"Investigate the misusage of technology as a gesture of freedom": Glitch Dysfunction in New Media Art and Art Education

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Digital dysfunction in contemporary new media art can be used to outline possibilities for productive and even radical applications of the digital in art educational practices. In this paper, I will analyze the work of a number of contemporary new media artists who use the motif of the glitch. I will provide suggestions for pedagogical approaches that relate and respond to these specific artistic tactics: the provocative, playful, and probing ways that new media art deals with various forms of dysfunction. Art educators at many levels can learn much about how digital technologies can be used to make art by studying how digital technologies fail.

KEYWORDS: New media art, glitch, digital visual culture

Introduction: "Investigate the misusage of technology as a gesture of freedom"

In a statement released as part of his "ASCII History of Art for the Blind" (2002), Slovenian new media artist Vuk Ćosić stated the following:

> Artists dealing with technology today are falling in the trap of accepting somebody else's creativity as their limit and in this way they are becoming advertisers for equipment. One possible reaction for an artist is to investigate the misusage of technology as a gesture of freedom, and in this way oppose the mainstream taste and expectations. (2002, p. 547)

In his ASCII film pieces, Ćosić appropriates a variety of popular films, transcoding them so that the original grain of the film is replaced by ASCII code. This code allows the images to be translated into numerous forms: into sound, in the

case of the History of Art for the Blind series, and also into moving images. These ASCII films are fragmented, a stylized approximation of pirated media that Steyerl (2009) called the *poor image*. Ćosić forces the viewer to carefully scrutinize that which is being reproduced and re-presented, as green characters flicker across the screen, forming images and sounds that are ghostlike, partially recognizable, and inevitably fleeting (see http://www.ljudmila.org/~vuk/ascii/film/).

Digital media has presented contemporary artists with a set of approaches that are radically different from those that have come before. Networked digital media has increased the options available to new media artists, as digital networks multiply the possible benefits of increased computing power, but they also amplify the frustration and devastation that can occur when such networks fail.[1] In this paper, I argue that digital dysfunction as addressed by new media artists calls into question narratives of control and efficiency that are central to Modernist forms of public schooling.[2] In order to present this argument, I will first describe theories drawn from philosophy and critical theory that underpin this notion of technological failure.

New Media Art and Glitch Dysfunction

The dysfunctional qualities of digital media are hard to ignore. The more ubiquitous digital media becomes, and the more reliant the user is upon it, the more disruptive the effect when a device or program fails. It is primarily for this reason that new media artists who use dysfunctional aspects of digital technology should be studied: they speak to what Boyle (2015) calls the *in-betweens*, the experiences that exist between anticipated operations and complete inoperability. Art educators can learn much from the work of new media artists who deal in dysfunction, as these artists speak to the critical possibilities inherent in the *in-between*.

New media art makes use of a variety of technologies, both advanced and outdated, high-tech and low-tech, to speak to contemporary issues of representation, cultural hybridity, race, class, and biology. New media art is a form of visuality that has the capability to isolate and highlight the limits of technological progress, while pointing toward new and novel applications for digital technologies. As I have previously argued (Sweeny, 2015), new media art has the ability to leverage dysfunctionality as representation in ways that other disciplines cannot. For the purposes of this paper, I will focus specifically on the concept of the glitch as an artistic tactic that opens up space for critical reflection and responses that reference the numerous shifts brought about by digital technology.

A glitch is, simply put, an error in the normal functioning of a technical process or mechanism. Quite a number of theorists have taken up the concept of the glitch as digital technologies have assumed influence throughout many fields of thought. There have been discussions of the glitch in sociology (Berlant, 2016),

contemporary music (Prior, 2008), and with regard to racism in digital spaces (Nakamura, 2013). There have been calls for "glitch studies" and texts written specifically on "glitch art" (Betancourt, 2016; Mattos, 2015).

