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Bridges, Not Walls: Speculative Fiction, Technology, and Social Justice

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"Any human power can be resisted and changed by human beings. Resistance and change often begin in art, and very often in our art, the art of words."

– Ursula Le Guin

Unit Overview

Speculative fiction can open doorways to possible worlds that are far more advanced than our own. However, such advancements are often at the expense of individuals or groups of people. This unit seeks to connect speculative fiction and social justice by first giving students an overview of each, and then by intertwining them in a project-based learning experience. By the end of the unit, students will have collaboratively used digital technology to create a product that addresses an issue of social justice and that makes students active, productive members of their communities.

Rationale

Education should challenge students to engage with the world around them in meaningful ways, and it should expand their knowledge of and experience with things they take for granted. If teachers can introduce to students ways to reap the potential benefits of smartphones, social media, and other technologies available to them, students will recognize their own capabilities as participants and active citizens in their societies.

Classroom Context

I am an English teacher at Engineering and Science University Magnet School, which includes students from grades 6-12. As the name of the school indicates, ESUMS places a heavy emphasis on students' work in STEM subjects, which occasionally seems separate from their studies in the humanities. One of the principal goals of

this unit, therefore, is to integrate my school's focus on technology with contemporary social issues that are central to an English classroom. Additionally, in an effort to further unite humanities and science, this unit provides opportunities for interdisciplinary collaboration with teachers in technology and history departments. Teachers may choose to coordinate with colleagues in these departments during the project-based learning portion of the unit.

Teaching Strategies

Throughout this unit, students will apply an analytical lens to the literature we discuss in order to evaluate each author's perspective on technology's potential benefits and drawbacks. To do so, it will be helpful for students to complete charts and graphic organizers to compare the way technology functions in each text and how it facilitates positive or negative outcomes. In addition to writing analytically about the literature we encounter, students will also be asked to write based on their own experiences, in order to connect the issues addressed in each text to real-world topics with which they are familiar. These reflective responses will also involve self-evaluation and require students to consider the impact of technology on their own social lives. Students will use journals to collect their responses, which can be consulted throughout the unit to compare the authors' perspectives.

Class discussions and debates will be useful in this unit to illuminate the ways in which each text can be interpreted in multiple ways, and how each uses extrapolation to depict both positive and negative implications of advancing technology. The teacher should be prepared to play devil's advocate in these discussions, as some of the texts may appear to students to be somewhat one-sided.

In keeping with the underlying spirit of the unit, each phase will provide students extensive opportunities for collaboration and creativity. This is particularly true during the final phase, which uses a project-based learning approach to involve student groups directly with their communities. Student choice is a major element of this final project, as groups will decide the format and purpose of their collaborative effort. Therefore, the teacher will also need to be creative and flexible when assisting students and finding solutions to any issues that may arise.

In addition to finding support in collaborative activities, struggling students will also benefit from having access to a list of texts from which they may choose for daily responses and discussions. Students should be made aware in advance of the relative difficulty levels of the texts available, and they may choose accordingly. Additionally, graphic organizers and guided responses can be helpful for students who struggle with reading to access major concepts in each text.

The first two phases of the unit also provide opportunities for accelerated learners to independently explore these issues. Literature circles and book talks may be implemented to give these students opportunities to share their findings with others.

Unit Description

For teachers of high school students, it is often tempting to dwell on the drawbacks of modern technology and to become frustrated or discouraged by students' dependence on such technology. Indeed, I know many teachers who proclaim themselves Luddites and who see their roles as educators in competition with smartphones and social media, fighting a seemingly impossible battle for students' attention.

While I understand and have felt this frustration, I realize that the progress in smartphone technology is unlikely to be reversed. Students' fascination with their devices is not an obstacle that can be overcome. It is therefore the duty of teachers to make virtual lemonade, so to speak: although we may long for the days when students could be expected to sit attentively in a classroom, gazing forward at a teacher without a world of infinite distractions and escapism in their pockets (or in their hands, concealed under their desks), we must recognize and take advantage of the tremendous opportunities offered by such technology. Most students have access to a device that allows them literally endless options for entertainment, over which they have a sense of ownership, because they dictate its pace and selection. It is necessary, therefore, for teachers to stop viewing technology as necessarily an impediment to learning. Instead, we must decide how to best incorporate digital technology into our curricula and determine how it may be used to enhance our students' involvement with the world, rather than isolate them from it.

