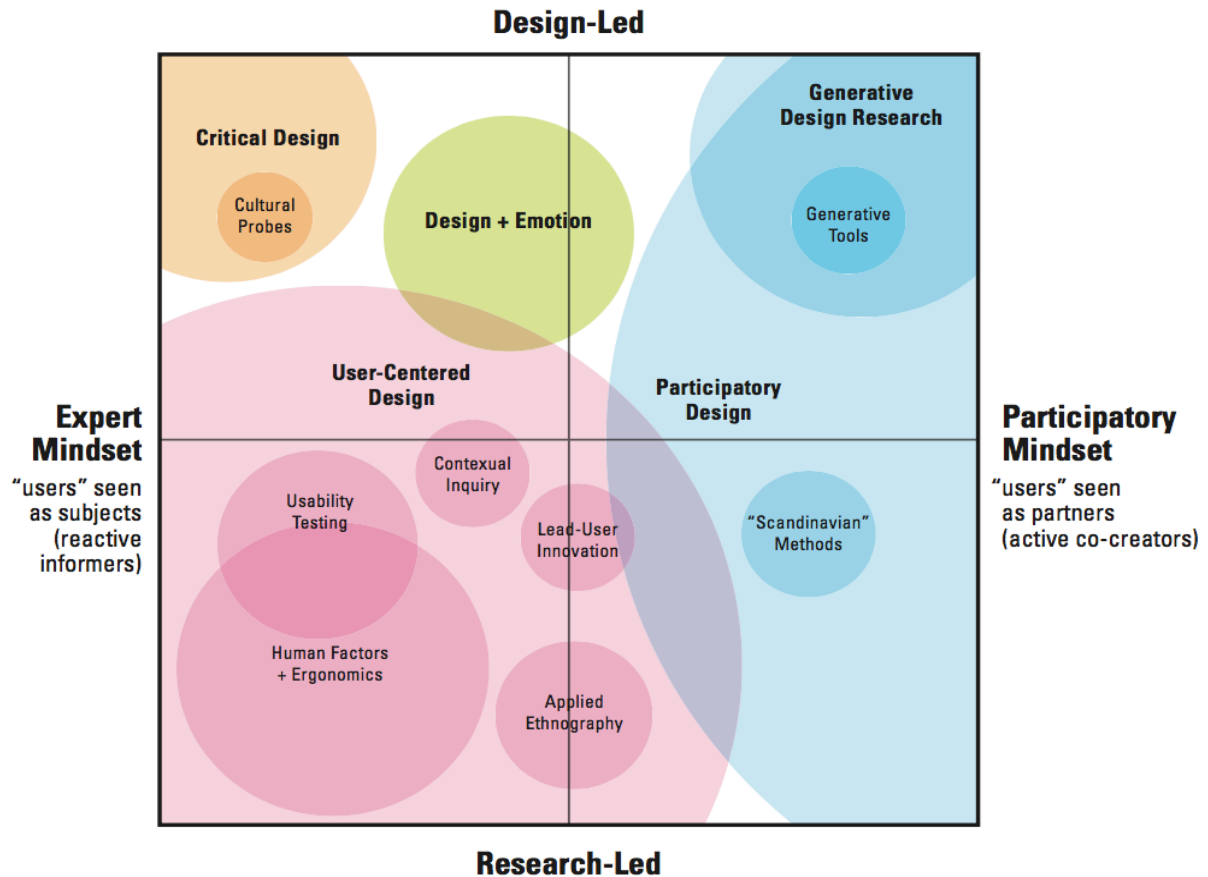
Figure 3. Map of Design Research. Reprinted from "On Modeling an Evolving Map of Design and Design Research," by E. Sanders, *Interactions, XV*(6), p. 13, Copyright 2008 Association for Computing Machinery.

Sanders, Elizabeth and Pieter Jan Stappers. Convivial Toolbox: Generative Research for the Front End of Design. Amsterdam: BIS Publishers, 2013.

Participatory design recontextualizes the user as co-creators in the design process. This approach is underpinned by a belief that users are the experts of their own needs, environments, and visions for the future. Rather than impose these upon the user, participatory designers make it their task to facilitate and harness the innate knowledges, expertises, and *everyday creativities* of the users themselves (Sanders and Stappers, 2013). Participatory methods can be considered a toolkit of techniques to capture complexity and plurality not possible by a lone expert.

While critics of participatory design argue the placement of users at the centre of the design process risks eliminating the designer's role, Sanders and Stappers argue the designer remains equally essential, albeit with different skills and competencies (2013). Rather than artifacts, the designer *creates the collective space* in which non-design participants are engaged. The designer develops the scaffold and tools for revealing the desired knowledges of co-creators, who may not possess the language to express it outright (Sanders and Stappers, 2013). In these co-creation spaces, the designer provides resources and space, primes participation with activities, synthesizes the inputs, and reflects this synthesis back to participants via prototypes. It is a performative and generative task that requires a deep trust in the value of everyday creativity (Sanders and Stappers, 2013).

Applying participatory methods as democratic design

The participatory design paradigm is aligned with fostering civic engagement in its emphasis on creating *space* for users to harness their innate creativity and ideas to design for themselves. However, if we are to consider the role of participatory design in fostering civic engagement, i.e. articulating *democratic design*, we must ensure the space serves to galvanize *critical consciousness* amongst participants. To simply use participatory methods as co-design activities to collect information from participants *in need* or who have a *social problem to solve* runs a risk of tokenized engagement.

I therefore propose that a method to engage participants as civic agents requires a shift in the conception of outputs: from co-design space towards creating an artifact (i.e. market frames) to co-dialoguing space that scaffolds critical consciousness in which co-designers rearrange their relations to each other and galvanize *power* (i.e. democratic body-politic). In order to do this, the critical space I created for this thesis project draws from Freire's theories of a *humanizing pedagogy*, the theoretical foundation for Participatory Action Research methods.

(2.4.2) From Participatory Design to Democratic Design

Liberating Pedagogy and Participatory Action Research

In his theory of humanizing pedagogy, Freire asserts that both oppressed and oppressor are equally submerged in systems of dehumanization, yet only the oppressed have the opportunity to liberate both parties (2000). The oppressed already possess the necessary knowledge to liberate themselves, but the fragmenting and silencing conditions in which they inhabit have prevented the drawing together of their knowledges to comprehend the oppressive realities in their entirety. This is the key differentiator between participatory and democratic design methods: that those who are being designed with have inherent agency and power, and they lead the agenda of the knowledge that should be created.

Given the opportunity, the oppressed can gather, redraw, and repair the fragmented relations to their reality, which Freire argues a teacher using liberating pedagogy may facilitate (2000). A teacher who is motivated to help the oppressed must work not as a removed observer who extracts information, but as as a true ally who co-reflects alongside participants as they piece their knowledges together. The goal is to reach the realization that oppression is "not as a closed world from which there is no exit, but a limiting situation from which [the oppressed] can transform" (Freire, 2000, p. 30).

A tenet of Freire's methods is that the oppressed must "birth their [own] liberating pedagogy" (2000). The teacher's role is not to dictate the conditions of oppression to them, but rather to enter into a relationship of *critical dialogue* from which they reveal to themselves *what they already know.* This partnership of dialogue is a creative act in which power is reclaimed to name the world, and thus to transform it (Freire, 2000, p. 69). This emphasis on critical dialogue is what differentiates participatory methods used within market frames from the methods used within democratic frames: it shifts the values of the process towards creation of a *public.*

Freire's description of facilitating this transformative dialogue serves as an actionable foundation for orienting participatory design to democratic design:

1. The oppressed choose points of departure, which "[constitute] the situation within which they're submerged and from which they emerge" (p. 65);

2. Praxis - a cycle of both action and reflection upon reality, is undertaken with the oppressed to investigate reality, discover interrelations between discontents, and the connections of experiences as themes. The more times this cycle is iterated, the more the group takes apart and re-pieces their whole, and "the more closely they approach the nuclei of contradictions" (p. 94);

3. A *conceptual universe* is created that ties the relations, subjects, and conditions to draw together a whole reality. Teacher and students critically reflect together upon this reality, seize upon contradictions within this reality, and begin an emergence from it (p. 79).

(2.5) Drawing people together with diagrams

Through Freire's theory of humanizing pedagogy, I situate the designer with democratic aims as a facilitator that creates *collective critical media space*, in which forms of representation are co-created as transformative knowledge.

This type of design can offer competencies in material and visual craft to co-create representations with those who have been under-represented. An investigation of forms with young people can be conducted via a critical media co-creation process. Through this exercise, participants develop critical consciousness around their worlds, how they may be reflected or enforced in dominant representations that use these forms, and a *learn-by-creating* appropriating of the forms to reconstruct and assert their view of the world as civic agents.

Drawing from Warren Sack, I saw diagrams to be a compelling form of visual production to focus such a critical co-creation space on. Via a bottom-up exploration of the lives of young people, then a consideration of diagram production – including ways in which *data* may collected and *diagrams* drawn – a critical space could be created to consider how diagram production as a media practice can draw a democratic body-politic (Sack, 2007).

(2.5.1) Creating critical media literacy space for civic engagement

Critical media literacy is a tradition of civic education in which young people may gain several skills and experiences – ranging from tools and processes for employing modalities of expression, to soft skills such as working in teams to move from concept to execution. Critical media literacy positions these competencies "as a basic civic skill and basic human right for all children and young people… in a globalized media world" (Kotilainen, 2009, p. 247).

Approaching media literacy as a space for fostering civic engagement works to shift the conversation around what counts as legitimate participation for young people – away from the normative measures of engagement with the state, and towards an emphasis on critical creation (Mirra and Garcia, 2017, p. 149). It also works to critique conventional civic education curriculums, which *bank* normative state measures of citizenship onto young people. If the aim is to engage young people in the project of civic engagement, especially those who have experienced oppressive conditions from falling along the wrong bureaucratic lines of race, immigration status, ethnicity, income, etc., educators must "refuse to force youth to conform to dominant systems of civic participation, [and] instead create space for interrogation and innovation" (Mirra and Garcia, 2017, p. 144). These critical media spaces forgo normative civic engagement in favour of highlighting the everyday "meanings, practices, identities of civic agents in communication acts" (Kotilainen, 2009, p. 250).

Co-creating representations as *cognizable objects*

In a critical media pedagogical space fostering civic engagement, designers and participants co-create what Freire termed *cognizable objects* (2000, p. 61). In traditional education according to Freire, the educator "cognizes a cognizable object" (i.e. knowledge) which they bank upon their students as empty receptacles to be filled with the educator's expertise (2000, p. 61). Freire argues this form of pedagogy has oppressive and dominating effects, for it does not view the students as subjects worthy of pursuing humanization, but as objects. In contrast, a humanizing pedagogy views students as co-investigators of their critical consciousness; therefore, cognizable objects become sites of critical reflection and dialogue between teacher and student.

If we apply this to a critical data and diagram literacy space, the outputs created from the consideration of data, its collection, and its visualization, become cognizable objects through which to draw together the public.

I propose two distinct literacies for creating a critical media literacy space for young people that revolves around the production of diagrams: critical data literacy, and critical diagram literacy. Following the idea that humanizing literacy practice offers knowledge around which to facilitate critical dialogue, I define these two literacies as follows:

(A) Critical data literacy: Bhargava and D'Ignazio define data literacy as "the ability to read, work with, analyze and argue with data…[which] involves understanding what data is and what aspects of the world it represents" (as cited in Bhargava et. al, 2016; p. 198). There is a dominant conception of what data looks like, the statistical practices and competencies required to collect and interpret empirically valid data, and the general wall of impenetrability they present to young people as a legible site for knowledge creation. A critical data literacy space would therefore not bank singular definitions or ways to work with data, but rather present data as a

concept for dialogue around what counts and does not count as legitimate data, why data feels to be difficult to reach, and whether the notion of data could be expanded.

 Through this lens, data could be presented for consideration through two avenues: publically available data, and data collected by participants. Questions could include: what are examples of data that emerge from everyday experiences? What kind of data would be relevant and interesting for you? What counts as data? What perspectives can data provide, and how are they limited? Do you see yourself reflected in data - why or why not?

(B) Critical diagram literacy: Introducing the many possible forms data can be visualized into diagrams to make certain relations visible would serve as the jumping-off point to ask: what happens when you turn data into these forms? Does it make data easier or more interesting to read? When data is turned into a diagram, what is highlighted, and what is removed? What kinds of diagrams do you read or make in everyday life? Could this representation of issues that you are interested in be useful for you?

(2.6) Examples of diagrams through democratic design

The following three are examples of participatory diagram production with young people that articulate a democratic body-politic. I describe these projects based on the extent to which they aim to foster critical consciousness through the visual knowledges that are produced with participants, and whether there are data or diagram literacies that are explicitly being taught. These projects provided practice-based context to the approach I took to the Rise and Visualize program described in the case study.

(2.6.1) Rahul Bhargava et al., Data Murals: Using the Arts to Build Data Literacy (2016)

Figure 4. Image of youth participants doing an arts-based activity to explore datasets. Reprinted from *Data Murals: Using the Arts to Build Data Literacy*, by R. Bhargava, R. Kadouaki, E. Bhargava, G. Castro and C. D'Ignazio, 2016, *The Journal of Community Informatics 12*(13), p. 207. Copyright 2016 R. Bhargava, R. Kadouaki, E. Bhargava, G. Castro and C. D'Ignazio, Creative Commons Attribution-NonCommercial-ShareAlike 2.5.

Bhargava et. al wrote a case study regarding the process of creating and executing a two-day participatory data literacy workshop for students in Brazil aged 16 to 21. The case study method employed is aligned with social constructivist practice, in that it privileges process over artifact and renders transparent the steps that were undertaken, and the degree to which students participated as critical co-producers. Bhargava et al.'s approach also draws from Freire's ideas of humanizing pedagogy (named in their case study as Popular Education) – they created a *Popular Data* workshop to scaffold a process for the students to paint a 'data-driven' mural that tells the story of their school. The outcomes demonstrated increased data literacy, feelings of belonging, and interest in making more data-driven art in the future (Bhargava et al., 2016). While the resulting data mural is successful in drawing together a public, it is limited in how deeply it articulates the conceptual universe of the participants. The short time-frame for engagement – two days – meant participants were put through a rapid, pre-determined suite of activities, and were excluded from guiding this process. Data, topics, and forms were decided in

advance by adults, excluding participants. Therefore, while this project follows the theoretical

ideas of Freire's pedagogy, the diminished degree of participation and power afforded to the

students make this more a traditional educational exercise rather than democratic design.

(2.6.2) Julie Mehretu, Minneapolis and St. Paul are East African Cities (2002)

Figure 5. Images of Julie Mehretu working with young participants at Edison High School.
Reprinted from Minneapolis and St. Paul are East African Cities, in *Walker Art Center*, n.d., Retrieved November 18,
2017, from http://libguides.gwumc.edu/c.php?g=27779&p=170358. Copyright 2005 by Walker Art Center.
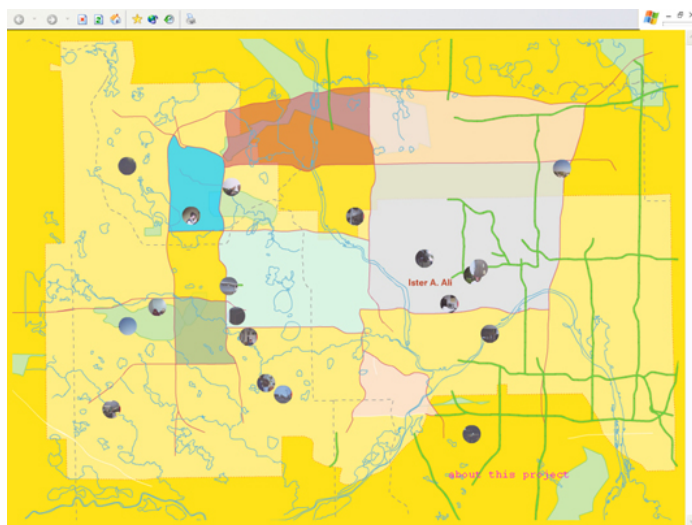
Figure 6. Screenshot of the final piece as an interactive multimedia map hosted on a web browser.
Reprinted from *Minneapolis and St. Paul are East African Cities*, n.d., Retrieved November 18, 2017, from
http://tceastafrica.walkerart.org. Copyright 2017 by Walker Art Center.

Julie Mehretu is a painter who embarked on a participatory self-ethnography project with thirty

high school students in Minneapolis and St. Paul, a municipality in the midwest United States

with a large Ethiopian, Somali and Eritrean migrant population. Mehretu provided cameras and journals to participants to document their everyday lives. This material served as the *data* to be interpreted and reflected on by the group regarding the larger meanings and narratives embedded, and the public they articulated. Warren Sack refers to Mehretu's piece as an example of a diagram expressing democratic body-politic (2017). It is a virtual public space in which documentation of the everyday became cognizable objects that were woven into the final multimedia piece: a "rich and compelling [tapestry] that [explores] themes of family history, social and political upheaval, the individual and community in urban space, and the mapping of the self within the larger whole" (Walker Art Center, 2005).

An assessment of the degree of participation in this project evokes more questions than answers. The process by which this piece was made was not documented and made traceable, as it was meant as a multimedia art-piece rather than academic research. There is no record to analyze the steps taken with participants, how much they were involved in choosing the topics of the project, or how their data-collection labour was organized and articulated. There is no way to discern the degree of critical conversations that might have occured around the cognizable objects created, or what participants may have gained in exchange for their participation. There is no evidence the project was undertaken for purposes of critical literacy. Thus, while the artifact of this project is a beautiful interpretation of this community's public, there runs a risk of tokenist engagement, with the lives and experiences involved in this project having potentially been extracted for artistic interpretation and display for the benefit of a community outsider.

(2.6.3) Bay Area Video Coalition and Anti-Eviction Mapping Project, *Youth Power Map* (2016)
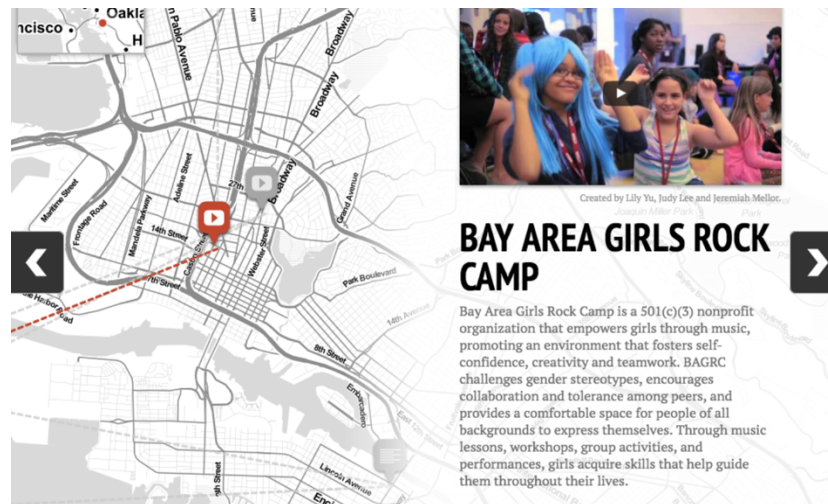
Figure 7. A screenshot of the Bay Area Youth Power Map created by youth participants in the
Bay Area Video Coalition, in collaboration with Anti-Eviction Mapping Project.
Reproduced from Bay Area Youth Power Map, in *Anti Eviction Mapping Project*, n.d., Retrieved November 26, 2017,
from https://www.antievictionmap.com/bay-area-youth-1.