In recent art educational scholarship, Wolfgang, Ivashkevich, and Keyes (2017) have argued for the glitch as an artistic form of feminist critique in the popular visual culture of girls. They describe the possibilities for creating glitches influenced by new media artist Legacy Russell that introduce potent forms of visuality into discussions of gender, as well as class and race. This article speaks to the intentional misuse of technology described by Vuk Ćosić in the introduction and, as such, points toward the possibilities for digital dysfunction in art educational practice. The glitch as taken up by new media artists should be understood as an artistic tactic that is intentional, designed to test the limitations of a given system in ways that are not common within scientific, sociological, and/or technological disciplines. Glitch artists use a variety of tactics that make systemic limitations visible, and visual, in ways that are not beholden to a grant provider or corporate bottom line. Examples of glitch dysfunction within historical and contemporary new media art can provide art educators with examples for pedagogical practices that are relevant within the common, community-based, cultural networks of contemporary life.

Glitch Dysfunction: Commonality

Many new media artists utilize digital technologies that are quite common. Australian new media artist Mez Breeze creates works of visual poetry that make use of small chunks of code that are related to both e-mail exchanges and HTML code (for numerous examples, see https://anthology.rhizome.org/mez-breeze). These poems are presented and shared through electronic forms of communication, on websites and through e-mail listservs, allowing the reader to experience them through the medium that they were created in (Net Art Anthology, 2016). Colombian-born, U.S.-based artist Nayda Collazo-Llorens also uses familiar digital linguistic structures.

However, Collazo-Llorens creates large-scale installations that spatially replicate the multilayered forms of communication and exchange made possible through networked digital technologies. This is a familiar motif in her work, perhaps best exemplified in the installation *ESCaperucita & Little Flying Hood* (2009). One result of this familiarity in both artists' works is that the viewer can approach them from personal experience; however, when the text begins to break up, either through Breeze's cut-and-paste manipulation or Collazo-Llorens's spatial rupturing, the viewer is confronted with the *in-between* of successful communication and message failure.

These artists present visual, verbal, auditory, and spatial interpretations of intersecting sociotechnical networks that combine to form what Castells (1996)

called a *network society*. In doing so, they create models for what it is like to be intimately connected, or violently disconnected from such networks. The work of new media artists who conduct similar research can therefore be used to provide visual examples related to the dynamic qualities of what it is like to live within and through complex networks. In the field of education, theorists Davis and Sumara (2006) are the proponents of approaches that draw from the dynamic qualities of complex networks. In much of their writing, they are concerned with the ways that these networks are visualized: "Rather than imagining personal conceptions in terms of actual models or theories, the predominant current interpretation casts these inner representations and models in terms of digital encoding in neurological networks" (Davis & Sumara, 2006, p. 60). For Davis and Sumara, the fractal is the visual form that best represents the intersection between these personal theories and the network models. However, the fractal fails to address the dysfunctional aspects of complex networks.

Individuals living in complex networks know much about networks that fail to connect, or that are exclusionary, or costly, or that often incorporate more noise than signal. As theorized by Baran (1964), decentralized networks incorporate enough redundancy to allow for signals to be rerouted around such noise. Instead of the fractal, educators might be better served by looking to the diagram represented by the rhizome (Deleuze & Guattari, 1987), which is essentially a decentralized network. While the rhizome is not free from utopian interpretations, it nonetheless addresses the aspect of dysfunction that is missing from characterizations of the fractal in education. The rhizome is messy and uncontrollable, but can also be channeled into hierarchical form, if only momentarily. The new media work discussed previously is also open-ended in the same way that the rhizome is described by Deleuze and Guattari. Each of these projects can be taken up by individual users and groups, continually reformed and rethought. Now, of course, this is not a quality that is unique to new media. What it unique is that this variability, as described by Manovich (2001), is built into the work from the very beginning. New media work is designed to be reproduced and repurposed within participatory communities (Jenkins, Ito, & boyd, 2015).