The challenge, then, is to redirect students from the escapism offered by ever-present connectivity, and to repurpose that technology as a tool for connecting to meaningful social movements, thereby bridging the gap between students' virtual worlds and the real one in which they live. This unit asks students to consider the possibilities and recognize the enormous potential of their devices, for better and for worse. This will happen over three phases: one in which the students explore speculative fiction and discuss its implications and connections to real, contemporary issues, a second in which connections are made to specific, current issues of social justice, and a final phase in which students will use the technology at their disposal to purposefully engage with their communities. The first and second phases of this unit may be sequenced and taught as independent (albeit connected) units, both of which build background knowledge to be implemented and acted upon by the project-based learning approach of the third phase. The timeline for this unit, therefore, is flexible, as the first and second phases may be shortened according to the teacher's discretion.

Enduring Understandings

- Within a society, it is each individual's responsibility to contribute to that society in ways that will benefit others.
- Technology, including social media, has both the capability to create barriers between individuals, as well as the potential to bring people closer together.
- Speculative literature, especially (but not limited to) science fiction, provides perspectives on possible future worlds based on current trends.
- Technology can be used to facilitate tangible progress and social change in the world.

Phase One: Benefits and Drawbacks of Technology in Speculative Fiction

Phase One Essential Questions

- How does literature depict benefits and drawbacks to technology?
- What is the function of technology?
- How does advancing technology prompt people to reevaluate their relationships to one another?
- Do advancements in technology ultimately have more of a positive or negative impact?

Phase One Scope and Sequence (Suggested Length: 3-4 Weeks)

To recognize the potential capabilities of technological advances, it is useful for students to explore a variety of writing on both sides of the issue. The first phase of this unit will find students reading and discussing speculative science fiction and fantasy literature in order to develop an understanding of the wide range of possibilities of technologies that are available to us, as well as those that are not (yet) existent. Students will also be introduced to the concept of *novum*, which is defined for the purposes of this unit as fictional, futuristic technology that is scientifically feasible. This concept will frame our discussions of many of the texts used in this phase.

Analysis of the readings used in the first phase of the unit will force students to consider how each author has used extrapolation to suggest a possible future for humankind. It is necessary to consider this from the beginning of the unit because identifying the real-world implications of speculative fiction, as well as each author's possible motivations for writing each piece, will condition students to connect fictional concepts to real, current issues. As they read, students will use a journal to collect responses to these texts as they explore the various authors' perspectives, and how each seems to assess humankind's relationship with (or dependence on) technology. How are interpersonal relationships in each text affected by technology? What are the potential benefits and limitations of each technological advance described?

Often, the perspectives found in these texts are multifaceted and complex. Ray Bradbury's "Kaleidoscope," for example, illustrates how advanced technology can fail humans, beginning with the explosion of a spacecraft that sends the crew off to their inevitable deaths. However, radio contact allows the astronauts to have one final conversation and discuss and assess the relative value of their lives. While the technological advances described in the story do not directly facilitate the reflection and forgiveness at the heart of the astronauts' conversation, they do provide context that is necessary to delve deeply into Bradbury's perspective. According to this story, is technology ultimately destructive or productive for humans? "Kaleidoscope" asks readers to consider whether existential peace is worth dying for.

Students will also consider the implications in Bradbury's "The Veldt," in which borders between virtual reality and real lives are crossed. It will be useful to draw connections between currently available immersive entertainment technology and the fictional devices described in "The Veldt." An applicable resource to connect to this story is The VOID[1] , a chain of virtual reality arcades. Showing students one or more of the trailers for the fully immersive virtual experiences available from The VOID can demonstrate the connection between Bradbury's speculation and real advancements in technology. Additionally, contextualizing this particular story by reminding students that it was published in 1950 will be helpful to illustrate how authors use extrapolation to suggest possible outcomes for current trends.

Another relevant text to explore during this phase of the unit is Ken Liu's "Simulacrum," which explores an

advanced (fictional) technology that enables users to create three-dimensional, artificially intelligent replications of others based on memories (and crucially, without the subjects' knowledge). Although these simulacra allow their users to feel more connected to distant loved ones, the story highlights the manufactured and impersonal nature of digital relationships. Students may prepare for reading this story by brainstorming the possible benefits and drawbacks of preserving memories digitally. For example, an Instagram user may post a "throwback Thursday" image featuring others in situations they may no longer wish to remember. Does this violate individuals' rights to privacy? If so, to what extent? Negotiating ethically ambiguous territory in this context will calibrate students well to read and analyze Liu's short story, in which a relationship between a father and daughter collapses as a result of these issues. The potential advantages of the novum described in the story, however, are clear, providing much room for discussion and debate.