The Anti-Eviction Mapping Project (AEMP) is a grassroots community initiative in San Francisco, United States that self-describes as "a data-visualization, data analysis, and storytelling collective documenting the dispossession of San Francisco Bay Area residents in the wake of the current tech boom" (Anti-Eviction Mapping Project, n.d.). Through various partnerships, they create and host an extensive collection of digital maps and visualizations on their website as a form of archival activism. In 2016, they partnered with the Bay Area Video Coalition (BAVC) – an organization who, as described on their website, "empowers media makers to develop and share diverse stories through art, education and technology" (n.d.). Together, AEMP and BAVC created an opportunity for BAVC members to create a multimedia piece for the AEMP website: the *Bay Area Youth Power Map*, a multi-media narrative map that marks places identified by the youth as important to their well-being and the neighbourhood. This project succeeds in housing a plurality of perspectives and points of view within an overarching topical framework to create a conceptual universe. A consistency of narrative is achieved through the identification of one collective topic, through which participants could

explore their own attachments and experiences to it. There is a strong critical literacy component to the project, as BAVC's goal for its members was first and foremost to create a space for them to develop critical consciousness via an exploring their attachments to gentrification in the city, while learning technical tools. It is unclear whether the topic of a youth power map was chosen by participants or the adult coordinators at BAVC.

Chapter 3: Methodology

The purpose of this thesis project is to propose an actionable framework for a democratic design process, by applying Participatory Action Research to participatory design methods, and through critical data and diagram literacy. The development of methodology, a *democratic design process*, is a key outcome of this work, and is considered the prototype of the work. It is an application of participatory methods within democratic frames that seek to engage communities in a relationship of humanization, reciprocity, and transformation, and can be considered a contribution to articulating design methods in the application of technologies for social, cultural, and environmental issues.

This democratic design framework will be described through case study methodology by describing a three-month program working with high school youth in Toronto's Ward 11 (York South-Weston) to consider how data and visualization may be used to discuss social concerns of their choosing. Although the case study focuses on increasing critical capacities around data and visualization, a design for publics must remain *tech agnostic* and view technologies as the means through which the naming of reality occurs (Le Dantec, 2016, p. 4). Therefore, the case study to be described is applicable to a variety of initiatives looking to put new media and digital production more robustly in the hands of citizens.

In the Rise and Visualize case study, I embarked on a design process guided by Participatory Action Research (PAR) as the methodological framework. Participatory Visual and Digital Methods (PVDM), a sub-genre of PAR projects consolidated and described by Aline Gubrium and Krista Harper, served as the nexus by which PAR methodology was oriented towards design (Gubrium and Harper, 2013).

(3.1) Methodological Framework: Participatory Action Research (PAR)

(3.1.1) Background

A design process that aims to render people engaged rather than passive must privilege the lived realities and expertise of the people themselves. Participatory Action Research provides a fruitful framework to orient design towards these objectives.

PAR is an action-oriented tradition of research that engages its participants as co-researchers of their own social reality as a process of promoting social justice (Baum et al., as cited by Kim, 2016, p. 40). PAR takes the position that inquiry of complex and situated social worlds should involve those who live within them, as research partners. As opposed to research traditions that establish a divide between active inquirer and passive objects of inquiry, PAR posits a process where researcher and participants are entangled in the co-production of knowledge in the name of social transformation.

PAR methodology prioritizes a mutually beneficial exchange between researcher and participants. It directly opposes *extractive* orientations to social sciences research in which researchers take and circulate information within spheres of social capital inaccessible to the communities of source. PAR asserts the relationship between participant and researcher should be one of fair partnership: a negotiation of resources, tools, facilities and knowledges between

researcher and participants. This conception of participation points to the broader objectives in PAR to "heal the alienations [that] objectivist and Cartesian methods necessarily reinscribe via the distance and fragmentation that they provoke" (Dentith et al., as cited by Bergold and Thomas, 2012, p. 27).

(3.1.2) Methods

Due to the highly localized and situated contexts suited to PAR, the research framework does not encompass a singular methodology. Rather, it is a collection of methods and values that consolidate into a research tradition, adapted according to the particular context (Bergold and Thomas, 2012, p. 3).

PAR consolidated into a research framework within the social sciences, particularly in disciplines where subjective life accounts are a focus for data collection, such as anthropology and ethnography. PAR emerged from two historical trajectories: In the U.S., social psychologist Kurt Lewin first coined the term *action research* during his tenure at MIT in 1944, and continued to develop theoretical underpinnings for participatory traditions within action research (Kim, 2016, p. 40). In 1960s and 70s Brazil, Paulo Freire developed his articulation of PAR methodology through his theories of a transformative, humanizing education. The discussion of PAR in this thesis focuses on Freire's interpretation and development of the method.

Freire's framework is based on the epistemological premise that external reality is accessed only through an embodied, situated cycle of action and reflection, or *praxis* (2000). We are able to understand our reality through a cyclical process of action - embodied performance upon the world, and reflection - reflexive awareness of the effects of our actions upon reality. In PAR, the role of the researcher is to enable participants to develop a critical understanding and transformation of their own social reality, which is developed through praxis (2000). In order for

action and reflection to take place, PAR researchers must facilitate a space for dialogue where participants feel safety and freedom to express views that may be dissensual, conflicting, or taboo.

These theoretical underpinnings of PAR translate into the following guiding actionable principles for the researcher:

1. To create safe communicative spaces, wherein participants can investigate, decode, and name larger themes that tie together their realities;
2. To respond to needs and desires of the participants regarding tools, skills, and resources so they may together "[reconstruct] knowledge and ability" (Bergold and Thomas, 2012, p. 7);
3. To invite participants to engage as equals, with power to negotiate the research agenda, terms and outputs with the researcher; to act as ally, advisor, and facilitator of the visions of the participants;
4. To remain highly reflexive of the entanglement between researcher and participants; to accept that the researcher's presence is not neutral and removed, but an agent that introduces an unequal power dynamic in the relationship;
5. To take a stance of continuous curiosity and respect of the knowledges and expertises already in possession by "the other side"; fostering a relationship of mutual curiosity for what one can learn from the other (Bergold and Thomas, 2012, p. 11).

(3.2) Methodological discussion

(3.2.1) Advantages of PAR

The advantages of PAR are in its values of fair exchange and distribution of power. It is a gesture of dissolving the silos between research institutions and the people whom have

traditionally been researched. Rather than a banking style of research that is extractive, alienating, and further silencing of the people under its study, PAR aspires to make space for research where the people engage using their own voices (Freire, 2000). It is a research that believes in the necessity of people naming their own worlds and having the benefits of their knowledge labour circulate back to them. The researcher also benefits from material that is richer, more nuanced, and truer to lived reality by allowing those with lived experience to control their own representation.

In exchange, the people may make use of an outside facilitator to partner with them to visualize the big picture of daily frustrations and disillusionments, and develop a group critical consciousness of established power relations. They may also take advantage of opportunities a facilitator can offer: demystifying the research-creation process, providing resources and tools to implement projects, tracking discussions, and reflecting back to participants the progress being made. Such benefits can be negotiated to establish fruitful research partnerships, wherein those who have had less opportunity to define their worlds can "articulate, justify, and assert their interests" (Bergold and Thomas, 2012, p. 7).

(3.2.2) Limitations and Challenges of PAR

PAR is by no means without limitations. In practice, the methodology requires the researcher to navigate complex power relations, negotiate trade-offs between methodological ideals and desired outputs, and adopt high levels of responsiveness to on-the-ground realities which seldom align with institutional requirements. In theory, PAR aspires to a flattening of power hierarchy between researcher and participant. In practice, a flat hierarchy is a utopian ideal that does not acknowledge the dynamic nature of power relations (Bergold and Thomas, 2012). Below are three key limitations of the method that are explored in the thesis project:

A) How will they participate?

The initiation of partnerships between institutional researcher and community members are largely initiated by the researcher (Kim, 2016), which creates a great power differential at the beginning. The higher levels of social, knowledge and financial capital afforded to researchers are what allow them the mobility to initiate and mobilize projects in the first place. However, these privileges afforded to the researcher should ideally be utilized to construct a bridge between previously siloed worlds, through which participants channel resources otherwise unavailable to them. As projects carry on, the researcher ideally facilitates a transfer of power to the participants as they gain confidence and trust in the process, acquire more competencies, take more ownership over the outcomes, and even begin to push back against the researcher (Bergold and Thomas, 2012).

In reality, many constraints can interfere with this trajectory of power transference. Institutional requirements, timelines, and technical capacities may compel the researcher to expedite or apply structures that simplify decisions or limit participation in some aspects of production. The researcher must remain aware that such logistical steps are assertions of power over participants in the name of project coordination. The degrees of practical participation exist on a continuum; there is no black-and-white assessment for whether projects are truly participatory or not (Bergold and Thomas, 2012). However, a basic values-based criteria can be applied: the degree to which participants are capacitated to drive the research direction. An unreflexive picking-and-choosing of participatory methods without democratic values is pseudo-participation, and the philosophical position of PAR is "reduced to individual data collection methods" (Bergold and Thomas, 2012, p. 26). Cook describes the vast difference in philosophical positions between "merely [interviewing]" persons, and allowing them to make decisions in the research process (as cited in Bergold and Thomas, 2012, p. 9).

The only avenue to navigate these issues is to whole-heartedly adopt democratic values and a commitment to kinsmanship when conducting PAR. With these values, the researcher must conduct consistent, transparent dialogue with participants, in which logistical strategies are mutually negotiated and agreed upon. The goal of flat hierarchy is utopian, but fair exchange is an attainable methodology through respectful and trusting dialogue.

B) Who participates?

There are challenges surrounding not only how participants are engaged, but who is allowed to participate in the first place. This is a political question of how collective identities, or publics, are constructed, which ties back to the discussion of bureaucratic identities prescribed by nation-states. Degrees to which participant criteria are prescribed is a charged issue in participatory projects.

First, it is important to note the over-simplistic binary of making distinctions between *researcher* and *participant*. Participants are generally described in research projects as a homogenous group attached with identification labels such as youth, community members, marginalized persons, recipients, survivors, etc. This homogenization of the group through assigning a singular label is problematic - it reflects consensus-based engagement, where homogenous ideas are meant to represent the group uniformly. It also reinforces an otherness of the participant group, resulting in their complexities and agency being reduced to traits such as lack of capacity, trauma, or other deficits as perceived by the researcher. Asserting a binary between researcher and participant also does not acknowledge sub-dynamics of power within participant groups and researcher groups. There are conflictual and competing agendas and points of view within any socially-drawn boundaries, and a methodology that encourages *the political* - an expression of conflict - must address these realities through the way dialogue is facilitated (Mouffe, 1999).

Second, the aspiration of pure inclusion is also utopian. The selection of participants to be included in projects is an artificial boundary that will be imperfectly drawn, whether by the researchers or the participants. Whether by criteria of experience, perceived capacity, or sub-politics within groups, any attempt to define who participates is a political choice which will result in some form of exclusion. In order to address this power dimension, criteria surrounding who participates must be measured against objectives, benefits and drawbacks, in dialogue with project stakeholders. The results from PAR projects also need to take into account the nature of how participants were selected, and the particular view of the world they are able to offer as a result.

C) Institutional agendas

PAR is often perceived as a wild child in academic research. Regulatory frameworks within academic and social institutions are often ill-equipped to accommodate the subjective, generative, and hyper-contextual nature of the methodology. PAR is unable to produce empirically valid, generalizable results that are expected of traditional social sciences research. PAR is also ideally conducted over a long-term timeframe, within which deeper bonds can be made and richer, more sustainable efforts undertaken. Assigning institutional timelines to the process conflicts with the methodological values of PAR. Hence, the resource-intensive nature of PAR and its incompatibility with traditional administrative expectations and evaluation frameworks make PAR difficult to fund and assess for return on investment. Unfortunately, these systemic orientations are a disservice to building truly sustainable efforts with people outside institutional walls. The particular challenges of reconciling PAR methods with the Research Ethics Board application process within the timeframe of a Master's thesis are discussed in the case study.

(3.2.3) Special considerations for PAR with young people

There are additional power dynamics to take into account when conducting PAR in partnership with young people, especially if they are minors. There is a large power differential between adults and minors regarding conceptual access to the research process and capital required to execute projects. Additional concerns include minors often requiring parental consent to participate in activities and extra social risks regarding issues of confidentiality and anonymity. Jangmin Kim notes that on occasion, young people may choose topics that adult researchers or parents do not approve of, in which cases they may try to re-insert authority over the young participants (2016, p. 48).

Following the idea that PAR methods are constantly negotiated with the limitations of real circumstances, Kim outlines three common partnership dynamics between youth and adults in PAR, each with their own advantages and drawbacks (2016):

1. **Adult-driven:** where adults initiate the research process and establish design, topics and activities in advance, while youth enter the research during the production phase, only. Bhargava et al.'s *Data Murals* may be used as an example of this type (2016);

2. **Youth-adult:** where youth and adults convene as a committee, in which youth are involved from the selection of topics and research direction through to production and dissemination of findings;

3. **Youth-driven:** the research direction and project coordination is youth-led, while adults play a background role to provide technical assistance and support where needed.

Kim notes that while youth-driven projects are the most empowering for young people, adult-driven projects tend to feature more focus and polish, and they tend to have access to more knowledge-sharing platforms that may be out of reach for young people on their own (2016). Kim concludes that more research is required to understand which the degree which which each

approach is appropriate and effective, in which particular situations, to optimize the benefits of the methodology for young people (2016).

As I am an adult whose research is situated within a Master's thesis, the possibility of executing a youth-driven project is ruled out. I also aim to avoid creating an adult-driven project, as I argue this approach is closer to the non-democratic participatory methods described by Gubrium and Harper (2013), or traditional pedagogy, as discussed regarding Bhargava et al.,'s *Data Murals* (2016). Therefore, the structure of my project will take the form of *youth-adult PAR*. A contribution of this thesis will include providing an additional voice to the conversation of advantages and limitations of this form of PAR, within the time and resource constraints of an academic institution at the Master's level.

(3.3) Participatory Visual and Digital Methods: Orienting PAR to Design

While Freire spoke to his work in the context of education, design offers different frames and traditions that may be able to adapt PAR methods in a mutually productive manner.

On one hand, design paradigms are undergoing a contemporary shift from objects and artifacts to values and systems (Sanders and Stappers, 2013). In the forward of Le Dantec's *Designing Publics*, The editors of the MIT Design Theory Press series penned a call to action for designers to shift thinking of their craft towards "service through rigorous creativity, critical inquiry, and an ethics of respectful design" (Le Dantec, 2016, xiii). The values and approaches of PAR methodology is one site where designers may begin to better orient themselves to operate within these realms - an orientation to *how* to work with people when creating artifacts, services and processes that better our environments.

On the other hand, PAR methods may find design to be a disciplinary space with which it experiences less friction. Rather than an empirical analysis of data, design focuses on craft and materiality to articulate and reflect societal concerns. By generating new realities and possible worlds through the arrangement of people, ideas, and forms, designers can facilitate humanizing dialogue in forms that transcend the oral and engage other forms of embodied knowledge via artifacts as *cognizable objects* (Freire, 2000). Design offers an alternate approach to valid knowledge that may be more approachable for young participants who are versed in self-expression through the arts.

A bridge between PAR in social science settings and design can be found in Participatory Visual and Digital Methods (PVDM). A term coined by Aline Gubrium and Krista Harper, PVDM is a form of PAR research that uses visual and digital storytelling methods to create "rich multimodal and narrative data guided by participant interests and priorities" (Gubrium and Harper, 2013, p. 13). PVDM challenges the written text as a privileged form of academic production, and experiments with visual documentation as site for participatory action and reflection. Examples include photovoice, participatory video, digital multimedia projects, GIS, and online archival projects (Gubrium and Harper, 2013).

Gubrium and Harper cite exciting new possibilities for creating participatory research with digital storytelling tools. The potential is especially promising for younger generations who feel strong affinity with multimedia production as form of engagement and being heard, as discussed by Mirra and Garcia (2017). Creative and generative documentation via digital media opens what anthropologist Arjun Appadurai labelled a *double path* for young people: hands-on exposure to hard and soft skills they may not yet have had opportunities to develop, and a bottom-up discovery of the power "to document, to inquire, to analyze and to communicate.. as active citizens on matters that are shaping [their] world" (Appadurai, as cited by Gubrium and Harper,

2013, p. 14). For Gubrium and Harper, it is this double-path that makes participatory visual and digital methods as productive in its process as its outcomes.

(3.4) Methods

Facilitation techniques will be adapted from methods in Participatory Visual and Digital Methods (PVDM) and community-based research. The final research will be developed as a case study, a deep exploration of the phenomenon in question within a particular real-life situation.

(3.4.1) Youth PVDM Workshops

A series of 10 workshops will guide high-school aged participants through a critical multimedia production program with a focus on data literacy and visualization techniques. The outputs the youth create will be framed as knowledge-production and investigation of their shared conceptual universe (Freire, 2000). The topics and materials used for the multimedia projects they create will be determined by the participants; the designer is there to facilitate the social learning space in which themes, concerns, and ideas are surfaced, then articulated through learning activities that emphasize data literacy and exposure to creative possibilities in visualization. The surfacing of important themes and topics that tie the group together will be given first priority, with the introduction of production tools introduced towards the end.

(3.4.2) Case Study

Given this project's (a) theoretical framework of social constructivism (i.e. subject and world are inextricably linked) and (b) focus on a small group within a specific context, I will use case study methodology to present its findings.

Case studies provide rich, in-depth narrative account of experiences and interactions. It is a common method employed in qualitative social science research, such as ethnography. As opposed to empirical studies that look for generalizable findings and cause-and-effect, the case study method is appropriate for studies looking to test a theoretical framework in *the real world*, discuss its viability via the social interactions that unfolded, and situate the results within the specific environments, actors, and contexts of the project. Data collection in case study method include interviews, participant observation, transcript analysis, archival review, and exploration of artifacts, which are analyzed in an interpretative, holistic manner (Center for Innovation in Research and Teaching, n.d.)

The case study method lends itself particularly well to PAR. As the researcher in PAR methods does not pre-meditate the process, and takes action in reflexive response to the social interactions that unfold, a narrative account of the experience via case study can render more visible the researcher's thoughts, interpretations, and responses as a *situated subject* amongst others in the study. The method also lends itself well to a social constructivist approach to the application of technology within communities. Langdon Winner's approach to analyzing the effects of technology in non-deterministic ways is to "study the interpretive flexibility of technical artifacts and their uses" and observe how "people in different situations interpret the meaning of a particular machine or design of an instrument in different ways" (Winner, 1993, p. 366). As this thesis seeks to engage with young people through diagrams and data in a non-deterministic way, a narrative account of how these technologies were interpreted and appropriated via case study is aligned with Winner's approach.