Glitch Dysfunction: Community

New media art is generally made within communities of expertise that allow makers to find support as well as constructive criticism. Online communities such as Rhizome (https://rhizome.org/) have helped to sustain new media artists in a time when funding for the arts has decreased, at least in the United States. The influence of online information-sharing communities upon the development and continued proliferation of new media art cannot be overlooked. The initial structure of the Advanced Research Projects Agency Network (ARPANET), which became what we

know as the internet, allowed researchers at geographically distant sites to collaborate in a manner that was previously unattainable. This spirit of collaboration directly influenced the open source coding communities that developed UNIX, the computer code that was available free to anyone who wished to use it, as long as they were willing to pass along any modifications to the larger network of users (Raymond, 1999).

There are many examples of new media artwork that benefit from a community of collaborators. The contemporary Australian performance artist Stelarc draws from a wide-ranging academic model of collaboration, where engineers, designers, computer scientists, artists, dancers, and actors each play a role in the development of elaborate performance pieces. These pieces also involve numerous machines. For Stelarc, the human body is often placed in a subordinate position within this network; it cannot but fail under the weight of an exoskeleton, or the stress of electrodes controlled from a distance, as in *Parasite* (1994).

While this form of collaboration is still guided primarily by the artists, the participation of the viewer is crucial. More recently, the cyberfeminist collective Deep Lab staged a series of lectures and public presentations that "examine how the themes of privacy, security, surveillance, anonymity, and large-scale data aggregation are problematized in the arts, culture and society" (Wagenknecht, 2014). These are themes that have certainly become more pressing in an age of social media, as corporations harness and monetize the data of individual internet users. Where Stelarc employs traditional academic models for research funding, Deep Lab takes a Do-It-Yourself (DIY) approach, leveraging the power of individuals both inside and outside of the academy.

Approaches to art education that are informed by the dysfunctional aspects of new media art may be able to harness the possibilities for feedback made available within digital media communities. These are communities that are supportive and generally share information freely, as described by Freedman, Heijnen, Kallio-Tavin, Kárpáti, and Papp (2013). In addition to participating in such networks, art educators can take advantage of the open-ended flexibility of digital media by contributing to the sharing economy (Scholz, 2018). Many art educators understand this potential, as art exhibitions are a time-tested tradition; augmenting these traditions through networked digital media, including social media, can only add to the potential for collaboration, as seen in Craig Roland's Art Ed 2.0 site (http://arted20.ning.com), which at the time of publication included over 15,000 members. As Navas (2018) recommends, digital collaboration must be approached in a nuanced manner, as digital media allows for the ability to appropriate information in ways previously unimaginable, which comes along with unique ethical concerns. Acknowledging dysfunction in networks of collaboration can allow participants to reflect upon the process in meaningful ways, just as Deep Lab opens up questions about networked access and power, and Stelarc's performances highlight the lack of control that the internet exacerbates.

Glitch Dysfunction: Culture

Culture is the third aspect of new media art that draws from glitch dysfunctionality that will be addressed. When first introduced to privileged audiences in the early 1990s, the internet was thought to be a utopian space, free from cultural bias and social class distinctions. However, as Nakamura (2007) argues, the internet perpetuates many racial and ethnic stereotypes, at the same time that proponents claim that it is a space free from racial, ethnic, gender, or age-based determinations:

> While the policy rhetoric around Internet access may have been infected strongly with the neoliberal discourse of color blindness and nondiscrimination—a paradigm in which failure to overly discriminate on the basis of race, and the freedom to compete in the "open market" despite an uneven playing field in terms of class, education, and cultural orientation constitutes fairness—the Internet has continued to gain uses and users who unevenly visualize race and gender in online environments. (p. 5)

American new media artist Keith Obadike has contributed greatly to the conversations regarding new media art and race. His blacknetart.com website collects all of his work, much of it created in collaboration with his partner Mendi. Through their work, they remind us that the internet is a creative social space that is far from utopian; it is, in fact, laden with structural inequalities and biases drawn from the past. In an interview with artist and theorist Coco Fusco, Obadike speaks to these biases, and how they influence his new media art works:

> To many white artists, blackness represents some kind of borderless excess, some kind of unchecked expression. Like the commonly confused notion that with African drumming (or substitute jazz) you just play whatever you feel rather than develop structured content. I would argue that this same kind of romantic freedom is also associated with the net so that blackness and this kind of digital frontier become conflated. (Fusco, 2001)

The fact that contemporary digital networks offer the user the ability to participate is important; perhaps more important is the acknowledgment of network structures in multiple aspects of daily life.