Students may also look to short texts like Kurt Vonnegut's "Harrison Bergeron" or Daniel Keyes' "Flowers for Algernon" to consider the relative social value of technology to different groups of people. In each of these stories, which societal groups are benefiting, and which groups are being exploited or constrained? Students may discuss the implications raised by these stories: the civilians of 2081 depicted in "Harrison Bergeron" are physically and mentally restricted, but government workers are not, and Charlie Gordon, the subject of the experiment in "Flowers for Algernon," has an intellectual disability. If these two texts are divided among students in a class, reading could be followed by valuable comparative discussions in groups facilitated by the teacher. Asking students to role-play as government officials in "Harrison Bergeron" or medical scientists in "Flowers for Algernon" will also be useful in order to evaluate the risk and reward (and the recipients of both) of the technology described in each text. Considering questions of inequity (specifically, how technology may play a role in the subjugation of some groups for the benefit of others) at this point in the unit will be helpful, as these issues will connect to the social justice focus of the unit later on.

Excerpts from Dave Eggers' dystopian novel *The Circle* will be examined and discussed. Specifically, readers will look to points in the novel when the main character relinquishes her privacy in the interest of "transparency," which refers to publicly broadcasting every moment of her life to viewers online. Students should recognize the connections here between online "oversharing" and Eggers' suggested potential outcome. Reflective writing will be valuable here, as students will likely have very different ideas of where the line should be drawn between individuals' personal and publicly shared experiences. Providing students with a list of scenarios and asking them to evaluate each as "shareable" or "not shareable," along with an explanation for each answer, could be an effective writing prompt in this case.

Although vastly different in their execution, each text from this first phase of the unit presents a complex and conflicted view of advanced technology. While flawed, the technology in each is capable of bringing individuals closer together and/or making substantial advancements in society. To address this, student groups will critically examine one of the pieces of technology that they have encountered in this unit's readings, and consider how they might redesign it in order to correct its shortcomings. In doing so, students will identify the potential constructive uses of the device as well as its limitations. After groups have redesigned their chosen devices, they will present their work to the class, who will then try to identify any new potential dangers posed by the reimagined technology.

In this first phase of the unit, forced debates will be held frequently to monitor students' understanding and evaluation of the issues raised in our readings. In these sessions, students move to a particular area of the room, depending on whether they agree or disagree with a statement on the board. For example, after reading an excerpt from *The Circle*, students may have to agree or disagree with a statement like *sharing every moment of people's lives on social media would be good for society*. After choosing their sides in the

room, student groups will have a limited amount of time to prepare arguments based on issues in one of the texts we have read. Students on both sides of the issue will present their argument and then construct a rebuttal to the opposing side. During each of these debates, a rotating small group of students will be selected as judges to decide the outcome.

Phase One Non-Print Resources

Teachers may find it helpful to incorporate film and television excerpts into this portion of the unit. *2081*, a short film based on "Harrison Bergeron," is a dark and engaging adaptation that depicts Vonnegut's "handicap" technology in grim detail. Selected episodes from the television series *Black Mirror* may also be used to illustrate benefits and drawbacks of speculative technology: "Nosedive" features a social ranking system, in which individuals' ratings for one another determines their access to real-world resources. "The Entire History of You" imagines an implantable device that records and stores everything an individual sees, which could lead students to make meaningful connections with the issues raised by "Simulacrum." Finally, the episode "Arkangel" focuses on a new child-monitoring technology marketed to parents, with which users can track their children and see everything their children see, ostensibly so that parents can keep their kids safe. Questions of privacy raised here can connect to those raised by Eggers in *The Circle*. In each *Black Mirror* episode, the advantages of these technologies are clearly demonstrated along with their limitations, so any of these would be useful for students to debate. Furthermore, clear connections between currently available devices and technology are identifiable in each of these episodes, which will help illustrate for students the process of extrapolation. Teachers should be cautious, however, when implementing any of these *Black Mirror* episodes, as each contains potentially offensive language and content.

Phase One Extension Texts

During this first phase of the unit, students who are inspired to move beyond the assigned class readings will have access to extension texts. For students who wish to pursue a full-length exploration of the potential effects of hypothetical medical technology, Keyes' novel version of *Flowers for Algernon* will be available. Students who are interested in considering perspectives on weapons of mass destruction may choose to read Vonnegut's *Cat's Cradle*. Literature circles will provide students opportunities to further explore and discuss these extension texts and connect them to the overarching themes and guiding questions of the unit. If students wish to take on more challenging text options independently, they may wish to explore Harlan Ellison's "I Have No Mouth, and I Must Scream." This short story, while exceptionally dark (and in many ways problematic from a social justice standpoint), does provide an extrapolative view of artificially intelligent technology and its embedded dangers. Readers who wish to explore experimental media could be directed to Sarah Gailey's online short story "STET," which provokes questions about the ethics of artificial intelligence, as well as the contemporary topic of self-driving cars. Students who choose to explore this text may benefit from discussing in advance the structure of the story and the significance of the titular term.