(3.4.3) Video documentation

Video documentation of the process is critical to make visible the personal connections, group conversations, interactions, and activities occurring that led up to the creation of artifacts. This

documentation serves as an archive of the public being created amongst the participants. Quotations will be taken from transcripts of the videos, observations and reflections from the researcher, and observations and reflections of the participants through interviews and group reflection sessions throughout the workshops.

Chapter 4: Case Study – Rise and Visualize

Towards the interpretation of Freire's PAR framework as a democratic design process, I worked with eight young people aged 15-18 over three months to explore technology for reciprocal exchange of knowledge through which a *public* is created. This case study describes the steps I took to develop a *critical media literacy space* to act as the site of this research: the *Rise and Visualize* youth program. Experiences in the Rise and Visualize program informed my creation of the research prototype: a *democratic design framework*.

Once a week, the Rise and Visualize team met at community hub *For Youth Initiative* (FYI), located at Keele Street and Rogers Road — a north-west region of Toronto in which I spent most of my childhood years. At FYI, team members shared with one another our talents, interests, and visions for the future, all the while creating digital media projects for the OCAD U Digital Futures graduate exhibition. The resulting project was *In The Eyes of Youth*, a collection of multimedia pieces presented as a web documentary. Through this experience, the team grew from acquaintances to friends hoping to create more content together in the future.

Describing the creation of Rise and Visualize to situate the research

Given the hyper-contextual nature of PAR methods, I situate the research that informs the resulting *democratic design framework* through the activity I conducted to set up the conditions of the program, both before and after its occurrence. As PAR is premised on co-creating

knowledge through action and reflection, the design framework was developed retroactively and informed by the organic process that unfolded. Because the realities I encountered would not be reproduced in other situations adapting the framework, the descriptive nature of this case study provides a reference point regarding the context-specific negotiations I made between methodology and reality.

I describe the undertaken research via four phases of activity. Phase three, *The Rise and Visualize Program*, is where the core PAR-informed design activity with young people occurred, which informed the *democratic design framework*. However, phases one, two, and four were necessary infrastructures for creating sustainable and reciprocal *critical media literacy space* as the research site (i.e. Rise and Visualize)*.* Via these steps, I will describe the power dimensions negotiated, provide the rationale of design choices I made in response, and reflect on their resulting limitations.

Steps to Creating the Critical Media Literacy Space: *Rise and Visualize*

Grounding the design process

1

| Establishing Priorities; Defining Success | Situating limitations of the research |

Designing participation space

2

| Partnership: For Youth Initiative (FYI) | Preparing the stage: Participation terms; Possible activities; Possible tools; REB application |

The Rise and Visualize Program

The Democratic Design Framework

3

| Exploring Us | Our Concept Universe | Production: *In the Eyes of Youth* |

Knowledge Exchange

4

Digital Futures Exhibition; Knowledge sharing with FYI adult allies

Figure 8. A process diagram illustrating how I set up a critical media literacy space, in partnership with For Youth Initiative

Observations, discussion summaries, photographs, interviews, and team member quotes will be used to discuss reflections resulting from each step.

(4.1) Grounding the design process

Grounding the design process

1	Establishing Priorities; Defining Success	Situating limitations of the research
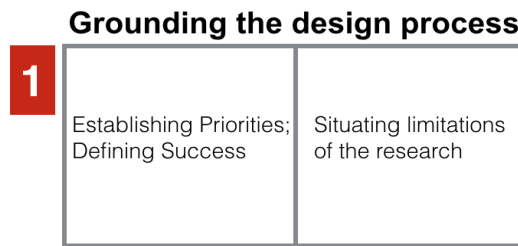
Figure 9. Step 1 in creating a critical media literacy space.

To guide the navigation between methodology and reality, I first needed to choose my design priorities, based on the objective of creating a both humanizing and critical media production space. My limitations as an entangled actor in the research also needed articulation.

(4.1.1) Establishing Priorities and Defining Success

(1) Connecting technology with concerns: Following the orientation of social constructivism, the program had to avoid a *banking of technologies*; certain tools or skills would not be presented as mandatory. Instead, focus would be on *forging connections* between data, visualization and lived experiences, so members are able to see their worlds reflected in these forms. Critical engagement with data and visualization is the bridge by which this connection should occur; in other words, an increase in experiential awareness of how data and diagrams operate, the worldviews they construct, and in what forms they may or may not fit into team agendas. A parallel example can be drawn from "creating an opinion while watching reality TV; being more aware of the way they operate, and their claims" (Ridell, as cited in Kotilainen, 2009, p. 249).

Members would consider these material forms as they apply to their objectives, to the degree they saw fit. Choices would be made around using publicly available datasets, or collecting their

own data within the constraints of the REB application. The ways in which the chosen data would be represented would also be the members' choice.

(2) Ownership of the space: I needed to keep several considerations of power in mind. For instance, by the end of the program, how much did team members feel the participation space was theirs, as were the outputs they created? To what degree did the team to speak to and represent their own work? Relative to the beginning, how active did they become, and how safe did they feel: to voice needs and interests, select or request resources, or speak to the program direction? In summary, how much did the social space contribute to "a sense of social belonging and a site for peer-to-peer politicization for young people"? (Pfaff, as cited by Harris et al., 2010, p. 26).

(3) Plurality of truths: I needed to respect the different perspectives and priorities represented in the team. For instance, how much does the program acknowledge pluralism, and leave the direction and topics to team members as pathway to reach their truths as closely as possible (Mirra and Garcia, 2016, p. 150)? How much does the program acknowledge multiple forms of engagement, rather than extracting preferred topics or types of politicization from team members (Kotilainen, 2009, p. 250)? Following social constructivism, it is important to acknowledge the individual meaning being created by each participant through their appropriation of technologies.

What were not the priorities:

(1) Imparting particular aesthetics: a variety of aesthetic possibilities for visualization, ranging from artistic to Tuftean, would be introduced, but not required for final projects.

(2) Imparting particular technologies: I would demonstrate the potential of enhancing the goals of team members with data and/or visualization, but it would not be required for projects.

(3) Imparting particular skills: I would provide resources and guidance in response to interests, but would not require members to attain a demonstrable knowledge or skill level in data and/or diagram production.

(4.1.2) Situating the limitations of the research

I would not be a member of the community. This was a deliberate choice to explore how bridges could be forged between partners who had not previously been connected. Limitations include beginning the program unfamiliar with the worlds of my partners, and trust being slower to build as an outsider.

Although the research is premised on partnership, I must acknowledge the power differential I nonetheless introduce: my age, educational level, outsider status, and levels of social capital as an academic make me a perceived authority figure who sets an agenda and potentially dominates my younger research partners. Participating as an institutional researcher introduces an element of domination by imposing an analytical gaze for the sake of reporting on findings for my attainment of a Master's degree. Initiating a project within a methodological framework beyond the experience of partners also limits participation. These realities had to be communicated, and discussion had around counter forms of power partners would develop, such as authority over the topics, direction, and forms of the outputs, along with the benefits they hoped to receive by contributing their time and resources.

As PAR is ideally conducted through long-term partnership, a consideration before engaging is the infrastructures for sustainability. Since this program would be initiated through an unfunded Master's thesis project, there were no guarantees for continuation after the research ended. The project therefore needed to be embedded within existing youth support spaces, where it would be mutually understood I was a guest amongst long-term adult allies. A handing-off of learnings

and opportunities would take place in knowledge-exchange sessions and showcases of the work between youth partners, the author, and adult allies in the community.

(4.2) Designing the participation space

Designing participation space

2	Partnership: For Youth Initiative (FYI)	Preparing the stage: Participation terms; Possible activities; Possible tools; REB application
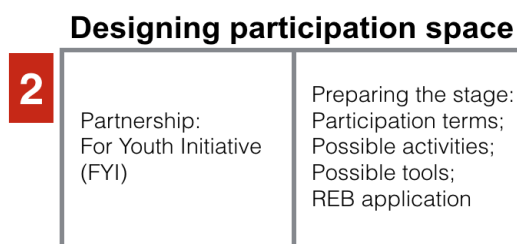
Figure 10. Step 2 in creating a critical media literacy space.

(4.2.1) Partnership: For Youth Initiative (FYI)

The design process began with establishing a partnership with infrastructures already in place. I found such a partnership with For Youth Initiative, a dynamic drop-in youth programming space that has supported the development of young people in York-South Weston (Ward 11), Toronto for over 20 years.

For Youth Initiative began as a pilot project in 1995 to provide social supports and recreation space for young people living or attending school in the area. It is located in the Community Action Resource Centre at 1652 Keele Street. Over its years of service, FYI has become an anchor for youth living in an area otherwise on the fringes of downtown prosperity in terms of local employment opportunities, recreation space and access to transit (For Youth Initiative, n.d.).

FYI welcomes up to 150 unique youth clients through its doors in any given month, and engages an average 30-50 repeat youth in their programming during the school year. Clients are largely the children of newcomer families from "The Caribbean, South America, Europe, South Asia, Southeast Asia and the horn of Africa" (For Youth Initiative, n.d.).

FYI is a youth haven brimming with life. There is a kitchen for socializing over food provided by the in-house chef. Discussion circles can be observed in the activity hall. Students partner up with homework mentors in the computer lab. Aspiring artists are found huddled over equipment in the recording studio. Hip-hop pulsates through the halls. It is a civic space for the young people of the neighbourhood in every sense.

Partnering with FYI's Youth Ambassadors Program

Youth Ambassadors at FYI is a year-long program at FYI that prepares high-school aged youth to be socially-engaged leaders as they transition to adulthood. Led by case-leader Mamawah Kaindaneh, the Youth Ambassadors participate in weekly sessions for social action projects at FYI, with the time counted towards their 40 mandatory volunteer hours for high-school graduation. These projects are run either by front-line staff or guest facilitators from outside institutions.

A partnership with the Youth Ambassadors was an easy fit. Recruitment and engagement would be embedded in a pre-existing organization with deep ties to the community; members would already feel comfortable in the space, allowing for easier building of trust. FYI was willing to offer honorariums from their programming budget - $10 per participant, per session they attended. The intensive time commitment of a PAR project was not out of the ordinary for Youth Ambassadors, who regularly attended other programs of similar length. The provision of space, free bus tickets, food, and weekly supervision support from Mamawah were of great value.

In return, I was able to offer a program combining data literacy, civic engagement, and multimedia arts that would result in a substantial public platform for participants to showcase their projects, the thesis exhibition. The data and visualization dimension was particularly intriguing for Mamawah, who described the proposal as "something FYI has never had before".

Mamawah and I collaborated on the name *Rise and Visualize*, and agreed to a length of 10 weekly workshops beginning in the Fall of 2017.

The Youth Ambassadors themselves were not engaged at this stage of program design, therefore an adult agenda and power differential was established at the beginning that members had to work within. The methodological ideal would have been to engage youth in the terms and goals of a partnership. However, this adult-first approach had the advantage of resources and coordination support that allowed the project to ramp up quickly in the given time-frame.

(4.2.2) Preparing the participation stage

Determined next were such details as who would participate, how the process would be described, what activities would be desirable, and how to apply for ethics clearance for a PAR method that includes human research participants. This phase is described as preparing a *stage*, as the design values reflected in setting the terms of participation will shape the nature of the eventual *performative act* of interaction and dialogue between members in the program.

Who participates?

Due to the short amount of time allocated, Mamawah and I decided the program would be a closed group of 4-6 participants. Although open-door drop-in participation is more inclusive, it was simply not feasible within three months and one person leading the process; there would be low likelihood of galvanizing deep engagement or impact. A smaller, consistent group would be easier for building relationships and team cohesion. A limitation was, again, not including the youth themselves in this decision.

Youth Ambassadors would be invited to join by Mamawah based on her knowledge of their

interests. A wait-list was kept in case a participant dropped out. Eventually, members were increased to 8 due to high interest and extra budget for honoraria.

Language of participation

Building on Le Dantec's idea of the democratic designer as building "social and technical capacities, or infrastructures" for dialogue (2013, p. 2), the following language would be employed in the program:

From users to *co-producers* and *team*, implying active participation, cooperation, entangled interaction, and a diversity of strengths and interests among members that make up the team as a whole. The researcher is included as a team member;

From design to solve problems to *design for a space* in which co-producers draw attachments between concerns of their choosing and the circumstances in which they are embedded. This is arrived at through *facilitation and scaffolding of dialogue*;

From *designer* to *facilitator*, and from producing *artifacts* to producing *opportunities and resources*, as identified by co-producers. Outputs created throughout the process are *cognizable objects* which the team sees fit to name contradictions from which they begin to emerge (Freire, 2000).

Possible activities and tools: Prototyping Rise and Visualize with an Adult-led PAR structure

In preparation for the program, I prototyped a possible structure along with activities and materials. It was a thought experiment of where I personally wanted the process to go: a collection of place-based maps and visualizations about Ward 11, using primary data collected in the neighbourhood with both analog (e.g. surveys) and digital (e.g. phone GPS) tools. It also

served to anticipate the types of resources that might need preparing. Inspiration for activities were drawn from co-design and community-based research methods (Sanders and Stappers, 2016; Jason and Glenwick, 2016).

Early Prototyping of the Rise and Visualize program using adult-led PAR

Orientation	**Portrait**	**Palette**	**Vision**
Intro to program Group introductions Visualization examples Benefits/risks/rights Task: Take pictures and notes on local places that are important to you	Discuss pictures and notes Intro to open data about Ward 11 Topics, questions, stories	Choose topics and questions Intro to visualization techniques Data: collection methods (digital and analog)	Share top three ideas Develop what/where/how Tech wishlist for data collection Data collection ethics Discuss form of atlas
Data Kits	**Field Week**	**Data Play I+II**	**Atlas**
Play with tech from wishlist Data collection system Data collection methods Set up collection schedule	Collect field data in 1 week Progress and troubleshooting	Bring in field data Prototype visualizations Group reflection Troubleshooting Possible guest mentor	Start creating final visualizations Compile atlas content Obtain consent to use work Share learnings

Figure 11. A process diagram of Rise and Visualize using adult-led PAR.

Possible activities and materials for Rise and Visualize

Figure 12. A suite of example activities and materials for Rise and Visualize.

The structure is an example of an adult-led PAR process rather than an adult-youth process, which was the goal of Rise and Visualize (Kim, 2016). While there is participation in the sense that participants choose their outputs, the agenda is set by the facilitator in advance. Creating a

co-design process was useful to situate the author's agenda as one amongst eight others, and to later compare it to the PAR process that would instead emerge.

Video documentation

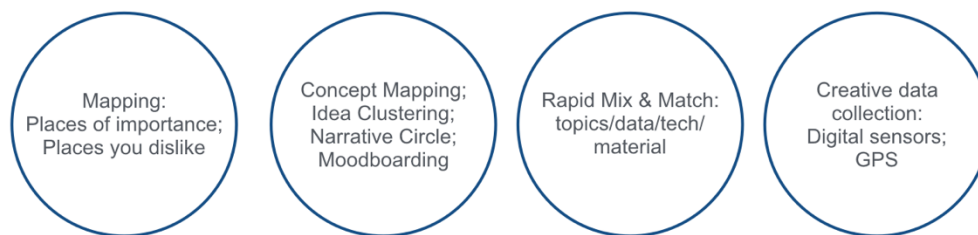Early on in the process, it became apparent how essential the footage was to communicate the process being undertaken. It renders the connections, conversations, and people visible in a way that text cannot. The footage would also become the linchpin for the team's final chosen output — a web documentary. I was lucky to have supportive and skilled colleagues to assist me with this critical piece; the thesis had become a jill-of-all-trades challenge, with capturing documentary-quality video documentation on top of running the program alone not being possible.

Unfortunately, this luxury is not always afforded to those engaged in community work. The intensive resource needs of PAR often do not leave room for quality documentation. The typical resulting lack of polished aesthetic, either from participant outputs or process documentation, creates another barrier to PAR projects receiving proper funding and recognition.

(4.2.3) Reconciling PAR methods with the Research Ethics Board

The final task before the program could begin was reconciling PAR methods with the application for research involving humans, mandated by OCAD U's Research Ethics Board (REB).

I was told by the liaison between OCAD U researchers and the Research Ethics Board that this application was possibly to be the first at the school to propose PAR methods. Extra caution with negotiating the methods with the bureaucratic constraints of the REB application was needed.

First, REB typically deals with the normative position of removed relationship between researcher and observer, while PAR mandates a entanglement of the two. With the extra caution REB takes with minors regarding matters of confidentiality, anonymity and coercion, I had to balance risk with PAR's philosophy of participant choice to name themselves rather than be silenced via anonymity. I adopted a helpful strategy from Gubrium and Harper (2013): a pre-program consent form would ask team members whether they wanted their names in the project in full, by first name only, or by alias. Throughout the program, there would be conversations regarding any risks or adverse consequences of choosing certain topics, methods or representations. Finally, before the outputs were released, members would sign a post-program consent form indicating their approval of the pieces produced, and a re-confirmation of the way they wished to be named. A limitation was that parents or guardians signed the forms if the members were minors — which most of them were.

Second, while the purpose of the REB is, rightfully, to ensure no unnecessary risk or exploitation comes to participants, the application is structured to assume the researcher will have clearly defined their direction and activities in advance. This separation between researcher and those being researched is directly at odds with PAR methods. My personal interest lay in collecting primary data in the neighbourhood, so I initially tried to map all possible trajectories for methods and activities. This became a fraught strategy for two reasons. First, it could not yet be described what data would be collected and how. Second, positioning the participants as co-researchers conducting research activity outside the physical parameters of the program risked requiring *additional* REB applications per youth, which was impossible.

This inability for participants to collect primary data from persons or environments outside the program significantly limited the scope of topics and methods available to the participants, thereby considerably limiting the degree of participation. In this way, the REB process as it

currently stands is fundamentally at odds with conducting PAR methods in its full capacity. This limitation should be kept in mind in the review of final youth outputs.

Following the advice of my Primary Advisor, I settled on limiting the scope of data collection to a) publically available data, and b) data collected from team members only, in the form of anecdotal reflections. Should a different direction be strongly desired by the team during the program, an amendment would be submitted.

Once the REB gave their clearance to the application in November 2017, the time had finally arrived to meet the members of Rise and Visualize and begin our three months together. Despite all the advance preparation, I was anxious about putting aside my academic hat to simply become *April*, a newcomer to FYI, facilitator, and member of the newly-minted Rise and Visualize team. This anxiety quickly fell away as I got to know my teammates. The worlds I was welcomed into, the stories that were shared, and the people I have gotten to know along the way were an enriching experience for life.

(4.3) Action and Reflection: The Rise and Visualize Team

The Rise and Visualize Program

The Democratic
Design Framework

3 | Exploring Us | Our Concept Universe | Production: *In the Eyes of Youth*

Figure 13. Step 3 in creating a critical media literacy space.

In November 2017, we formed *the Rise and Visualize team*: youth storytellers using data, diagrams, and digital media to speak about issues affecting young people. In the end, we created a collection of digital media projects for our web documentary *In The Eyes of Youth*.