New media art operates within networks of social exchange that are, by and large, open to participation by a wide variety of individuals. This is not to make the claim that new media art is a utopian space where all have access. In fact, the same claims were made of the internet during its early stages of development. When Obadike auctioned his *blackness* on eBay, in *Blackness for Sale* (2001), it pointed to the cultural influence that is infused within digital forms of exchange. It also spoke to the *in-between* space that was created, between capitalism and culture, between commodity and identity.

K–12 public art educators have not been immune to the dramatic changes that digital media represents. Digital media has consistently been presented as an educational panacea that is critical for learning and living in the 21st century; often, these efforts promise much more than they are able to deliver (Oppenheimer, 2003). Art educators are in a unique position to be able to respond to these challenges through responses that are both creative and critical, as one of the basic functions of art is to provide a reflection of larger sociocultural themes and beliefs. The history of digital technologies in art educational practices is long and complex; this history points to moments where these responses have been thought through and other times when opportunities have been missed.

Art Education and Glitch Dysfunction

Previous to the historical development of digital technologies, the field of art education had incorporated developing technologies such as photographic processes and chemical paint pigments in important ways (Efland, 1990). As Stankiewicz (2001) writes, turn-of-the-century chromolithographic technology made high quality visuals available to vast numbers of teachers and students alike. However, these technological advancements were to be amplified, and in many cases overshadowed, by the rise of computer technologies in the mid-20th century.

As digital computing became more affordable, artists and art educators started to grapple with the challenges associated with the incorporation of digital technology in classrooms, museums, and community art centers. In the 1970s, artists such as Nam June Paik and the group Experiments in Art and Technology (E.A.T.) were exploring approaches that fused the digital with the traditional. In the field of art education, the response was similar. Eisner (1972) described the possibilities inherent in specialization brought about by early computer systems, while he warned against the concomitant fragmentation and alienation that such systems might produce. In the 1990s, graphic user interfaces (GUI) allowed computer users to visualize information in ways that were not previously possible. Ettinger (1991) described the shifts in notions of interactivity and critical engagement brought about by this new computer art. Later in the decade, Keifer-Boyd (1996) wrote about the possibilities for hypermedia art criticism that harnessed the ability of the computer to present information in a multilinear manner. At the start of the 21st century, Black and Browning (2011) spoke to the freedom and control afforded by digital technologies in pre-service teacher education.

These writings represent only a small portion of the research on digital technologies in the field of art education. While they focus on issues of social technological impact (Eisner, 1972), art criticism (Ettinger, 1991; Keifer-Boyd, 1996), and pedagogy (Black & Browning, 2011), there are also numerous studies that focus on the use of digital technology as an artistic medium. Freedman (1991) studied

the application of computer graphic programs in art education, emphasizing an awareness of the possibilities as well as the limitations of digital art. Stokrocki and Buckpitt (2002) presented research on computer art in Apache schools, noting cultural aspects that influence the use of the computer as an artistic medium.

More recently, art educators have realized the relevance of diverse digital forms of expression and making exemplified in the areas of creative coding, maker culture, and post-internet art. Patton (2013) has argued that art educators can invigorate their studio practices through the creation of video games that are socially responsive and physically engaging. Freedman et al. (2013) described the communities that arise from participatory digital media. And Dufva (2018) explored making with young people that takes into consideration a "post-digital" worldview.