Phase One Culminating Activity: Novum Product Review

The first phase of the unit will culminate in an analytical project that also allows students room for creativity. To put to use their accumulated knowledge of advanced, hypothetical technology, students will explore the potential drawbacks and benefits to a novum from one of the texts we have examined during the unit. To demonstrate this, students will create a mock product review of a device described in one of the texts we have read, but that does not yet exist in the real world. A student may choose to review a focal point in one of the texts, such as the Simulacrum camera from Ken Liu's short story, or the "handicaps" depicted in "Harrison Bergeron," or they may dig more deeply and review a product alluded to briefly, like the children's automated

picture painter mentioned in "The Veldt." In doing so, students will be forced to consider the ways that advancements in technology cannot be classified as positive or negative in and of themselves; each novum described holds the potential to not only damage human relationships, but also to advance society in some way (often by providing opportunities for people to understand and/or help one another). Product reviews will include illustrations, completed digitally or by hand, from the students. Each student's completed review should also contain references to the text in which the device is mentioned, which should be highlighted or otherwise made clear through text formatting.

Phase Two: Using Literature to Examine Issues of Social Justice

Phase Two Essential Questions

- What is *justice*?
- What is *social justice*?
- What real world issues need to be addressed to promote social justice?
- What does it mean to be a responsible citizen?

Phase Two Scope and Sequence (Suggested Length: 4-5 Weeks)

As the unit progresses into its second phase, students will begin to focus on the topic of social justice. It will be useful for students to participate in an initial brainstorming session to consider their own understandings of *justice* and *social justice*. Because these terms carry a variety of connotations for different students, establishing working definitions at the onset of this phase of the unit will provide a framework for our studies as we move forward. Additionally, students may compose short journal entries to address our other guiding questions for the second phase of the unit. Students will return to these questions periodically throughout this phase and use them to contextualize the resources they encounter.

Some students (and parents, for that matter) may need to be assured at this point in their studies that social justice transcends political labels. Depending on their background, it is possible that students are aware of the pejorative connotations of participation in social justice (for instance, the condescending term *social justice warrior*). Therefore, the definition used within the classroom should focus not on terms that carry political implications, but instead on concepts of kindness, community, and empowerment. For example, a student who opposes redistribution of wealth might frame his or her understanding of social and economic justice as an expansion of total wealth.

To link our studies from the first phase of the unit to a focus on social justice, students will begin examining speculative fiction that connects more directly to issues of social justice. This phase of the unit will examine Ursula K. Le Guin's short story "The Ones Who Walk Away from Omelas," so that students may consider their own views of what constitutes justice. Is it enough to "walk away"? Students will then read and discuss N.K. Jemisin's "The Ones Who Stay and Fight," a response to Le Guin. In this text, the citizens of the utopian society Um-Helat employ interdimensional travel and observe the iniquities of present-day Earth in order to remind themselves that battling corruption must be a lifelong pursuit, which requires substantial sacrifice in order to be maintained. Following these two readings, students will participate in a debate in which they must defend either the dissidents from Omelas or the social workers from Um-Helat. How is each group acting according to a specific definition of "justice"? Is one group more "just" than the other? Putting these texts

against one another will force students to examine with greater focus the way they define justice, how that term connects to relative levels of suffering experienced by different groups of people, and to what extent people have a responsibility to others in their society.

As students progress further into this phase of the unit, they will explore Nnedi Okorafor's novella *Binti*, which discusses the process and consequences of othering between different groups within a science fiction setting. This short text addresses issues of colorism and xenophobia, and asks the reader to sympathize with the (initially perceived) antagonists. Additionally, in order to negotiate a truce between opposing groups, the protagonist is forced to adopt a new identity. This raises valuable questions for students to discuss: is it possible to maintain a distinct cultural identity in a heterogeneous society? What happens to individuals' identities when cultures assimilate? To supplement class explorations of otherness, excerpts from René Laloux' 1973 animated science fiction film *Fantastic Planet*, as well as selections from Denis Villeneuve's 2016 film *Arrival* may be engaging and unexpected resources for students to consider how separate cultures perceive each other. Again, when using these film resources in the classroom, teachers should use discretion, as *Fantastic Planet* contains (animated, non-graphic) sexual activity, and *Arrival* contains potentially offensive language. To further illuminate the real-life implications of these works of science fiction, students may read and discuss Maddie Crum's article for *The Huffington Post*, "We Need More Sci-Fi Movies that Celebrate Otherness."