Figure 14. Images from the Rise and Visualize team workshops.

(4.3.1) The Team

Ransford Bendu

Figure 15. Ransford Bendu, member of Rise and Visualize.

 "I'm your average kid you see on the street. I'm quiet sometimes, loud others. I love hanging out with my friends, and playing video games at home. I do my homework when I need to, and other times, I just live life." **Skills or interests:** computer science, spoken word and rap.

Ayomide Salami

Figure 16. Ayomide Salami, member of Rise and Visualize.

"I love playing badminton, I love anime, manga, I love reading Chinese novels, I love doing lots of math. I took a tech class when I moved here from Nigeria last year, and I've reached the point where I can build a robot. When you create something awesome, it inspires a feeling in you, and I love that feeling." **Skills or interests:** math, fantasy literature, and robotics.

Charlotte Birungi

Figure 17. Charlotte Birungi, member of Rise and Visualize.

"I'm African, I come from Uganda. My passions are music – I love singing – and reading. My moods basically change according to how my mornings were. I haattee doing homework. Am not the best in my classes but am still not the worst. Outgoing but have limits too. Other than that I basically just live ma life!" **Skills or interests:** music and literature.

Kokob Hagos

Figure 18. Kokob Hagos, member of Rise and Visualize.

"I am a shy girl and I laugh a lot and I have a soft voice. I enjoy to play volleyball even though I am scared to play in the volleyball team because I'm shy. I was born in Eritrea, lived in Sudn, then moved to Canada." **Skills or interests:** drawing, dancing

Hieu (Rin) Nguyen

Figure 19. Hieu (Rin) Nguyen, member of Rise and Visualize.

"I really like art, editing video, acting, drawing, and I love comics and video games. I'm from Vietnam and I've been living here for about a year. I'm a visa student."

Skills or interests: YouTube video production, gaming.

Ly Gia (Derek) Thinh

Figure 20. Ly Gia (Derek) Thinh, member of Rise and Visualize.

"I'm an international student in Canada, it's an unforgettable experience for me to live independently in another country. I love hanging out with my friends, I enjoy swimming, doing yoga and I watch a lot of Netflix in my free time. **Skills/interests:** Drawing, use color and gossip about everything in life :)."

Bora Erden

Figure 21. Bora Erden, member of Rise and Visualize.

"*A boy with bigger dreams than himself.* I am 16 years old, I go to Thomas A. Blakelock High. I spend most of my time designing fashion. I like travelling and trying different tastes."

Skills/interests: fashion design, sketching, basketball, and socializing

Sharifa Mahkseem

Figure 22. Sharifa Mahkseem, member of Rise and Visualize.

"I am an immigrant from Tanzania, and I'm 18. I love reading - you feel what it's like to be somewhere, and it's a good way to learn English. I came to Canada two years ago. Music is my escape - if there is something I cannot say directly, there is always a song that says it on my behalf." **Skills / interests:** music, art, languages

April Xie

Figure 23. April Xie, member of Rise and Visualize.

"I was born in Toronto, my parents immigrated here from China. I love design, music, and community. I love to cycle around the city in the summer."

(4.3.2) The democratic design framework

I consolidated the work we did together into the *democratic design framework*, made of: (A) cycles of praxis, which move the team through (B) a process of democratic design.

A. Cycles of Praxis

Co-design activities that move toward data and visualization

ACTION

Cognizable objects

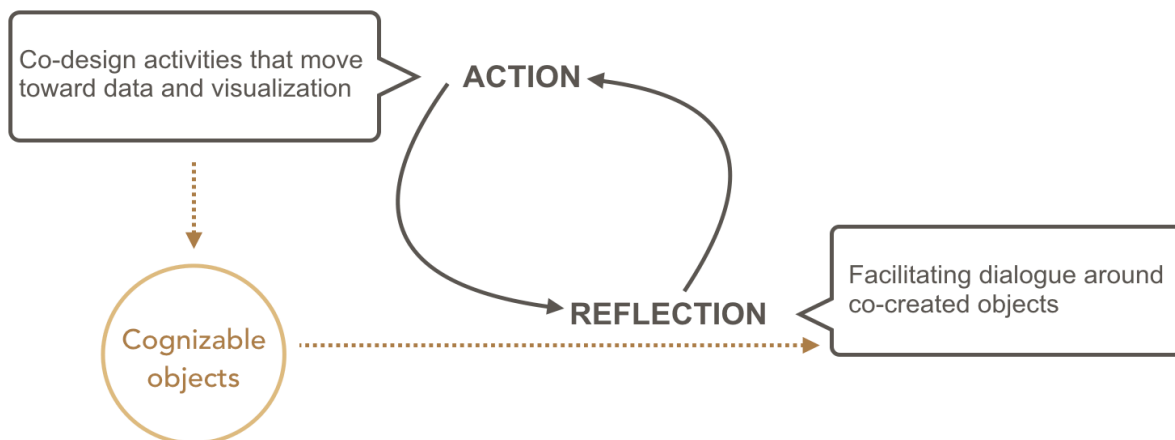REFLECTION

Facilitating dialogue around co-created objects

Figure 24. Diagram of a cycle of praxis through co-design activities.

To begin a cycle of praxis with *action*, I made a co-design activity centered around a visualization technique. Through this activity, we would uncover themes from our collective experiences. In this way, the visualizations we made were *cognizable objects* (CO): a manifestation of our knowledge and worlds. This *reflection*, the conversations we had about us as a group, informed our next *action* to take*.* We *performed* PAR by exploring the steps involved to create diagrams, considering publicly available data or collecting our own, and responding to what we learned with our own multimedia projects. I organized these cycles into the three stages of the framework: (1) Exploring Us, (2) Our concept universe, and (3) Production.

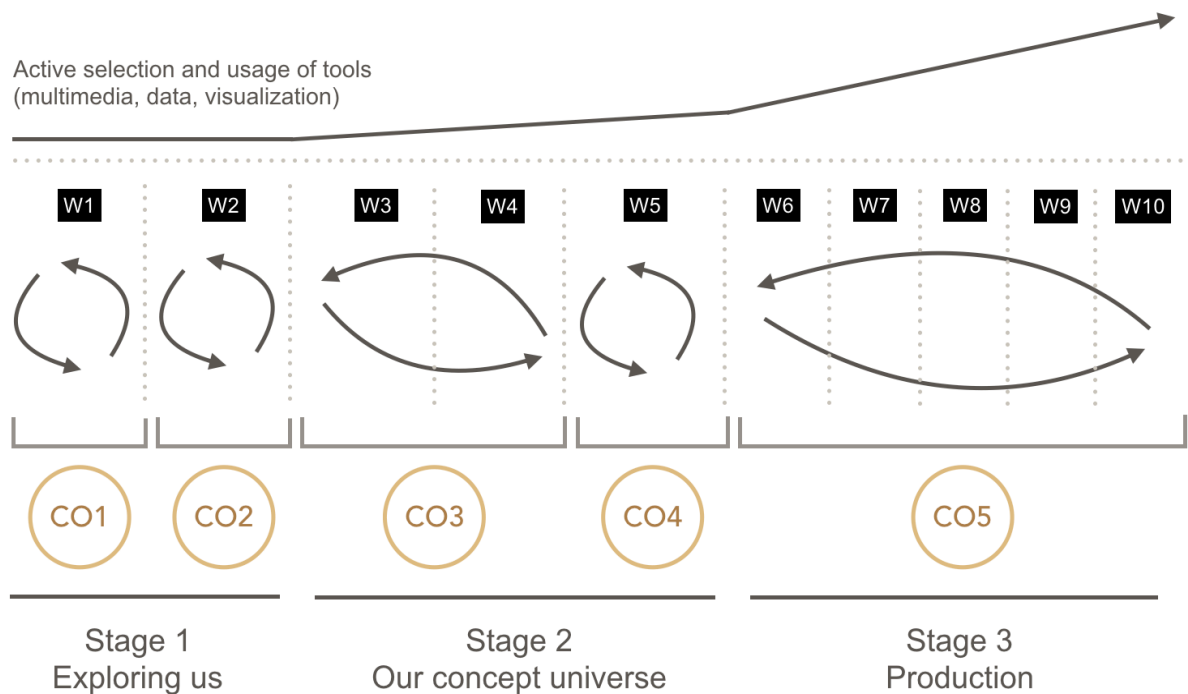**B. Democratic design framework**

Figure 25. Illustration of the democratic design framework, which was conceptualized based on the experiences of action and reflection in Rise and Visualize. This particular iteration of the framework shows the rounds of praxis executed specifically in Rise and Visualize.

Five rounds of praxis were performed in Rise and Visualize. The first stage had short cycles, as the group was just getting acquainted through rapid exploration. We moved to longer cycles of praxis in stages 2 and 3 as we became more confident in what we wanted to say and make.

Once we discovered the themes that tied us together, we then moved to tools - visualization,

data and multimedia — to fulfill our vision. As the design facilitator on the team, I provided

resources in response to interests and needs. Each praxis cycle is described via the following

dimensions:

a.   ***Resources*** I provided in response to team needs;

b.   ***Action*** taken by the team via cognizable objects;

c.   ***Reflection*** upon the cognizable objects from the team; observations from dialogue.

(4.3.3) Exploring Us

At this first stage, we had to understand where we were starting from as a group. We needed to

explore possibilities of our partnership, based on what we could bring to the table. We would

also begin to explore data and visualization in a bottom-up way through simple group exercises

that focused on lived experience.

Resource - diagram examples: In the orientation, I introduced a variety of forms

and topics that can be applied to give visual form to abstract information. We discussed how

data and diagrams are not neutral: from framing, to collection, to visual representation of data, it

is shaped by the people who make them according to what they feel is important or valued. The

team looked at images of photoshopped models and the standards of beauty they represent.

We compared this to how diagrams present only one way to frame reality, making them creative

practices.

Figure 26. Photograph of a wall at For Youth Initiative showcasing creative examples of diagrams. Creators from left: Jose Duarte, Georgia Lupi and Stefanie Posavec, W.E.B Dubois, Mona Chalabi, Anti Eviction Mapping Project.

Starting from a place of strength: The concept of *giving power* to a group is problematic, for it takes on a patronizing assumption that there was a lack of power to begin with (Hall, 2000). In response to this, I opened the program with a show-and-tell of our interests and talents, to situate the project within the pre-existing strengths of the group. We discovered an extraordinary wealth of expertise and skills on the team, including robotics, computer programming, fashion design, and video production. The group applauded and supported everyone's contributions with enthusiasm. We quickly grew more comfortable with each other after this experience.

Cognizable Object 1: Storymapping

Action: This first exercise was chosen because place-based memories are a simple source of data to recall and share, and maps are an approachable form of visualization to begin our exploration of diagrams. Each member pinned a location on a google map that was meaningful to them, and shared the significance of the place with the team. I transcribed each members' words as they spoke, as an annotation. What served as the data in this exercise was both the

locations pinned on the map, and the narrative accounts pinned to each location. This

arrangement of data articulated Sack's democratic body-politic (2007) of the team members as

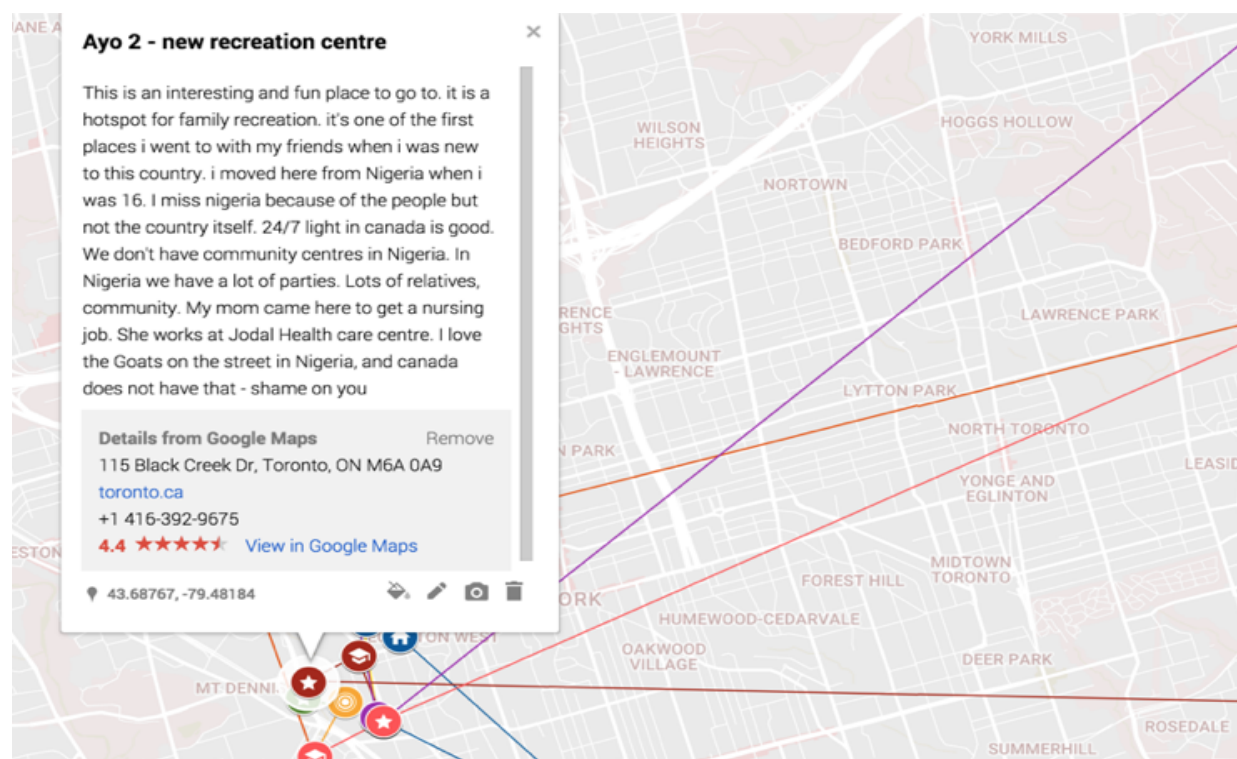a site for initial exploration of our attachments and worldviews.

Figure 27. Screenshot of cognizable object 1 created in Rise and Visualize: a *story map*.

Members were eager to share favourite places to eat, recreation spots, and places of nostalgia.

The live annotating was a good way to capture the spontaneous accounts for each pin as

narrative source to explore themes. In the above example, Ayo mentioned the lack of

community centres in his hometown in Nigeria; these observations were used as conversation

hooks such as, "how many of us regularly use community centres? Why are they important to

us?" The readiness by which prompts were taken up was an indicator of how resonant the

theme was.

Reflection: Two major conversational themes emerged. The first was around local school

rivalries. While Ayo and Ransford noted their many similarities throughout group conversation,

Ransford cautioned they were from rival schools, York Memorial and George Harvey. He

jokingly concluded they could be friends when nobody else was watching. We discussed the

potential of school rivalry and violence as a topic. The second was around Immigration. Pins

were largely of old hometowns from around the world, an insight that this data collection and

visualization process helped us to uncover. We discovered everyone on the team except

Ransford and April were newcomers to Canada. Even annotations of Toronto-based pins often

made reference to *back home*. We agreed for our next meeting, we would move to exploring

non-geographic aspects about ourselves, such as our dreams and interests. This informed the

second activity: a concept-mapping exercise.

Resource - Youtube tutorial: The team wanted to continue pinning places as the map exercise

concluded, so we agreed to do so on our own time over the week. I shared to our team

WhatsApp group a Youtube tutorial on how to add to the map. This became the first of a suite of

resources I created in response to praxis.

Cognizable Object 2: concept mapping

I prepared a set of colour-coded post-it notes with the following prompts:

"I miss…"
"I am curious about…"
"I define myself as…"
"With $1 million, I would…"
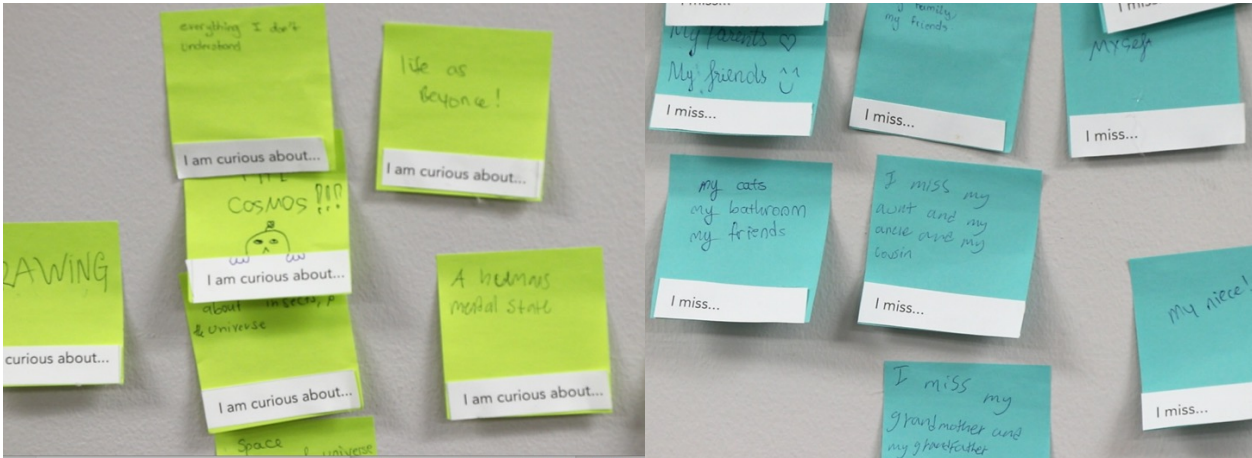*"My favourite place is…"*

Figure 28. IImages of cognizable object 2 created in Rise and Visualize: a concept mapping exercise.

Action: each member filled out at least one post-it from each category, to create another source of data. We then attached them to a wall, organized by prompt, a way to visualize the data by category. Responses were read out loud to prompt conversation and identify patterns.

Reflection: Mentions of family members and friends from *back home* were again highly prominent, under the "I miss…" category. This prompted a conversation about severance from mother cultures as many team members adjusted to Toronto. When asked if they identified as Canadian, all members who were newcomers said they did not. Issues of race in Canada were explored: Ayo noted "in Nigeria you're just Nigerian. But here you are black". They made clear how important the FYI community has been for their transition to Canadian life, otherwise "there is nowhere else for youth to meet up". The question of whether immigration and cultural identity should be further explored was met with nods.

Phase 1 - learnings and challenges informing my approach for phase two:

1A. Social Space: Only two weeks in, the camaraderie in the room indicated hitherto success of the design process as social space, and working bottom-up from the mundane to the thematic through co-design activities.

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1B. Who steers the conversation: The dialogue was the richest and most animated when members steered the conversation, ranging from employment experiences at Canada's Wonderland to favourite comic book characters. As facilitator, it was difficult to choose at which points to re-insert myself to *stay on track*. Although *on track* should mean wherever the team wants to go, there was nonetheless an agenda of moving the team through a particular process. Therefore there was not yet a consensual vantage point between partners for what *on track* meant. This balancing of the short time we had together with the organic conversational space required a constant negotiation of power.