In these studies, art education researchers have generally focused on the efficient, orderly functioning of digital media. There is rarely even a mention of the errors that are familiar to anyone who has used a computer, beyond the occasional software malfunction or procedural error. One notable exception to this can be seen in the work of Garoian and Gaudelius (2001). Their work on performance art and digital technology stands as a rare instance of art educators who view dysfunction as an opportunity for critical reflection and action. The cyborg pedagogy that Garoian and Gaudelius argue for, perhaps most importantly, acknowledges the political implications for digital technologies as they intersect with the body. In a similar manner, Wolfgang et al. (2017) argue for the exploration of the glitch as it disrupts the normalizing effects of contemporary advertising and media, which is inherently political.

In keeping with Garoian and Gaudelius (2001), it must be acknowledged that digital technologies reflect and inscribe power relationships. As they state, "wanting to challenge the idea that identity is merely inscribed by information technology, we must create strategies of resistance that enable us to rethink the construction of identity and technology" (p. 333). To create strategies of resistance, to participate in a critique of digital technologies, is a privilege to which not all have access. Any discussion of digital dysfunction in art education must clearly acknowledge the fact that many are excluded, either intentionally or unintentionally, from these contemporary digital networks. This being said, each person has the ability to respond to these inclusions or exclusions, from the level of the body of the individual.

Conclusion: Nodes of a New Media Art Education?

As I have described, new media artists have the ability to speak to aspects of dysfunctionality through a variety of artistic tactics. Breeze and Collazo-Llorens use common digital communications to point to moments when communications fail. Stelarc and Deep Lab emphasize the collaborative aspects of networked digital

media to exploit and interrupt technological systems as they are simultaneously used. And Obadike and Ćosić speak to the variety of cultures that are created and challenged in digital spaces, interjecting noise into the network. Each of the artists is engaged, at some level, with a critique of the media that they use. This self-reflexivity is nothing new to artistic production. What is new is the way that the critique enters back into the system; as new media artists use the technologies that they critique, these actions are integrated into the functioning of the system.

Art educators can learn much from these dysfunctional elements, as common classroom technologies are also bound to fail, to overload, and to produce noise. These elements can also be seen in a wide variety of networked interactions in the art classroom: communications networks can become dysfunctional as networked technologies fail and interpersonal communications break down. New media art educational approaches can operate in between these dysfunctional moments that are all too common, opening opportunities for critique and creation in the following ways.

First, a new media art education can draw upon technologies and techniques that are familiar to a wide variety of individuals. The artists previously discussed use a range of media, from the simple social media posts of Obadike and Breeze to the highly specialized and expensive robotics and programming platforms used by Stelarc in *Parasite* (1994). While most K–12 educators would not have access to the latter, they would be able to speak to the ways that digital networks enmesh with our bodies, similar to the cyborg pedagogy discussed earlier. Teaching that utilizes the dysfunctional aspects of networked technologies can touch upon a common understanding that can make it personally meaningful, socially relevant, and politically charged. It could also acknowledge the idiosyncratic ways that individual users modify and hack existing technologies, whether it is for critical purposes or not. One specific reference that could inform a new media art education can be seen in the practices of circuit bending, where electronic objects such as toys, games, and instruments are hacked so that they produce sounds and noises that range from pleasing to excruciating (Fernandez, 2015).

Second, a new media art education can speak to forms of collaboration that are truly of our age. One pertinent example of this can be seen in #outsideurdoor (2010), which Mez Breeze presented as part of the Third International Conference on Interactive Digital Storytelling:

> #outsideurdoor pulled together performances from three Twitter characters: a zombie called @MrShamble, a werewolf called @vvolfmaan, and a vampire named @Nozfera2, all of whom seemed to be preparing to enter the Inspace Gallery, or reader's house, and #attackthehumaninside. (Flores, 2013, para 1)