During this portion of the unit, students will also investigate nonfiction articles that link digital technology and social media to issues of social justice, in order to emphasize the real-life relevance of the issues addressed in the fiction we have read. Students will read articles that focus on recent social movements, such as Black Lives Matter, #MeToo, and the Egyptian revolution of 2011, and discuss the impact that technology has had on connecting people involved with such movements. Wael Ghonim's TED Talk, "Let's Design Social Media that Drives Real Change" and Caroline Simon's article for *USA Today*, "How Social Media Has Shaped Black Lives Matter, Five Years Later" will be particularly useful resources to share with students at this point in the unit.

When reading and discussing each article, students should identify the particular aspects of technology that have made each movement effective, as well as the likely limitations of technology's role in each situation. Ghonim's TED Talk, in which he discusses and reflects on his role in the Egyptian revolution, articulates both sides of this issue clearly, suggesting that, when attempting to initiate positive change, it is important that social media "reward thoughtfulness, civility, and mutual understanding"[2] . When responding to this text, students should consider how to incorporate these ideas in their own upcoming outreach projects.

Students will undoubtedly be familiar with the subject of cyberbullying, which clearly illustrates the potential harm that can be caused by technology, especially social media. However, high school students are in a unique position to evaluate possible solutions to this issue. Lauren DiMaria's article "Cyberbullying and Depression in Children" from Very Well Mind suggests a variety of reactive approaches to dealing with online harassment. However, after reading this article, students may be inclined to generate additional, preventative measures that could be taken to combat the systematic mistreatment of others through social media.

One of the primary goals of this portion of the unit will be to inspire creativity in students as they begin to think about their final product, to be created in the third phase of the unit. It is therefore important to expose students to literature that emphasizes the potential use of technology as a tool in the fight for social justice. In "Technology's Promise of Social Justice Remains Unfulfilled," Kimberly Bryant argues, "the tech world has by and large been silent when it comes to creating tools for social change… Tech has a near limitless potential to

be utilized as a transformative tool for our society and we have not yet scratched the surface of its true potential."[3] Students may read this short article and use it to prompt "what if…" brainstorming sessions, considering the specific issues that they feel should be addressed, and how an app (or some other form of digital technology) could be developed to initiate positive change in that area.

Some of the reading material used in this phase of the unit will challenge students to evaluate their own encounters with problematic material related to technology. Students will read excerpts from Lisa Nakamura's "Gender and Race Online," which addresses toxic masculinity in gaming culture, as well as racist imagery that is perpetuated through video games. Caitlin Dewey's article for *The Washington Post*, entitled "The Only Guide to Gamergate You Will Ever Need," will also be relevant for students to think about how misogyny is embedded in video game culture, and how that can have destructive, real consequences for people involved.

Phase Two Extension Texts

Students who wish to take on additional reading in this phase may be directed to Toni Adeyemi's *Children of Blood and Bone*, a contemporary young adult fantasy novel that grapples with issues of colorism, police brutality, and class struggle. Students are also encouraged during this phase of the unit to independently seek out additional non-fiction articles addressing issues of social justice, which they can bring into class discussions.

Phase Two Culminating Task: Media Critique

In order to connect the information from these articles to students' first-hand experience, students will be asked to conduct a critique of a piece of digital media with which they are familiar. A list of suggested media will be provided for students who are unsure where to begin. For this project, students will apply a critical lens to a video game and evaluate its treatment of marginalized groups. Along with their critique of the game, students will provide a list of specific suggestions for how the game may be improved to be more inclusive. A presentation of this project will form the culminating activity for this phase of the unit.

Phase Three: Using Technology to Initiate Positive Social Change

Phase Three Essential Questions:

- How can technology be used to initiate positive social change?
- What are the potential strengths and limitations of technology as an instrument of social change?

Phase Three Scope and Sequence (Suggested Length: 4-5 Weeks)

In the final phase of the unit, students will embark on a project-based learning mission. By this time, we will have established a spectrum of potential capabilities for technology, based on the literature we have studied in class. Students may be discouraged by some of the ideas suggested by the literature they have reviewed, but the goal of this unit is to put that frustration to use and create a classroom of activists. Inspired by the positive end of that spectrum, as well as the social justice readings we have examined, students will determine ways that they can use the technology at their fingertips to initiate real change and progress in their communities.