1C: The designer as generative secretariat: I realized my role was to *synthesize* and *reflect* the knowledge we were accumulating. I began to see my job as a secretariat who listens and reflects back to the team the progress being made. This was a generative process as I was interpreting the thematic universe that was emerging. Examples of this generative work included playing back key footage of conversation for reflection, or sharing existing projects related to the themes we were exploring. This served to interface the individual experiences shared in the room with larger multimedia storytelling possibilities that speak to civic concerns.

1D. Early participation as banking: At these early stages, participation was still largely *banking*. I would set up pre-meditated exercises that the team would follow along and complete. While it was reasonable as a jumping off point, the next step was to consider how the power balance could be shifted. This would begin with simply asking: now that we've explored some possibilities, what do we want to do?

1E. Necessity of physical social space: Although only one member ultimately viewed the story mapping tutorial and added a pin on their own time, everyone was eager to resume the exercise once we were together again. This demonstrated how critical the physical gathering was — it

could not be expected that time would be spent outside program hours. This limited the possibilities of outputs with our short time together.

1F. Interest in data collection and diagram production: the story-mapping and sticky-note exercise both provided a visual sense-making opportunity for us to record, share and galvanize our experiences as data, in ways that may be difficult to achieve through conversation alone. It also introduced, in a bottom-up way, the possibilities of diagrammatic forms to develop critical consciousness.

(4.3.4) Our Conceptual Universe

The next objectives were to begin: (A) shifting the conversation to what the team was interested in creating; (B) selecting themes for the project; and (C) discussing forms the project could take. Big-picture goals would be established, and we would begin exploring possibilities for data and visualization relating to questions of interest.

Resource - prototyping the story map as a linear narrative: I began thinking about platforms that could house a multitude of perspectives in a manner that still suggested a whole - a *public*. I repurposed the storytelling map as a linear narrative with a game-like click-through mechanic. I presented this for discussion regarding the form of our project.
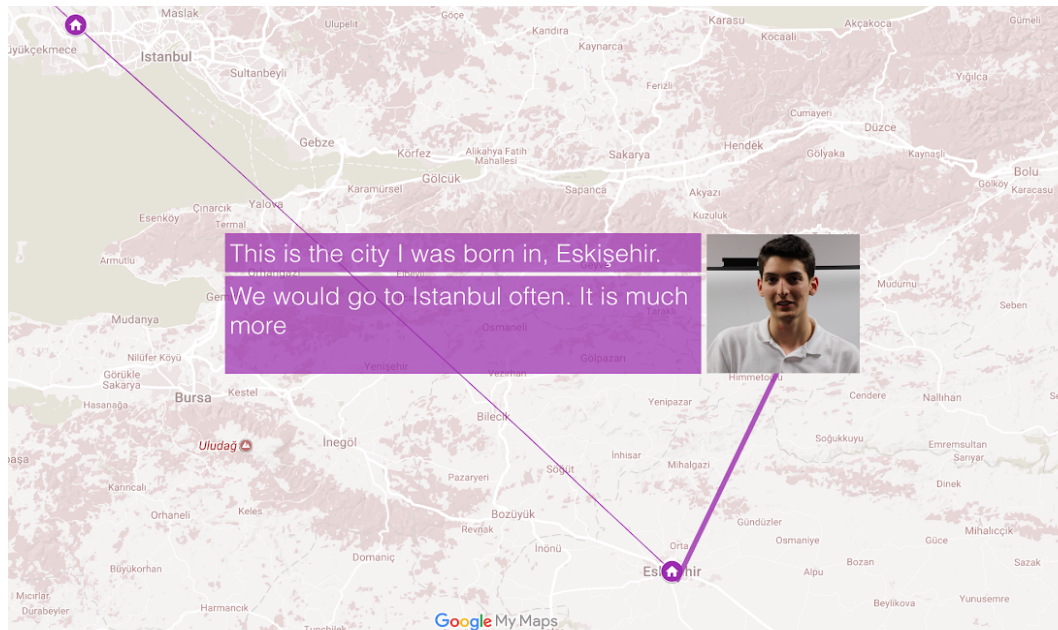
Figure 29. A screenshot of cognizable object 1 (storymap) reconfigured as a linear narrative.

Reflection: Rin, who was passionate about video editing, expressed great enthusiasm for a video-based output such as this. Ransford commented on how the linear format made the stories easier and more compelling to follow. I showed the team two examples of web-based storytelling that used data and narrative: *Here at Home* from the National Film Board, an interactive web documentary, and *Historia de Zainab* by Medialab Prado, which combined data and comic panels to illustrate the Syrian refugee crisis.
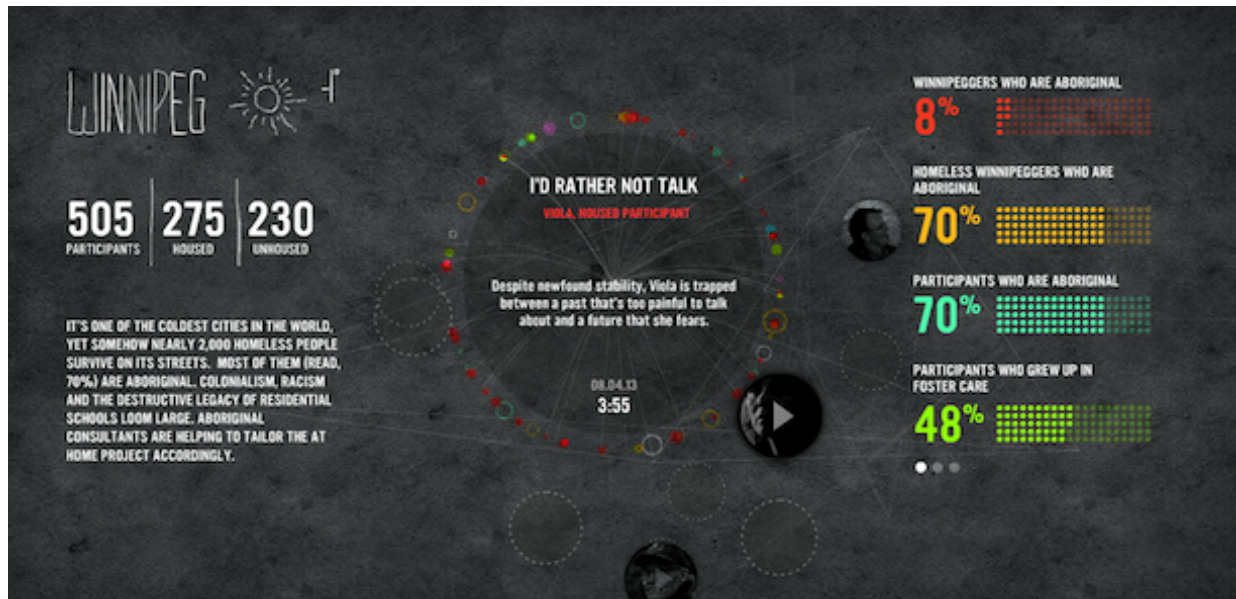
Figure 30. A screenshot of Here At Home, an interactive web documentary. Reproduced from Here at Home in *National Film Board of Canada,* (n.d.), Retrieved on January 8, 2018, from athome.nfb.ca. Copyright 2010 by National Film Board of Canada.

Figure 31. A screenshot of *Historia de Zainab*, a storytelling project about the Syrian refugee crisis that uses infographics, comic strip panels, and maps. Reproduced from Historia de Zainab, (n.d.), Retrieved on January 11, 2018, from http://historiadezainab.org. Creative Commons Attribution 4.0 International.

Responding positively to these examples, the team agreed on creating a variety of multimedia projects exploring different themes, to be housed in an interactive web documentary. This was a sensible approach to allow the public to be expressed in its plurality, in an accessible and engaging manner. The video documentation would serve as anchor footage to highlight our process.

Cognizable Object 3

Action: We agreed members would propose one *chapter* each for our documentary, as way of selecting themes that represented our conceptual universe (Freire, 2000).
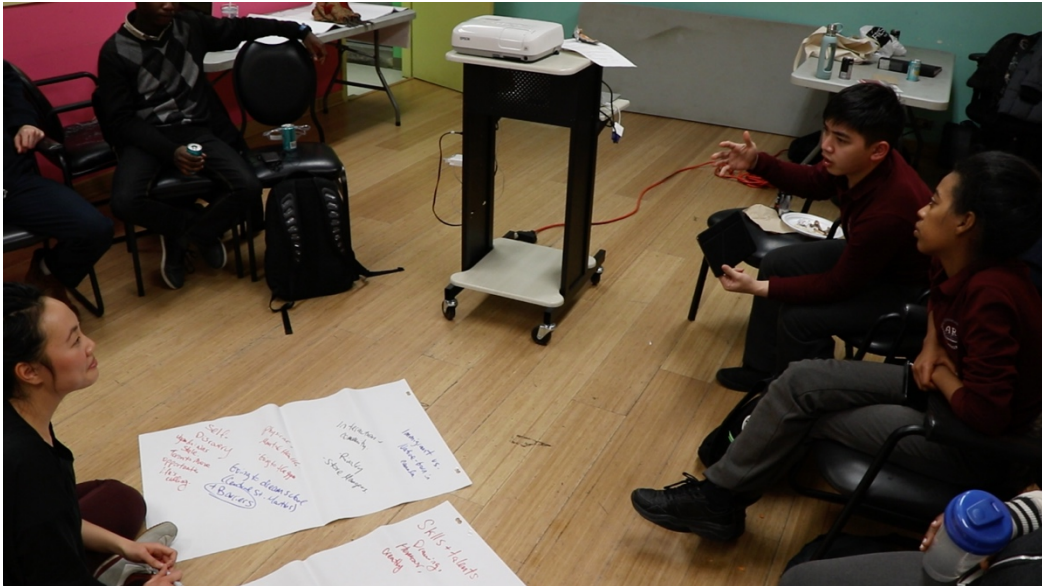

Figure 32. An image of a Rise and Visualize workshop during the creation of cognizable object 3.

This was a critical turning-point for extrapolating individual experiences to more public concerns. For example, Bora became excited about a chapter on the barriers he faced to achieving his dream: attending fashion school at Central St. Martins. His experiences could speak to broader issues surrounding elite schools with high financial barriers. The proposed chapters from team members were:

Ayo	My path to self-discovery between living in Nigeria and Canada	Derek	School bullying
Ransford	Mental health in high school	Sharifa	Bullying
Bora	Barriers to success: my dream of attending Central St. Martins	Kokob	World cultures - dress, food, language, greetings
Rin	What makes Toronto a great place to live?	Charlotte	Are immigrants happier here or back home?

Table 1. Topics chosen by Rise and Visualize team members.

Resource – diagram ideas for story chapters: We brainstormed data-sets we were interested in based on these chapters. I distributed a hand-out of visualization types such as maps, bar

charts, and scatter plots, and we discussed how to choose charts based on the type of pattern, such as changes over time time or correlation. We brainstormed which charts could best visualize the types of data we were interested in.
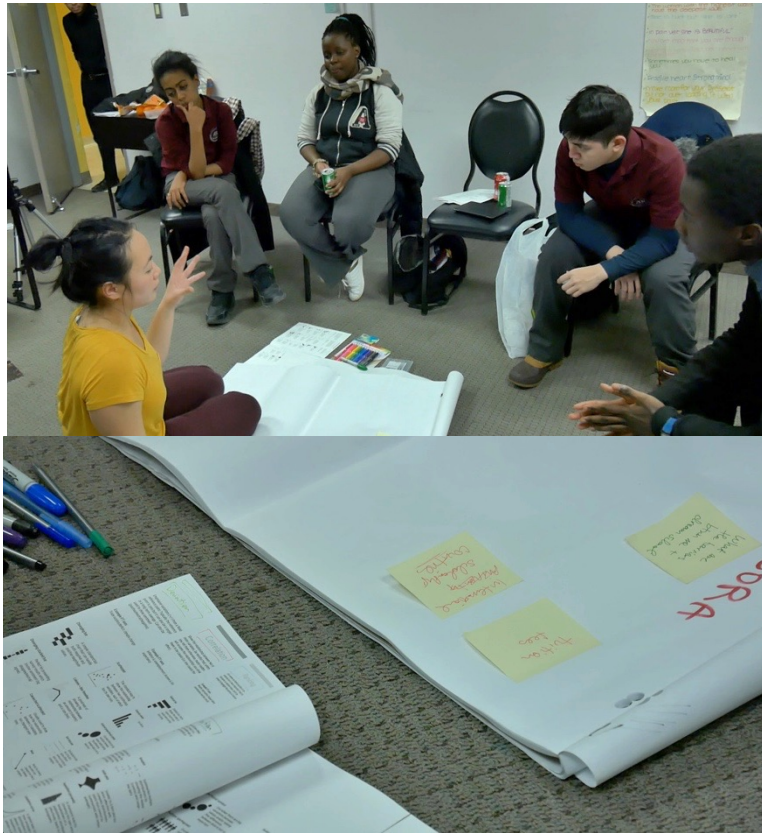
Figure 33. Images of a Rise and Visualize workshop during the creation of cognizable object 3.

Reflection: There was an observed a lack of resonance with the typology of diagrams I provided, even when they were presented in a way that responded to the queries and ideas of the team members. In their social interpretation of this technology (Winner, 1993), uses for them were only conceived and offered to the conversation by members with a predisposed interest in mathematics. The connection between the typologies and the experiences of the team was not well established; ways in which visualization can be introduced would be reiterated in future.

Cognizable Object 4

Next, we explored how our chapters were interconnected. Derek astutely pointed out our topics had several overlaps to tie our stories together in the documentary. This dialogue and visualization of the connections between themes became the conceptual universe.

Action: We gathered around a table with chart paper laid out. Each of us drew a large circle and wrote the name of our chapter inside. We then took turns proposing a connection between two different circles, such as "people are often bullied because they have a weird accent or they eat funny food, so bullying is connected to culture and immigration". Much of the dialogue gravitated towards normative ideas of being *cool*, and how chapters tied back to the pressures youth face to living up to this ideal. The result was a diagram of the conceptual universe that drew us together.

Figure 34. Images of a Rise and Visualize workshop during the creation of cognizable object 4.

I then asked the team about the content we wanted to make in response to these concerns. Members wrote individual content ideas on stickies, ranging from spoken word to videos,

podcasts, maps, and visualizations. While I suggested members could team up for projects, or create projects that drew connections between themes, members unanimously chose to work alone and stay within their initial proposed topics.

Lastly, I asked the group what the documentary should be called. There was a debate between the word *youth* and *newcomers*, as Ransford did not identify with the latter label. Finally, to cheers around the room, we landed on the title *In The Eyes of Youth.*

Phase 2 - learnings and challenges

2*A. Feelings of ownership:* shifts were indicated through interactions with team members. Derek privately shared that while some were initially hesitant about the program, they were now excited to use it as a platform to speak to important issues and "do something meaningful". The time at which the team began selecting their content was the tipping point. It's worth noting that team members did not necessarily consider themselves politically active individuals — this resonates with observations made by Mirra and Garcia (2017); therefore, this social space generated throughways between individual experience and civic participation, no matter from where they were beginning.

2*B. Group v.s. Individual projects:* While I intuited that members should work together on fewer projects to promote dialogue and cohesion, I did not enforce this. Ultimately, everyone chose to work individually on their original topic. While this approach maximized individual engagement, plurality of experience construction with technology, and diversity of the final outputs, a trade-off was the atomizing of the team from group to individual exploration. This also created a coordination challenge of executing eight projects across several topics and forms.

(4.3.5) Production: *In The Eyes of Youth*

It was now time to help the team move through production, by: (A) finding open data sets to supplement their projects as first immersion for critical data literacy, and (B) preparing learning resources for the tools and techniques they wanted to pursue, and the data they wanted to use. This final cycle of praxis was the longest, as it comprised of creating the final outputs.

Resource – publicly available data: We discussed how each member brought their experiential expertises to the team. In turn, I could contribute by finding and sharing publicly available data related to their topics as a starting-point for critical literacy. I focused on already-designed infographics and singular data-based factoids pulled from various reports, as they were an easier entry-point than raw spreadsheets. I printed a selection of this research for members to choose from as a way to spark critical dialogue around what perspectives the data could provide, what it could not, and why. For a list of the data sources provided, see Appendix D (section 6.6)*.*

Reflection: Ayo and Charlotte enjoyed seeing their experiences with immigration reflected in the rankings of their home countries in the 2016 World Happiness Report and debating the results. The TDSB census data on mental health resonated with Ransford, who anecdotally related to the depicted increase in stress and dissatisfaction in the transition to high school amongst himself and his peers. The group discussed possible factors to Toronto's ranking as the second lowest census metropolis area in Canada for average life satisfaction according to Statistics Canada, from high costs of living, to lack of spaces to build community compared to *back home*. Derek said the Kids Help Phone statistics on bullying would help make his project "more professional". Bora echoed this regarding scholarship information from University of Arts London, along with their student diversity report. The data was not interesting for everyone — I suggested to Kokob she could create a bar chart or choropleth map on the number of

languages spoken in each country — she declined in favour of collecting images of food and

traditional dress instead. While Sharifa wanted to find data on "which celebrities have been

bullied" or "which words are used the most by bullies", we were able to *learn by doing* to

understand why such datasets could not be collected directly. We opted instead for her to

collect primary data from her teammates on words they have witnessed bullies use. While

Charlotte found the World Happiness Report data interesting, in the end she opted to explore

her topic through collecting narratives by interviewing her teammates.

Resource - multimedia tools: I selected a suite of low-barrier multimedia tools in response to the

types of outputs members wanted to make:

Multimedia storymap	Google Maps; Knightlab Storymap.JS
Multimedia timeline	Knightlab Timeline.JS
Wordcloud	Wordle.net
Animated video	GoAnimate.com
Static Infographics	Infogr.am
Audio recordings	Smartphone recording applications; Garage Band; SoundCloud

Table 2. the suite of low-barrier multimedia tools that were curated for use
by Rise and Visualize team members, in response to their interests and goals.