Using the Twitter social media platform allowed Breeze to present this performance in a shared space that combined the traditional gallery with interactivity

taking place at a distance. All involved could participate, responding to posts and helping to guide the time-based horror narrative. In the case of *Blackness for Sale* (2001), Obadike was forced to end the sale when the eBay marketplace determined that it did not meet the criteria for exchange.[3] There are many opportunities for networked collaboration in a new media art education, creating moments in the classroom where the ideas and actions of another are reconceived. If these reconceptualizations were to operate within a shared social media platform, as in the case of Twitter, or a commercial platform such as eBay, then the opportunity for social critique would extend beyond the classroom walls, changing stagnant concepts of creativity and the singular model of artistic production in the process. These are developing collaborative social spaces that are rhizomatic; they are not beholden to historically fixed notions such as political parties, identity politics, or representational democracy (Berlant, 2016; Hardt & Negri, 2005).

And, third, a new media art education can address the complexities of culture as they are conceived of in the early 21st century. We are just beginning to understand the impact that networked digital media is having on previous constructions of culture. This notion can be seen in *ESCaperucita & Little Flying Hood* (2009), where Collazo-Llorens addresses the contestational nature of culture as English, Spanish, and textspeak simultaneously flow together and become fragmented. The changing nature of culture in a digital age is clearly identified by Nakamura (2007), as stated previously. Digital culture is culture, with all of the complexities and intersectionalities that come with it. The culture of new media art is influenced by community support and constructive criticism, just as it suffers from gender, race, class, sexual orientation, and age-related biases. The new media artists that I have shared present models for interventions that can allow art educators and students to identify, to question, and perhaps to subvert the rules and norms that provide the structural support for cultural formations, without any pretense that these actions will bring about long-term systemic change.

This is a new media art education that is, in summary, informed by digital technologies and forms of interaction that are common; models for creation that are collaborative; and modes of critique that speak to developing cultural formations. While not specifically looking to new media artists for his influence, Scholz (2004) has written about similar possibilities for new media art education. Through his Institute for Distributed Creativity (IDC), Scholz created a platform that encouraged educators to embrace contemporary communication models such as peer-to-peer networking, concept-driven curriculum, and just-in-time publishing. Scholz (2004) also has suggested incorporating failure, and risk-taking, as he wrote in "It's New Media, but Is It Art Education?": "Risk taking involves acknowledging failure as part of the teaching process, self-criticism for both teachers and students, and increasing de-specialisation" (para. 29).

Although the IDC is no longer functioning, Scholz has continued to apply these concepts in his Platform Cooperative initiative:

> Platform cooperativism is a growing international movement that builds a fairer future of work. It's about social justice and the bottom line. Rooted in democratic ownership, co-op members, technologists, unionists, and freelancers create a concrete near-future alternative to the extractive sharing economy. (Scholz, 2018)

Scholz's projects embrace the potential of networked digital technologies as well as the disruptions that these technologies create and incorporate. These discussions of technological failure are useful not only for forms of art education that utilize the digital; they can also be used to describe the moments in *traditional* spaces of art education where failure occurs.

Modernist educational systems are prone to dysfunction, although they are conceived of as being models of efficiency. Marshall (1989) analyzes these systems through a Foucauldian lens, looking at how power is generated through complex interconnections and forms of resistance. Art educators who are interested in the critique of power imbalances in educational systems need only look to the everyday forms of glitch dysfunction that wind through the practices of the new media artists described previously. To embrace failure, to acknowledge moments of overload, or to listen for noise in contemporary communication networks might result in a new media art education—one that acknowledges the *poor image*, the *in-between*, and the glitch as it also reflects the unique qualities of our digital, dysfunctional times.

Notes

1. "Digital media" is used here to refer to a broad range of digital technologies, while "new media" specifically refers to art made with and about digital technologies. As Knochel (2017) points out, the term "New Media Art" is somewhat dated. However, I use the term in reference to historical works made using the post-1994 internet, as well as current works that continue to critique what is "new" in digital media.
2. For an in-depth analysis of Foucauldian power and control in school settings, see Marshall (1989).
3. When the sale ended, the highest bid was $152.50 (Fusco, 2001).

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