In a class project, students will keep these ideas in mind while they monitor their own digital lives and interactions for a set period of time. After monitoring their online activity for several days, students will bring their findings to a classwide data pool, in which we will categorize their activities. Students will evaluate the nature of their interactions and other doings online by first determining whether they are social or solitary. If the activities are social ones, students will determine the extent to which that "sharing" could potentially benefit others, based on the hierarchy of social value Clay Shirky describes in *Cognitive Surplus*. Students will classify each interaction or activity they recorded according to Shirkey's distinctions: personal sharing, which neither requires nor creates interpersonal connections; communal sharing, which brings individuals together based on a common interest or situation; public sharing, in which people collectively create a "public resource"; and finally, "civic sharing, [which is] specifically designed to generate real change in the society the participants are embedded in."[4] This idea of civic sharing will direct students' final project for the unit, in which students will consider how to best use the online resources at their disposal to generate the most value for their community while addressing a specific issue related to social justice.

Project-Based Learning: Brainstorming and Establishing Groups

Until this point, students have explored a variety of specific issues related to social justice as observers, and they should now spend some time brainstorming to identify the specific social justice topics on which their independent studies will focus. A general list of topics can be brainstormed by the entire class, from which each student can write a "wish list" of preferred topics. Additionally, students should attach to this list a summary of their interests and abilities related to media production. Based on common interests and/or abilities, the teacher may choose to create groups of students for the final project. At this point in the unit, the teacher will likely find it useful to remind students that working toward social justice is not synonymous with any political alignment or affiliation. When being grouped together by a teacher for a project such as this, students run the risk of conflicting viewpoints or beliefs. However, at this point in the unit, students should remember that class definitions of social justice transcend political views, and that the overall goal of the project is to emphasize empathy and humanitarianism. If students struggle to find a topic that interests them, the teacher may provide suggestions that are not necessarily political: environmental justice, public health issues, homelessness, etc.

Students may brainstorm as an entire class to generate suggestions for possible forms this project may take, and the teacher may provide ideas as well. For example, if a group of students wishes to address homelessness in their community, they may create a podcast on which they conduct interviews with individuals experiencing homelessness, organizers of shelters and outreach programs, local police, and others connected to the issue. (It should be noted that in such a case, informed consent procedures may be necessary to obtain IRB approval. Teachers should check with their school administrators before allowing or suggesting that students conduct interviews.) However, such a class conversation should not stifle students' creative process, as one of the goals of the project is to implement technology in innovative ways. Still, to impart the scope of the project, the teacher should establish some general criteria for the final product, regardless of what specifically students choose to create. For example, each group's finished project should incorporate tangible connection with the community.

Many students may be inspired to begin designing projects without further explicit direction from the teacher, and creativity should certainly be emphasized at this point. However, some groups may find it helpful to look over a list of suggestions for the final project. Aside from the aforementioned podcast project (which may consist of audio, video, or both), groups may consider organizing an event in their community in order to raise awareness about a particular issue, which could feature guest speakers and may be advertised through posts

and hashtags on social media. Speakers at such an event could come in person or via FaceTime or Skype technology. Another group project could involve students collaborating to create digital "poems" addressing a particular topic, similar to Claudia Rankine's video "situations" (see below). An artistic project like this could be performed live or presented online (or both, if the initial performance is captured on video), and could provide opportunities for audience members to sign up for email lists or other means of notification. Through this process, a group could use technology first to inspire activism, and then to set up a network of individuals to connect around a specific issue. Offering suggestions such as these should inspire students to think beyond the static action of creating a website, and consider instead how they might initiate ongoing action in their communities.

Project-Based Learning: Process

Once student groups have been created, the project-based learning component of the unit can begin. A student-directed major project can be a daunting task for a teacher, so structure during this portion of the unit is key. Johnny Devine, a high school teacher in Tacoma, Washington, recommends holding daily meetings for student groups, over which the teacher monitors progress.[5] In these meetings, each group member shares their personal accomplishments toward the end goal, their short-term goals for the day's work session, and their current concerns for the project. This approach helps facilitate equal involvement from and cooperation between group members, and it promotes goal-oriented progress on a daily basis. To set a clear method for doing this, a first priority of each group should be to complete a task analysis of their planned final product. This should allow students within each group to determine a timeline, according to which work can be completed in an organized fashion. Each member of the group should have designated tasks that coincide with this plan, for which a contract may be useful to bind students to their duties.

During these workshop sessions, the teacher should check in frequently to monitor each group's progress and provide support for any issues that may arise. These issues may require additional skill development and explicit instruction. For example, if a student group addresses the aforementioned issue of homelessness and wishes to conduct interviews, the teacher will need to go over interviewing procedures with those students, as well as all necessary consent material. These sessions should also include a daily objective for student groups to evaluate (and rethink, if necessary) the role that technology is playing in their project. If they encounter obstacles or require guidance, teacher support will be helpful to formulate solutions.