After I demonstrated each one, members selected the tools they wanted to use for their

project. I created simple tutorials for each tool on Google Slides for members to follow.
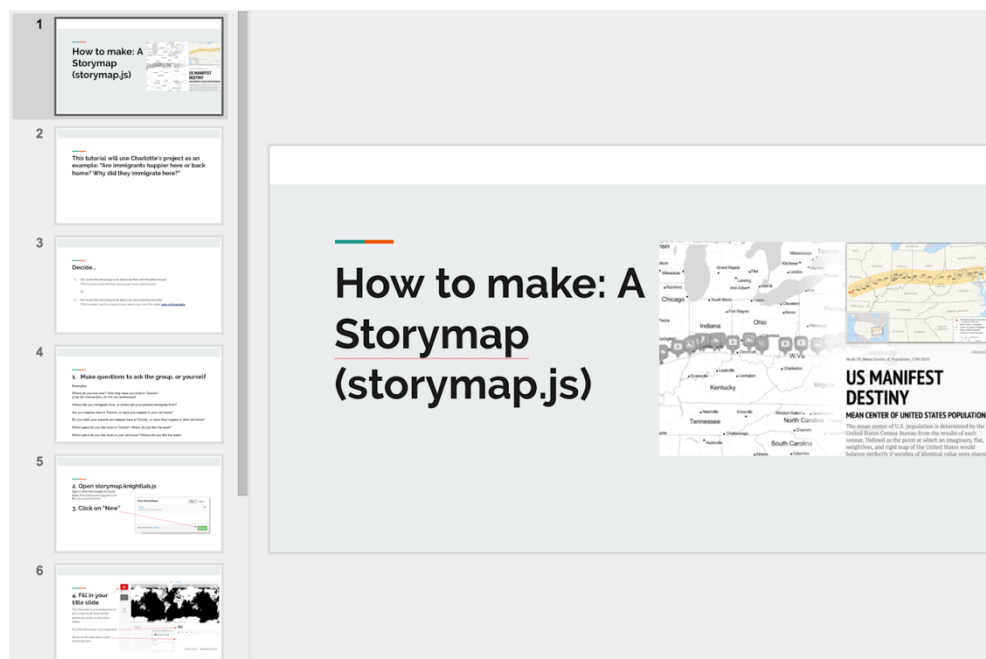
Figure 35. Screenshot of tutorial created on Google Slides, about how to use Knightlab Storymap.js.

Action – Studio: For the remainder of the program, we turned our space into a production studio: working on computers, storyboarding for videos, interviewing our teammates, and recording podcasts and spoken word. The enthusiasm members had for making their projects a reality with simple but professional-looking web tools was palpable. Charlotte reflected, "At first I was scared to make a story map because it seemed hard. But when I sat down to learn with [April], I realized it was easy and I did a great job. I loved learning more about my friends by interviewing them about what they went through when they immigrated here."

Phase 3 – learnings and challenges:

3A. Balancing time and resources with desired outputs: by phase three, all team members were highly motivated to create a polished multimedia piece, although most were new to the tools. Each member needed one-on-one technical guidance and troubleshooting with their respective projects, which there was not enough time for within the three sessions allocated to studio production. They were excited about the public nature of the thesis exhibition, so the ambition of many projects was larger than time and learning curves allowed. As high school students,

members also occasionally missed sessions due to other responsibilities. The team agreed to meet voluntarily for three extra weeks, yet by the end some projects still had not been started.

While the purpose of the program was not to create pristine artifacts, members were motivated to represent themselves well at the exhibition. Therefore, in reciprocity, it was my responsibility to assist them with completing at least one output they were satisfied with. I continued meeting individually with members to negotiate scope and help them with completion, which they volunteered further time for. This intensity of participation therefore meant excessive time demands on team members who are minors and volunteering their time on top of many other responsibilities.

"In the Eyes of Youth" Celebration

In our final session, we held a show-and-tell of our projects. It was a time to celebrate our achievements and share what we learned about data, diagrams, multimedia, and ourselves. I was humbled by the love and encouragement shown to each person as they stood at the front of the room. There was such strong interest amongst members in seeing and understanding one another through the things they created. Comments included "I want to see Sharifa's interview", "let's listen to Ransford's podcast again", and "my culture is more meaningful to me now because Charlotte interviewed me about it". This final reflection was a powerful bookend to the connections that were made between us and our differences and similarities in our concerns for the future. The space had generated critical consciousness amongst us as a public.

As of writing this document, the final output, *In the Eyes of Youth*, has not yet been completed. I will combine workshop footage, member interviews, and their final projects using Klynt, an interactive documentary publishing platform that allows for layering of multimedia outputs on top of video footage. Once a rough cut is complete, I will invite members back to FYI for a test screening, where suggestions and feedback can be given. At this time, I will also distribute the

post-program consent form to receive their permission to display their outputs at the thesis exhibition.

(4.4) Knowledge exchange: exhibition and future directions
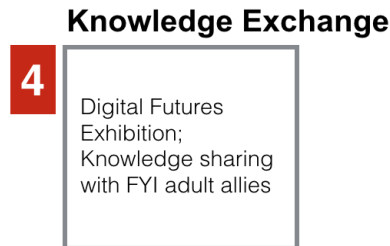
Knowledge Exchange

Figure 36. Step 4 in creating a critical media literacy space.

Kotilainen noted that youth engaging in civic media projects "need cross-generational audiences for generating discussions and getting their voice out in the public sphere" (2009, p. 254). A critical media space therefore necessitates creating platforms for such knowledge exchange.

The thesis exhibition will serve this function, as another social space through which the public is extended. Team members are invited to represent Rise and Visualize to speak with public visitors on opening night, share their projects, and, if they wish, invite show-goers to create cognizable objects of their choosing, such as Kokob's culture map. This is a gesture of continuing to circulate knowledge, ability and power among members. On display will be *In the Eyes of Youth,* the democratic design framework, and the cognizable objects created by the team. In short, it will be another *space that young people occupy.*

In the Eyes of Youth will also continue to be hosted on a web domain and exhibited at opportunities identified by members and adult allies at FYI. The annual general meeting for FYI management and board of directors is an example.

Lastly, a meeting will also be organized between members and FYI staff to share projects, learnings, suggestions for the types of programming and resources they'd like more of based on this experience. This will be an opportunity for members to impart knowledge to their adult allies and assert power through negotiation of their desires and needs. A possible outcome of this meeting is strategizing involvement in FYI's Youth Incubators Program, where youth-led initiatives are given funding and mentorship to get their ideas off the ground. For instance, Ransford is considering starting a podcast group for newcomers at FYI as a continuation of his work in Rise and Visualize. Charlotte indicated interest in interviewing more people at FYI about their immigration experiences.

The reciprocity demonstrated in Rise and Visualize therefore lies in its conception as a pilot program, from which its participants galvanized their strengths and learnings to share with adults and engage in the direction of future activities at the hub.

Chapter 5: Conclusion

(5.1) Successes, challenges, and limitations

Successes - creating a space between lived experience and civic engagement:

As a space for civic engagement, there was observed evidence that Rise and Visualize helped to promote critical consciousness among the team members. The infrastructure, space and language developed for the Rise and Visualize program allowed members to explore everyday experiences, bridge them with larger civic concerns via the chapters they chose for *In The Eyes of Youth*, and engage in discourse around the interconnections between each members' concern of choice via the creation of a conceptual universe.

It also applied particular technological competencies - data and diagram production - as a negotiated resource for exchange in a partnership, rather than a learning object to be banked upon participants. A space was created between previously isolated spheres of experience: the young people opened new possibilities for themselves around the tools and abilities at their disposal, while the possibilities, challenges, and resource requirements for making spaces for technologies to be reconsidered by the under-designed-for were made clearer.

Findings from the critical media literacy process

Indicators of a successful critical media literacy process include the extent to which there was a connection drawn between the forms (i.e. data and visualization) and lived experience, as way of forming a stronger position regarding how the worldviews and interests of participants may or may not be reflected in dominant outputs.

A key lesson from this experience was the importance of using *local data* so that this connection can be formed as strongly as possible. By local data, it is meant that the data is situated within

or reflects the lived experience of the participants. The extent to which data and its visualization resonated with participants by the end depended largely on the locality of the data used.

Ransford responded well to the *TDSB Students (Grades 7-12): Emotional Well-Being* data (see section 6.6 Appendix F), as he identifies as part of the community from which this survey was tallied. Exposure to this data-set was a factor in shaping the focus of his topic, *mental health and the transition from middle school to high school*. In contrast, Derek did not see himself reflected in the broad statistics found in the Kid's Help Phone *Teens Talk 2016 Report;* although he expressed aspiration to use 'facts' in his project to "make it more official", he did not in the end feel compelled to use the provided data in his final project, noting "data is boring, people want to watch stories because they're more interesting". Charlotte collected her own data in the form of recorded interviews and pinned map locations with those teammates who were newcomers to Canada regarding "whether they are happier here or back home"; not surprisingly, she exhibited a great amount of pride in her work, and felt it told a richer story than what the World Happiness Report data was able to.

In our final team reflection, we agreed that collecting our own primary data in the neighbourhood would have been more interesting, which reinforces the importance of using local data, and also ties back to the hunch of my initial Adult-led PAR prototype (section 4.2.2). This would be the natural next step to take with the team, if the engagement were longer term and we were able to engage in another cycle of praxis together.

These observations point to a perception of impenetrability that continues to characterize data as an approachable medium, particularly larger datasets that are abstracted from localized experiences. This finding has implications for the uptake of open data by everyday citizens, who may feel distanced from the *language* required to engage with data on larger scales.

Another space for improvement would be to reiterate the way in which the *visualization* of data is introduced. I observed that the typology of charts introduced in Phase 2 was a large conceptual leap for team members, and in the end, diagrams were forms chosen only by three out of eight members: Charlotte (storymap), Ayo (timeline) and Kokob (word cloud). In future, more arts-based activities will be explored and developed to help participants experientially immerse with their data in a more bottom-up way, similar to Bhargava et al.'s data sculpture exercise described in *Data Murals* (2016).

Nonetheless, these conversations suggested that new critical awareness had been opened regarding the potential for working with data in future, including ways to visualize it. There was demonstrated interest in continuing to explore the representational forms introduced in the program.

Challenges and limitations—considerations for Youth-Adult PAR:

Kim noted the further exploration needed around the scenarios in which youth-led, adult-youth-led or adult-led PAR projects are beneficial (2016, p. 48). Rise and Visualize was developed as based on an adult-youth PAR structure. The learnings gained regarding the respective roles of adult and youth through for Rise and Visualize may contribute to Kim's highlighted area of inquiry:

1. **Approaching a partner outside v.s. within realms of experience:** conceiving a PAR project with communities the researcher is a part of would allow for the highest degree of partnership, as it would be deeply informed by existing circumstances. However, there is a case for dialogue between different spheres of experience to address the insularity and isolation that often plagues research in design, technology, and beyond;

2. **Degrees of participation in research:** A limitation to involving young people in a pre-designed research space, even with PAR methodology, is they are marginalized at the start of the partnership. In this manner, initiatives are more *youth-populated* than *youth-*

led. As an institution available to and in service of adults, research, like formal politics, has an inherent power dynamic of ageism. A gesture of involving young people in research would be the most successful as a long-term engagement that conceives its agenda with young people at the decision-making table. Given the short-term nature of a Master's degree, this was addressed by taking extra steps with members to translate learnings into recommendations for resources and programming for long-term adult allies at For Youth Initiative.

3. **Control of representation vs. time investment:** The goal of affording young people control of their own representation in PAR needs to be negotiated with the intensive time commitment required. Within limit, adult research partners should encourage maximum time for youth partners to explore and experiment with tools for representation, but they should be prepared to offer their experiences in navigating scope, and assisting with execution of final desired outputs.

4. **Risk of coercion in encouraging participation:** Since youth participants are being engaged outside research frameworks of their experience in youth-adult PAR, they are not necessarily incentivized to participate to the degree adult partners want them to, based on methodological goals. The degree to which youth participate should be reconsidered as a valid measure of the success of PAR efforts, as banking particular privileged forms onto the youth is another form of domination. A way to address this is to not privilege forms of participation, and to always present opportunities to engage more deeply as a choice.

(5.2) Recommendations

Going beyond tools to critical space in civic media-making with young people:

In this research, data and diagram production was presented as modes of civic participation that

seldom include young people. While we're experiencing a boom in the creation of tools to democratize the collecting, organizing, and visualizing of data, it is argued that creating tools alone are a partial and technocratic approach to sharing social capital. Less explored is *how* underrepresented communities may adopt, reconceive, even complicate the purposes and effects of these technologies, rather than be *educated* into their dominant rhetoric. This document explored this gap via the creation of *critical space,* in which young people can discuss the potentials and challenges around data and visualization, and how it may or may not fit into their agendas.

A key learning from creating Rise and Visualize was the importance of developing opportunities for young people to *see themselves reflected* in representations to interfacing their lives with broader civic life through critical media. It was crucial to work bottom-up, both in the type of data considered, and the ways in which the data is explored and *played with*. Also critical was providing a public platform through which they could create representations of their own.

As designers, we are in a privileged position to foster these critical spaces. With our expertise in the aesthetic, technical and rhetorical opportunities in our crafts, we are able to forge bridges with publics who do not participate in the same spheres of cultural production as we do.

The recommendation in this research is a call to action for designers to consider their tools not as a solution, but an offer in reciprocal exchange with the people whom they seek to engage. We can offer beautiful new possibilities for self-representation and agency, but must consider how to offer them in ways our partners see fit. Towards this end in Rise and Visualize, we all, in our own ways, were able to more clearly and critically articulate the constellation of tools, concerns, and possibilities for representation at our disposal, marking a positive trajectory from no matter where we began.

(5.3) Future Directions

The most gratifying outcome of embarking on this journey was creating a space for civic media creation that everyone wanted more of. A community had been created through our weekly meetups, and members had become invested in the topics and multimedia forms they were exploring. Many asked if they could sign up for the program again. There were ideas abound as to what they would love to make next, and new topics they wanted to explore, if they were given the time.

A long-term, consistent engagement is the key to maximizing the potential benefits of this methodology. This first iteration could be considered a pilot of a process that could be translated into a longer-term critical media literacy program in the future. Once the thesis exhibition is ended, opportunities for applying to grants will be explored as a funding source to continue this work at For Youth Initiative. Rise and Visualize members would be invited to the table to discuss what this could look like. The democratic design framework and accompanying case study also serves to inform others looking to develop similar critical media spaces. It also serves to open more inquiry within the fields of design, education, technology, and visualization around the processes and methodologies by which we engage communities on the terms of partnership, reciprocity, and transformative change.

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Appendices

(6.1) Appendix A: Research Ethics Board application approval letter; Rise and Visualize Consent form A and B

November 06, 2017

Dr. Patricio Davila
Faculty of Design
OCAD University

File No: 101110
Approval Date: November 06, 2017
Expiry Date: November 05, 2018

Dear Dr. Patricio Davila, Ms. April Xie

The Research Ethics Board has reviewed your application titled 'Expressive Atlas'. Your application has been approved. You may begin the proposed research. This REB approval, dated November 06, 2017, is valid for one year less a day: November 05, 2018. Your REB number is: 2017-45.

Throughout the duration of this REB approval, all requests for modifications, renewals and serious adverse event reports are submitted via the Research Portal.

Any changes to the research that deviate from the approved application must be reported to the REB using the amendment form available on the Research Portal. REB approval must be issued before the changes can be implemented.

To continue your proposed research beyond November 05, 2018, you must submit a Renewal Form before October 31, 2018. REB approval must be issued before research is continued.

If your research ends on or before November 05, 2018, please submit a Final Report Form to close out REB approval monitoring efforts.

If you have any questions about the REB review & approval process, please contact the Christine Crisol Pineda, Manager, REB secretariat at
or

If you encounter any issues when working in the Research Portal, please contact our system administrator via

Sincerely,

Nancy Snow
Acting Chair, Research Ethics Board

Rise and Visualize Co-Producers
Form A: Participation Consent and Media Release
(PRE-PROGRAM)

Start Date and Time:	TBD
End Date and Time:	TBD
Length and duration:	Every Thursday 4:00-6:00PM; optional reflection group 6:00-6:30PM
Location:	For Youth Initiative, 1652 Keele Street Community Hub, Toronto ON M6M3W3
Program contact:	April Xie, OCAD University OR Mamawah Kaindaneh, For Youth Initiative
Transportation:	If there is any transportation required outside of 1652 Keele Street, For Youth Initiative will provide TTC fare.

Description: *Rise and Visualize!* Is an 8-10 week program led by April Xie, OCAD University for her Masters thesis research. The workshops will take place every Thursday 4-6PM, with an optional 30 minutes at the end for reflection. Participants will become researchers, designers, and storytellers by creating visual stories about their neighbourhood(s). Possible subjects include: transportation, food security, parks and recreation, demographics, housing, and the arts. Participants will be given a 'Co-Producer' credit in the thesis paper and design project. Participants will own rights to the work they produce, which April will ask permission to feature in her thesis paper and public exhibition (Spring 2018), at the end of the program. The technique for storytelling we will explore is *information visualization* - turning data into visual form to make patterns visible.

Benefits: Participants will receive a $10 honorarium per session attended, given at the end of the program as a thank-you. Participants will be credited as a Co-Producer in the thesis document and design project, which will be exhibited to the public. Participants will apply skills in visual design, storytelling, leadership, research, and civic engagement. We may gain new knowledge about the neighbourhood through our research. Final materials produced can be added to resumes and portfolios, and connections will be made with professionals and academics in design. April and Co-Producers can look for exhibition opportunities together after the thesis project.

Potential Risks: The content being made is intended for public exhibition at OCAD University, and other possible future opportunities. Throughout all workshops, participants will be reminded of the public nature of the representations they are creating, and will be given clear opportunities to exit the project, or adjust their stories at any time. Participation is completely voluntary and participants can exit any time - there is no pressure to continue by April Xie or any other person.

If you have any questions/concerns about this form, please contact April Xie. **Please complete the form below and submit it to April Xie or Mamawah Kaindaneh by the first day of *Rise and Visualize*, (date).**

(1) Participation Consent: I hereby give consent for _____ to participate in *Rise and Visualize!* as a Co-Producer. I understand the possible benefits and risks of participating. I understand that I will own the rights to the content I produce in this program, and I will be asked for permission to use the material in April Xie's thesis at the end of the program. I understand the objective of this program is to make material that will be shown to the public. I anticipate completing the full 8-10 week workshop series, including possible travel around Ward 11 York South-Weston. I understand that

Co-Producers are responsible for their own actions, and I hereby release For Youth Initiative, April Xie, and OCAD University, from any and all damages and/or costs incurred as a result of my participation.

X_____.   Date:_____.
Signature (*signature of parent or guardian if under 18*)

---

(2) Media Release: April Xie would like to take photographs and video of the workshops, as documentation for the thesis paper. April Xie would also like to write down quotes, comments, and summaries of discussions at each workshop for the thesis paper. There will be a shared online blog for *Rise and Visualize* that is open to the public, that may feature photos, video, quotes, comments, and summaries of discussions. Blog posts will be approved by you in advance if you are mentioned or featured. At any time, you have the right to ask for your picture/video to not be taken, or for the words you speak to remain confidential or anonymous. Your images, videos, quotes, and summaries of your discussions may be featured in:

   a. April Xie's Master of Design thesis paper for OCAD University
   b. April Xie's final thesis exhibition at OCAD University (April 2018)
   c. An online public blog written by April Xie and Co-Producers in *Rise and Visualize!*
   d. For Youth Initiative gallery, website, or social media for promotional/educational purposes

I, _____ hereby give permission for (check all that you agree to):

☐   videos
☐   photos
☐   quotes
☐   summaries of discussions i'm involved in

to be used in the above materials, used exclusively for April Xie's Master of Design thesis at OCAD University and For Youth Initiative purposes.

 X_____.   Date: _____.
Signature (*signature of parent or guardian if under 18*)

---

(3) Participant choice of credit: Participants will receive a 'Co-Producer' credit in the documents and final project of April Xie's Masters of Design thesis at OCAD University. Participants will own the rights to the work they produce in *Rise and Visualize!*. At the end of the program, April Xie will ask participants for permission to use their final work in the thesis paper and public thesis show.