As students continue to make progress in this portion of the unit, the teacher may supplement independent work sessions and inspire student creativity by bringing in additional resources that combine technology and social outreach. Claudia Rankine's *Citizen* contains many short works combining poetry with narrative essays, several of which are accompanied by video "situations."[6] Viewing and responding to these provocative texts could provide students with inspiration during the creative production phase of the unit. Rankine's writing allows many opportunities to be paired with current events articles at the teacher's discretion. A class discussion could arise from studying how Rankine, along with her husband, filmmaker John Lucas, use creative text and images to address issues of racial profiling, police brutality, and racially-based microaggressions, to name a few. Pairing Rankine's work with older writing, such as Audre Lorde's "Power," can also highlight the ongoing need for activism, because the issues discussed in the text continue to be relevant.

Because student group projects can take any number of different forms, it is necessary for the teacher to check in regularly with groups and monitor progress to ensure that students are adhering to their timelines and contracts. As the final deadline for all groups approaches, the teacher and students should be aware of pacing and any necessary revisions that may need to be considered.

When the final deadline arrives, students will likely be inspired to share what they have created with other groups, and possibly with the rest of the school. If the teacher has access to the necessary resources, classes may organize a "film festival," during which groups may present their work to an audience, providing an explanation of their inspiration and process, as well as conducting a question and answer session with audience members.

Final Project Reflection Paper

As a component of their final project submission, each student should also complete and submit an individual response reflecting on their experiences creating their project. In this reflection, each student should discuss his or her own specific role within the group, contributions to the final product, and thoughts on the strengths and limitations of the technology implemented to bring the project to fruition.

In short, this unit seeks to transform students from passive participants in digital worlds into active ones, to understand the process of engaging in social issues, and to take responsibility for promoting a community of empathy and outreach.

Classroom Activities

Lesson One: Interactive Environments: "The Veldt" vs. The VOID (Phase One)

Do Now: Novum

Students will write down the definition of *novum* in their notebooks (a fictional piece of technology that is scientifically plausible). Provide example (a flying car) and counterexample (a cloak of invisibility). Students will create and share their own examples and counterexamples, explaining why each is or is not a novum.

Activity 1: "The Veldt"

Students will read the short story by Ray Bradbury (with audio support if desired). As they read, they will underline or highlight examples of novum they find in the text.

Activity 2: Response to "The Veldt"

Students will choose one of the examples of novum mentioned in the story. On a graphic organizer, they will identify possible benefits and drawbacks of the technology described, and explain their reasoning: why might these benefits and drawbacks arise as a result of the novum?

Activity 3: Extrapolation / The VOID

Students will watch the short promotional video for The VOID, a virtual reality entertainment center. The teacher should point out that "The Veldt" was published in 1950, and the technology it predicted is close to reality now. Students will then write to extrapolate and imagine how video games or virtual reality might look 50 years from now.

Lesson Two: "Simulacrum" (Phase One)

Do Now: Free Write

In their journals, students will respond to the prompt: how many pictures of you exist in other people's photo libraries? Should you be able to choose whether (and how long) someone else can keep a picture of you? Why or why not?

Activity 1: "Simulacrum"

Students will read Ken Liu's short story (with optional audio support). As they read, students will complete a dialectical journal organizer to interact with the text.

Activity 2: Response to "Simulacrum"

Students will respond to the prompt: was Paul Larimore wrong to keep the simulacrum of his daughter? Why or why not? How would you feel if someone kept an AI hologram of you? Students will then return to their free write from the beginning of class and reassess their perspective. Do you still agree with what you wrote? Why or why not?

Activity 3: Novum Product Review

Students will choose a novum that we have encountered in one of the texts we have read so far and begin assessing its possible advantages and disadvantages. How would a manufacturer advertise this product? Today's brainstorming will form the basis of the culminating activity for the first phase of the unit.

Lesson Three: Justice and Sacrifice (Phase Two)

Do Now: The Trolley Dilemma

Students will respond to the prompt: is it right to sacrifice one person to save the lives of others? Why or why not? Student responses here can initiate conversation to examine the fairness and possible usefulness of sacrifice, which will provide a basis for today's readings.