_____ hereby choose to receive credit as a Co-Producer of the work in April Xie's thesis document and design project, towards completing her Master of Design at OCAD U.

I would like to be given credit using:
(*circle **one only**, and fill blank*)

A.   Full Name: _____

OR

B.   First Name only: _____

OR

C.   Anonymous - option to choose an Alias: _____

X_____.   Date: _____.
Signature (*signature of parent or guardian if under 18*)

---

(4) Contact information

Please list the best ways to reach you, in case there are announcements, updates, or questions from April Xie or For Youth Initiative.

☐   Cellphone - call: _____

☐   Cellphone - text: _____

☐   Home landline: _____

☐   Email: _____

☐   Other: _____

Start Date and Time:	TBD
End Date and Time:	TBD
Length and duration:	Every Thursday 4:00-6:00PM; optional reflection group 6:00-6:30PM
Location:	For Youth Initiative, 1652 Keele Street Community Hub, Toronto ON M6M 3W3
Program contact:	April Xie, OCAD University OR Mamawah Kaindaneh, For Youth Initiative

Description: This consent form is for *Rise and Visualize!* Co-Producers (participants) who completed the 8-10 week program and have created materials over this time. Co-Producers own the rights to the content they created during this program. April Xie (OCAD University) must request your consent to release the content you created, for her thesis document and exhibition in April 2018. You are being asked for consent at the end of the program, as you now have full understanding of what material you are consenting to release. By releasing this material, you are aware that it will be viewed by members of the public, and you fully understand any privacy risks you consent to by releasing your work with your name attached as the creator. There is also opportunity to release the material you produced for other opportunities in advocacy/exhibition/education etc. For Youth Initiative may want to use your materials for promotional or educational materials for their programs. Your work will always retain your chosen co-producer name as credit.

---

(1) Release of Created Materials: as a *Rise and Visualize!* Co-Producer, I _____, hereby give permission to April Xie to use the content I created during *Rise and Visualize!* for the following public-facing material:

☐ April Xie's thesis document (Spring 2018) towards completing a Master of Design, OCAD U
☐ April Xie's thesis exhibition (Spring 2018) towards completing a Master of Design, OCAD U
☐ Future public-facing opportunities that I agree to release my material for, including for educational, advocacy, exhibition, or research purposes.

X_____.   Date:_____.
Signature
(*signature of parent or guardian if under 18*)

---

(2) Participant choice of credit: You have the opportunity to keep or change the way you choose to receive credit in public-facing platforms your work will be featured in. Please re-state the form of credit you would like to receive.

I would like to be given credit using:
(circle **one only**, and fill blank)

A. Full Name: _____

OR

B. First Name only: _____

OR

C. Anonymous - option to choose an Alias: _____

X_____.   Date: _____.
Signature
(*signature of parent or guardian if under 18*)

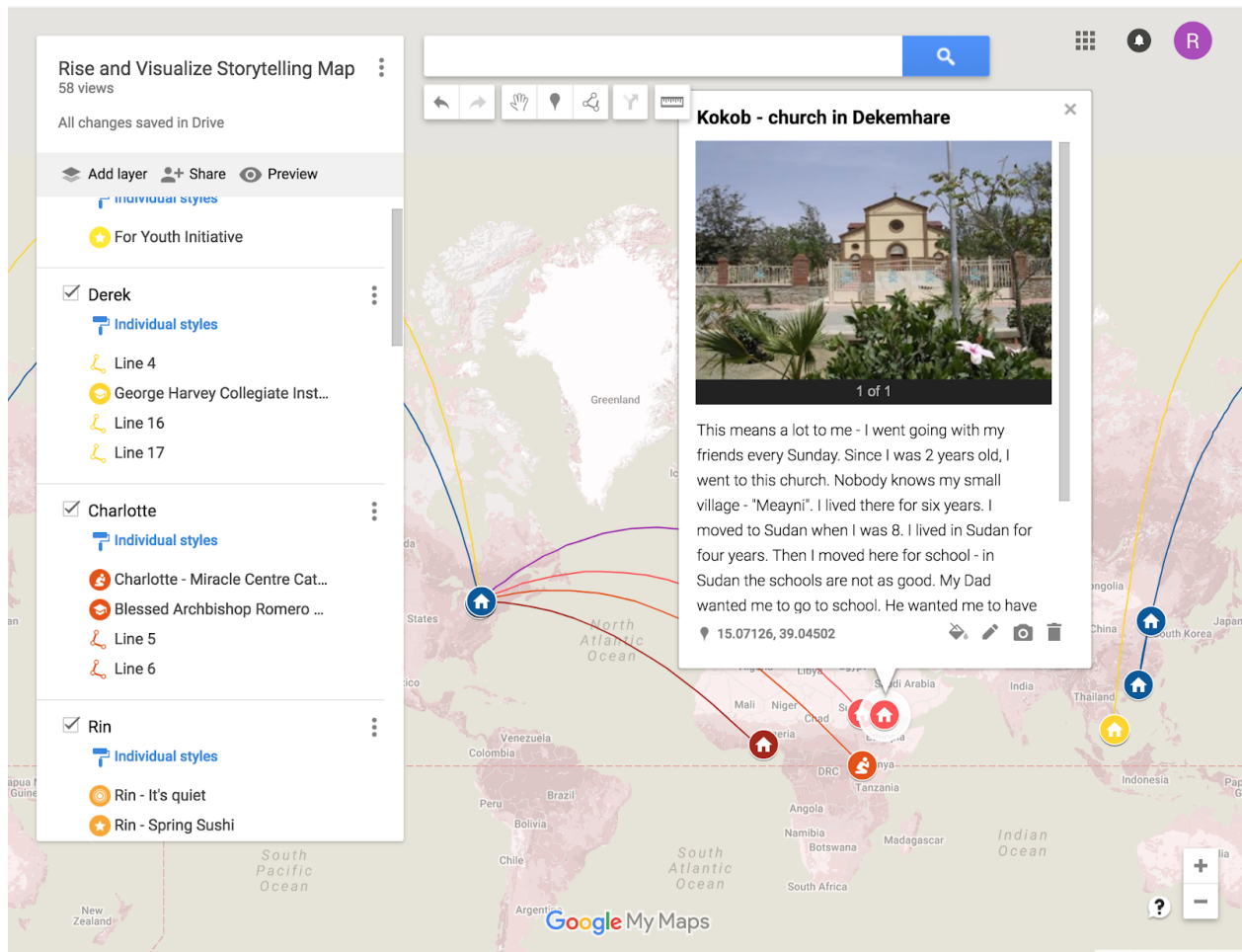## (6.2) Appendix B: Rise and Visualize Cognizable Object 1 – Screenshot

Figure 37. Cognizable Object 1 made in Phase one of Rise and Visualize (Exploring Us)

(6.3) Appendix C: Rise and Visualize Cognizable Object 2: Table of recorded responses to the post-it note prompts

I define myself as	Friendly; An observer, a helper, an aspirer to become a problem solver; A Star *; The best person in the world; Nice; A kind person ^_^; Video Editor; Friendly with others; A flower; Happy; Gamer; Runner
My favourite place is	My country; Restaurant and where I can buy food; Any quiet place with trees that have falling brown or yellow leaves; My bedroom :); My bed zzzzzz; The shore of a beach; FYI; CNE; Shopping Mall; Great Value; My home country; Canada's Wonderland; Bulk Barn
I miss	I miss my friend, my grandma, my grandfather, my cousin; Good cartoons for kids/pre-teens; My family; Myself; my country (Uganda), my friends (back home), my cousins and brothers (back home); my father, my family, my friends; i miss my friends; my cats (in vietnam); chubby soda; my niece!; my cats, my bathroom, my friends; i miss my aunt, uncle, cousin; my grandmother, grandfather; my home, my parents, my friends; vietnamese food
I am curious about	Being a famous person!!!; A human's mental state; life as Beyonce; Space, history of the universe; insects and the universe; everything i don't understand; the cosmos!!!; A lot of things I want to know more about everything; DRAWING
If I had $1 million I would spend it on	use it to make more money $_$; making a business and being a lot millioner; going to central st martins college; starting my life's work of making my country a great nation; me, myself and I :*; shopping, multiple things; stocks; buying a lot of food (poutine); make my life better!; making more money

Table 3. Table of recorded responses to the post-it note prompts, Cognizable Object 2 in Phase 1 of Rise and Visualize (Exploring Us)

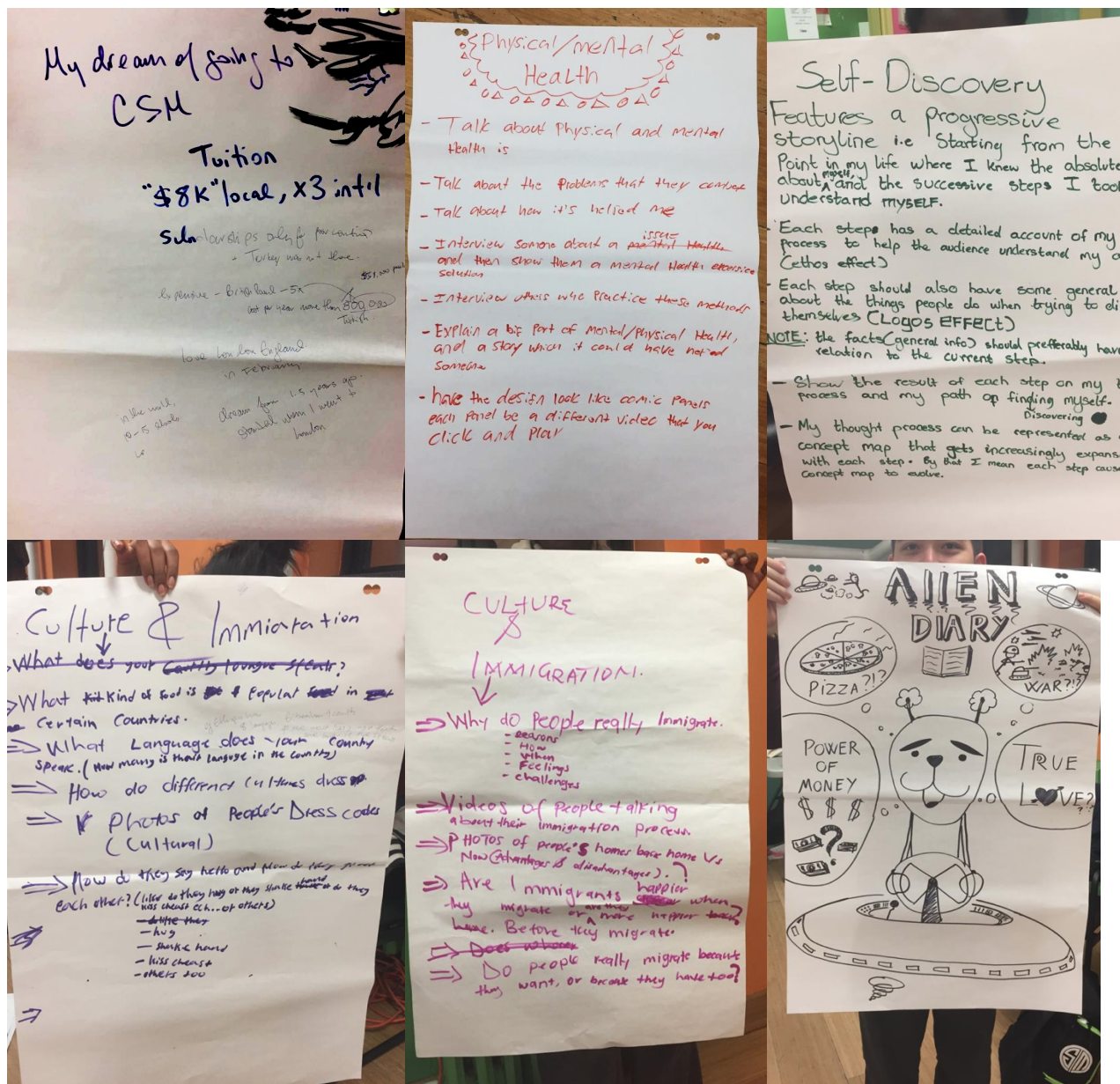## (6.4) Appendix D: Rise and Visualize Cognizable Object 3: Images

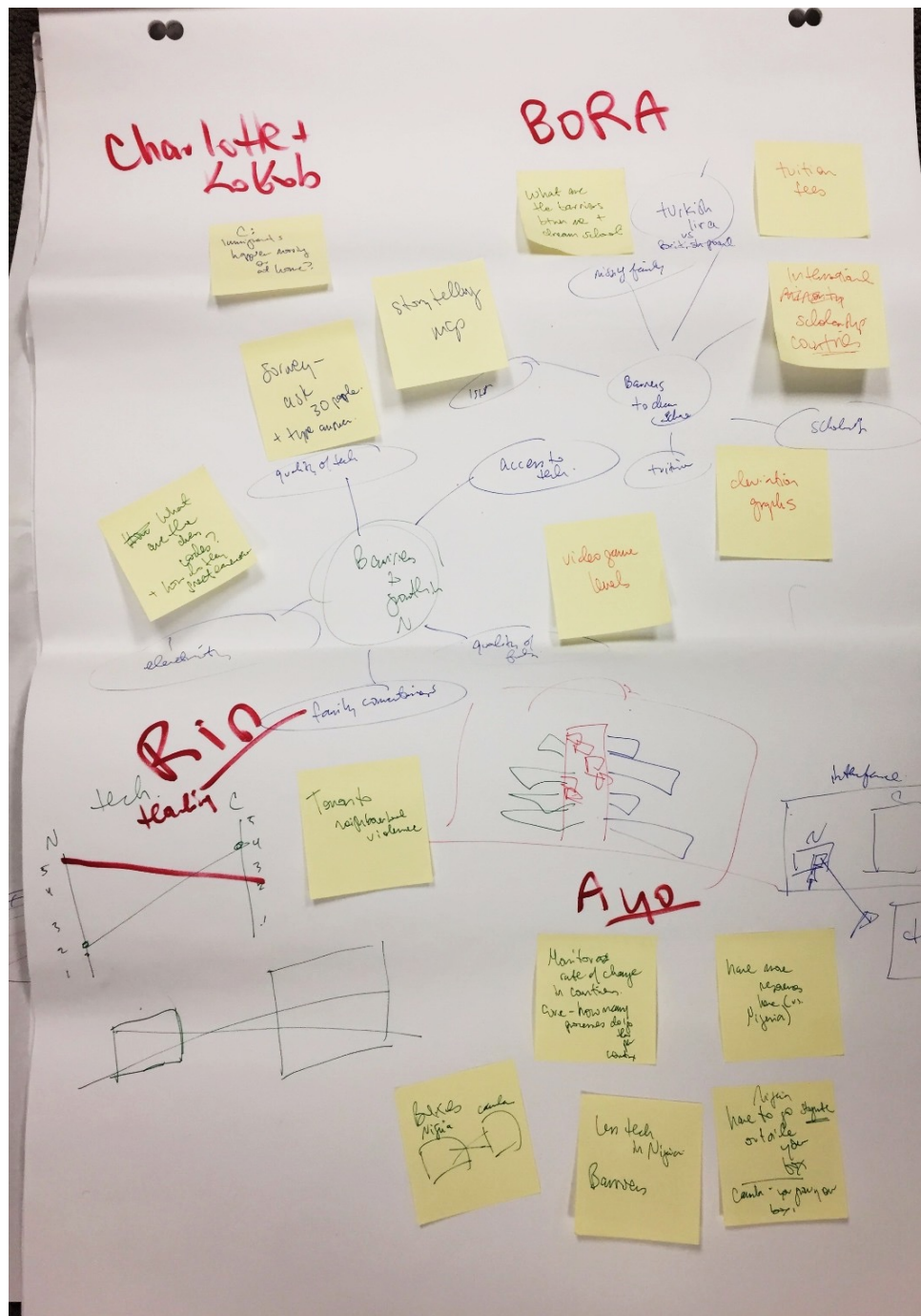Figure 38. Cognizable Object 3 part 1 made in Phase two of Rise and Visualize (Our Universe)

Fig 39. Cognizable Object 3 Part 2 made in Phase two of Rise and Visualize (Our Universe)

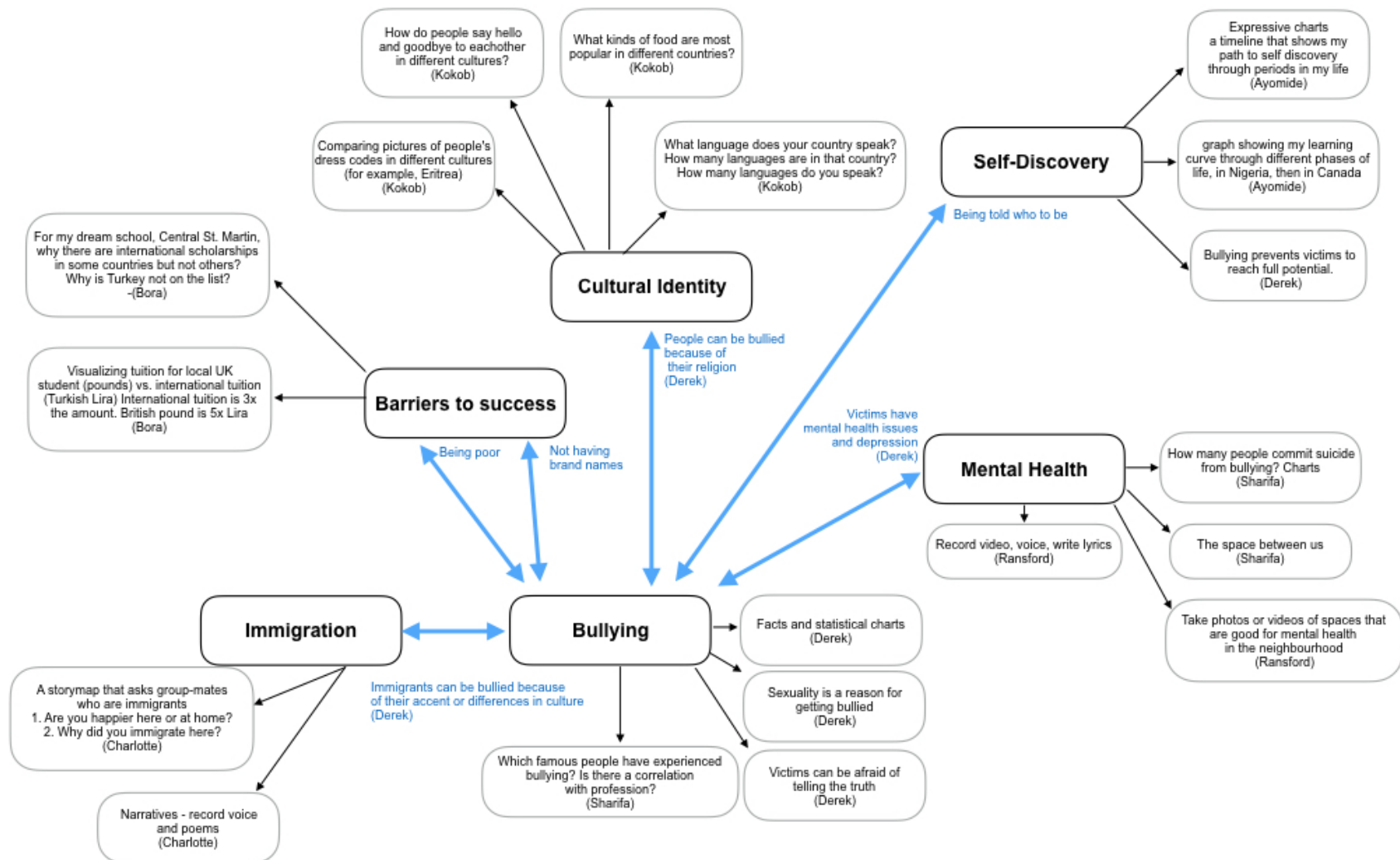# (6.5) Appendix E: Rise and Visualize Cognizable Object 4: Conceptual Universe

Figure 40. Cognizable Object 4 (conceptual universe) made in Phase two of Rise and Visualize (Our Universe)

(6.6) Appendix F: List of data sources provided to members of Rise and Visualize in phase three (production)

Data source	Of possible interest to
Wellbeing Toronto Map. Youth mental health services in Toronto from reference period 2011.	Ransford
Statistics Canada. Average level of life satisfaction of recent immigrants to Canada by source countries.	Ayo, Charlotte
Statistics Canada. How's life in the city? Life Satisfaction across census metropolitan areas and economic regions in Canada.	Ayo, Charlotte, Rin
The Economist Intelligence Unit. EIU Index of indexes city liveability rankings, 2014.	Rin
Sustainable Development Solutions Network, World Happiness Report 2017. Ranking of happiness 2014-2016 by country.	Charlotte, Ayo
TDSB Student and Parent census 2011-2012. TDSB Students (Grades 7-12): Emotional Well-Being.	Ransford
Statistics Canada. 150 years of immigration. Distribution in percentage of the foreign-born population, by place of birth, Canada, 1871 to 2011.	Charlotte
University of Arts London. List of available scholarships to UAL.	Bora
University of Arts London. Student diversity report.	Bora
Infoplease. List of languages spoken per country.	Kokob
Kid's Help Phone Canada. Teens Talk 2016: Report on the well-being of teens in Canada.	Derek, Sharifa

Table 4. List of data sources provided to members of Rise and Visualize in phase 3 (production)

(6.7) Appendix G: Rise and Visualize Cognizable Object 4: Screenshots of final youth outputs in progress
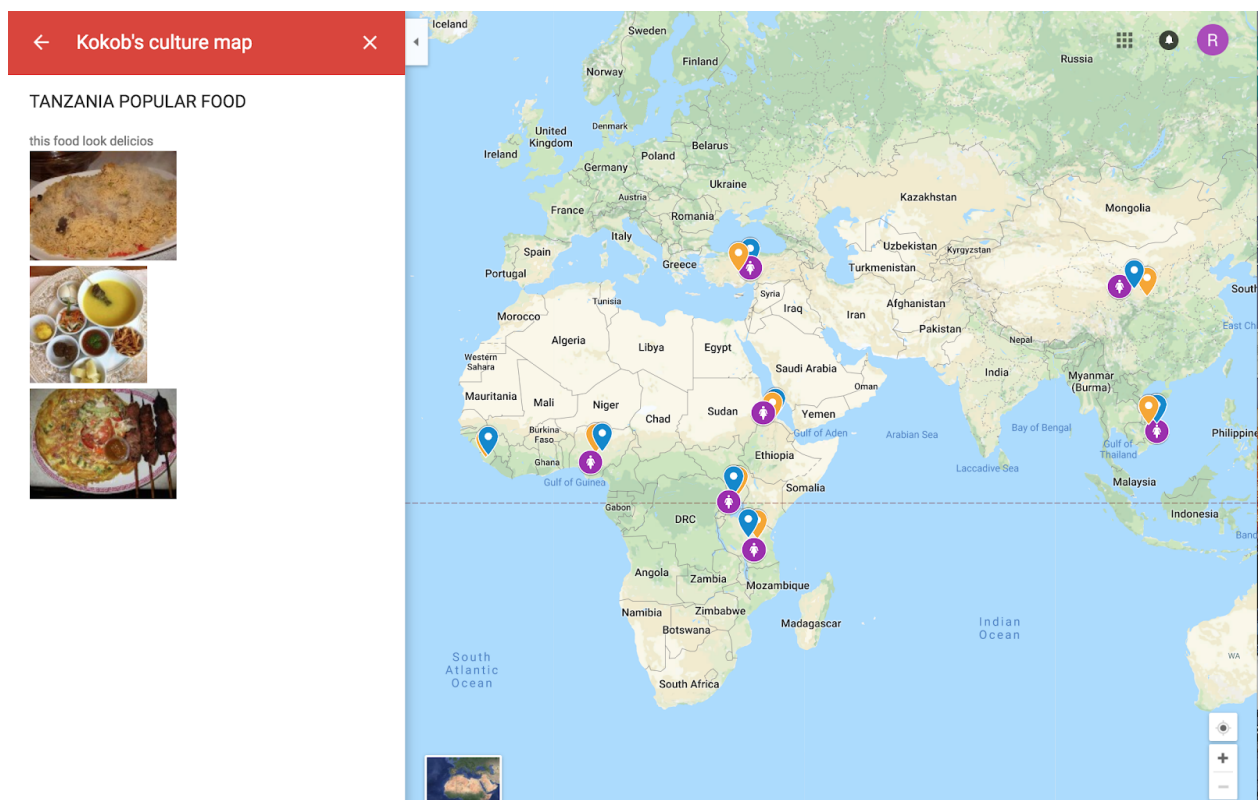
Good morning, good afternoon, or good evening. This is just a warm welcome from me to you at whatever time you are deciding to view my part of my rise and visualize team's beautiful project. Who is the person greeting you today you might be asking well i'm Ransford Bendu and i'm here to talk about feelings.

I'm joking.to say i'm going to talk about feelings is to put my topic in layman's terms. I am going to talk about mental health and the issues that affect people in toronto, majority of these individuals are are going to be youth from preteen to teenager.

As a teenager myself i can honestly say that a lot of us are worse than we look emotionally and mentally.

Our outlooks on the world change the moment we enter high school.

Once we walk through those large doors, we are flooded with a combination of
 crippling stress,
devastating loneliness,
 commanding insecurities ,
and many more feelings

which cause a lot more damage to a person, let alone a teenager.

This isn't just one teenager's opinion,

 studies conducted by The TDSB showed a direct correlation between leaving middle school and student's emotional well-being dropping.

The data shows the difference between middle school and high school student's positive feelings which are things like
 liking the way they look, to
emotional challenges, like feeling nervous or anxious.

The emotional well being of students fell from 87% in grade 7 to 69% in grade 12

Little do you know
She would wake up every morning wondering about when she gets older and things gets colder
Her childhood went by, but everyday felt like she was in fire…

She wanted to be one of the smart girls in class, the one that is part of the team
The one who would not be afraid to be herself
But her dreams were not going to be clear like a crystal or a chandelier
and no one knew what was truly inside her
A little girl trying to impress her father ...

In a real world she puts on her best smile yet did little anyone know she was falling apart
She desired to see someone else gets swallowed by the darkness inside
So that it wouldn't be ready to swallow her for even a little bit of time…

All she really needed was to be liked like "her"
Cause lately she's been feeling all alone
She tried to do everything she could and never took anything in return
She said she'll keep holding on till the day she'll be letting go…

"But you should know i won't be the same person anymore. So give me love like her cause lately i've been wondering if this is where i belong and maybe i should probably ask, do you want be here or do you want me gone" …

She was told she wasn't good enough
And that She won't make it out alive
All the pain and the truth she wore it like a battle wound
So afraid and confused she was young,broke and bruised
Her heart couldn't take it all cause it was not what it was made for...

Now she is broken down and tired going in circles trying to get somewhere
Everyone who was counting her out now they are nowhere around
She knows she'll never grow old enough to pay her dues
Its starting to feel like she walked five hundred miles but never been close…

2014

LAGOS,NIGERIA

This is my Homeland. This is the place where most of who I, Ayomide Salami, was crafted. I lived here for 15 years and 7 months.

Daily Post
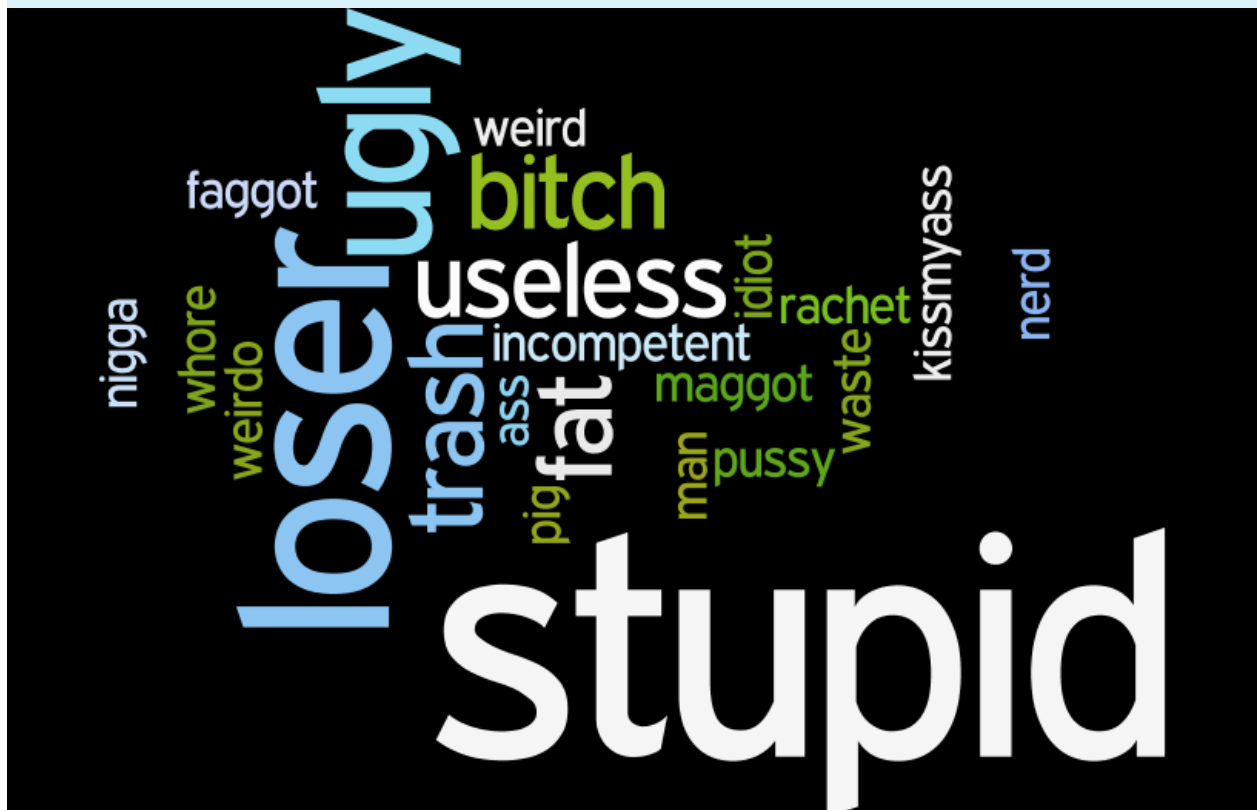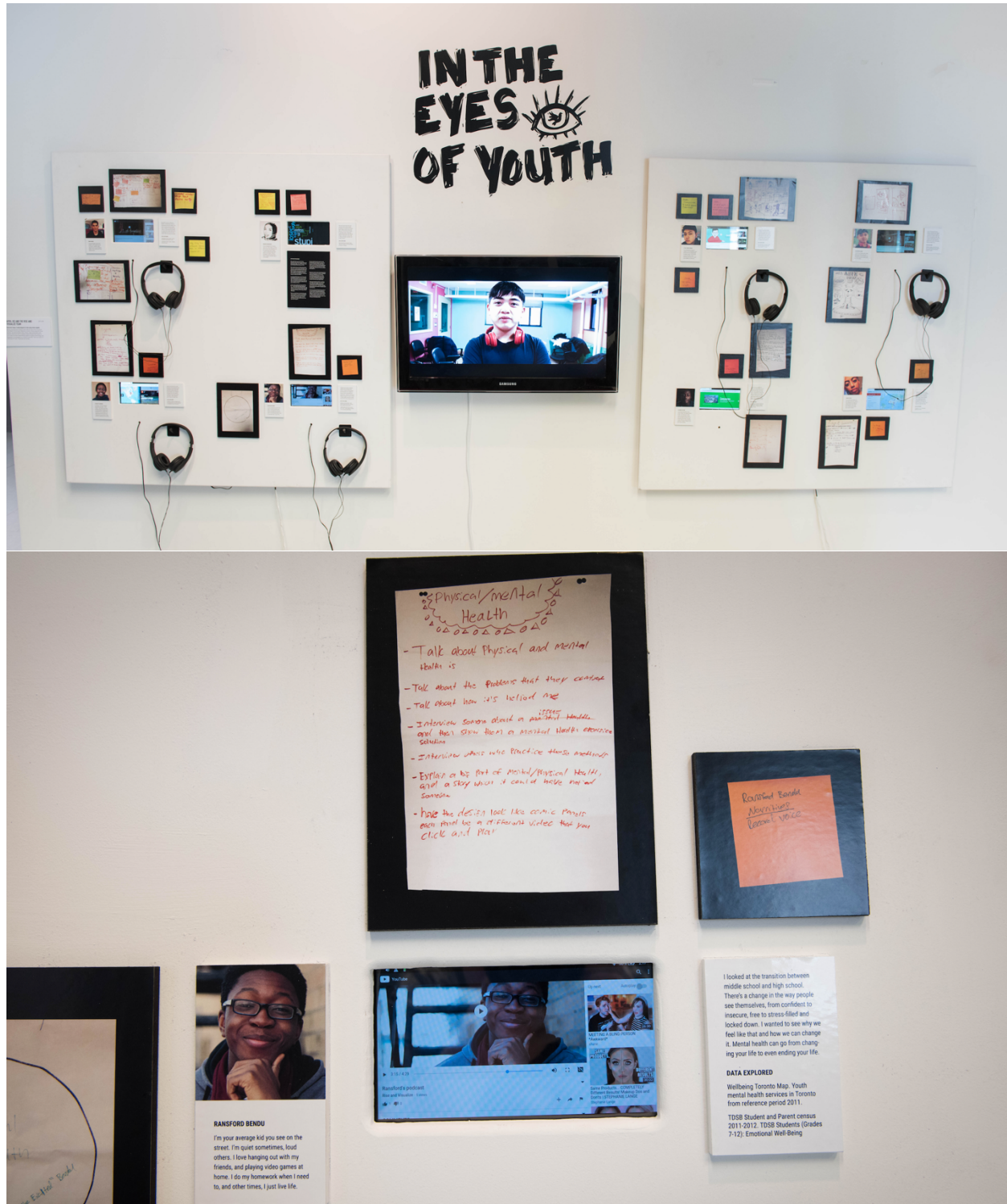
Lagos State, The Commercial Capital of Nigeria

Figure 41. Screenshots of final outputs made in Phase three of Rise and Visualize (Production)

(6.8) Appendix H: Installation of final *In The Eyes of Youth* outputs for the Digital Futures Thesis Exhibition *Diverge*, OCAD U, April 12-15.
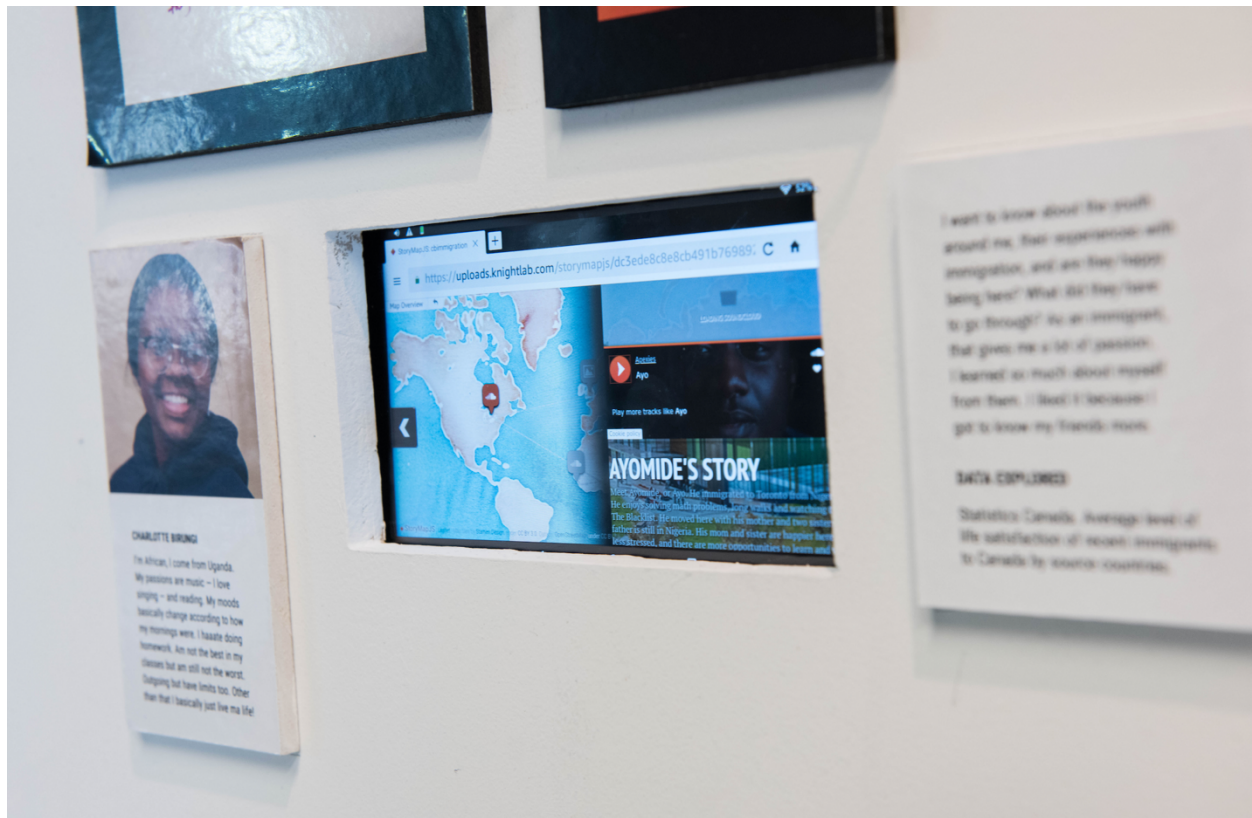
Figure 42. Installation of final *In The Eyes of Youth* outputs for the Digital Futures Thesis Exhibition *Diverge*, OCAD U, April 12-15.