Activity 1: Forced Debate

Students must pick a side of the room that corresponds to their answer to the Do Now question. When sides have been established, each student will summarize his or her reasoning on a Post-It note. Groups will compile and organize their Post-It responses and use these to identify coherent points for a debate. After a few minutes of preparation time, each side will present its argument and reasoning, electing a representative to write bullet points on the board. After both sides have presented their initial arguments, groups will have a few minutes to construct rebuttals to their opponents.

Activity 2: "The Ones Who Walk Away from Omelas"

Students will read Ursula K. Le Guin's short story (with optional audio support). As they read, they will interact with the text using dialectical journal organizers.

Activity 3: Response to "The Ones Who Walk Away from Omelas"

In their journals, students will respond to the story. What point does the story make about justice? How would the people of Omelas define this word (those who stay and those who leave)? Do you agree with one side or the other? Do you still agree with your statements from today's debate? Why or why not? When students have finished their response, they should begin reading N.K. Jemisin's "The Ones Who Stay and Fight."

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Short story in which advanced medical technology increases the IQ of a man with an intellectual disability.

Le Guin, Ursula K. "The Ones Who Walk Away from Omelas." Accessed July 1
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Student Reading List

Ray Bradbury, "Kaleidoscope"

Ray Bradbury, "The Veldt"

Kimberly Bryant, "Technology's Promise of Social Justice Remains Unfulfilled"

Maddie Crum, "We Need More Sci-Fi Movies that Celebrate Otherness"

Caitlin Dewey, "The Only Guide to Gamergate You Will Ever Need"

Lauren DiMaria, "Cyberbullying and Depression in Children"

Dave Eggers, *The Circle*

Sarah Gailey, "STET"

N.K. Jemisin, "The Ones Who Stay and Fight"

Daniel Keyes, "Flowers for Algernon"

Ursula K. Le Guin, "The Ones Who Walk Away from Omelas"

Ken Liu, "Simulacrum"

Audre Lorde, "Power"

Lisa Nakamura, "Gender and Race Online"

Nnedi Okorafor, *Binti*

Claudia Rankine, *Citizen*

Caroline Simon, "How Social Media Has Shaped Black Lives Matter, Five Years Later"

Kurt Vonnegut, "Harrison Bergeron"

Materials for Classroom Use

- Computers
- Student Journals
- Graphic Organizers: Benefits and Drawbacks of Novum
- Dialectical Journal Organizer
- Audio file: Leonard Nimoy reads "The Veldt"
- Audio file: "Simulacrum"

- Audio file: "The Ones Who Walk Away from Omelas"

Appendix on Implementing District Standards

CCSS.ELA-LITERACY.RL.9-10.2 Determine a theme or central idea of a text and analyze in detail its development over the course of the text, including how it emerges and is shaped and refined by specific details; provide an objective summary of the text. Students will analyze how perspectives on technology are developed in a variety of texts throughout the unit.

CCSS.ELA-LITERACY.RL.9-10.10 By the end of grade 9, read and comprehend literature, including stories, dramas, and poems, in the grades 9-10 text complexity band proficiently, with scaffolding as needed at the high end of the range. Students will read and respond to a variety of complex and challenging texts.

CCSS.ELA-LITERACY.W.9-10 Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence. Students will participate in class debates and create written arguments.

CCSS.ELA-LITERACY.W.9-10.2 Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content. Students will write responses to texts explaining how benefits and drawbacks of technology are suggested by events in the text.

CCSS.ELA-LITERACY.SL.9-10.1 Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 9-10 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively. Students will work collaboratively on various classroom activities, including a final project-based learning activity.

CCSS.ELA-LITERACY.SL.9-10.5 Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.

Students will use digital technology to create their final project for this unit.

Endnotes

1. The VOID, accessed May 31 2019, https://www.thevoid.com.
2. Wael Ghonim, "Let's Design Social Media that Drives Real Change," filmed December 2015 at TEDGlobal>Geneva, Geneva, video, 13:26, https://www.ted.com/talks/wael_ghonim_let_s_design_social_media_that_drives_real_change.
3. Kimberly Bryant, "Technology's Promise of Social Justice Remains Unfulfilled," *The New York Times*, July 22 2015, https://www.nytimes.com/roomfordebate/2015/07/22/is-silicon-valley-saving-the-world-or-just-making-m

oney/technologys-promise-of-social-justice-remains-unfulfilled.

4. Clay Shirky, *Cognitive Surplus* (New York: Penguin Press, 2010), 173.

5. Rebecca Sullivan, "Using Scrum for Project-Based Learning," *New Learning Times*, accessed June 28 2019, https://newlearningtimes.com/cms/article/5937/using-scrum-for-project-based-learning.

6. Claudia Rankine, accessed June 28 2019, claudiarankine.com.