Technology on the Edge of Formal Education

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Digital media technologies are an integral part of daily life at Freeway. Simply walk through the halls during passing period and you cannot help but notice the presence of media and mobile devices. However, connect to the school’s Wi-Fi or one of the many wired computers and attempt to access your Facebook, YouTube, or Twitter account and you will immediately discover the limitations imposed on students’ digital media engagement. Like many high schools, Freeway is a highly regimented space that attempts to strictly regulate students’ use of technology, especially social media and personal mobile devices. The official school policy states that personal electronic devices “cannot be seen nor heard” during school hours. Additionally, Freeway blocks students’ access to material deemed inappropriate or uneducational and blocks access to social media and videos. Students are often denied access to what they consider the most desirable and even educational spaces (e.g., games, social networking, and videos). And owing to financial limitations within many families at Freeway, they experience the “edges” of the Internet both at home and at school.

At Freeway, students’ and teachers’ use of media and technology is shaped by daily tensions and struggles over who can use what devices, for what purposes, when, where, and how. On the one hand, Freeway embraces the potential of digital media by offering courses that afford students opportunities to develop skills and digital literacies. For students facing precarious social and economic situations, digital media can provide alternative opportunities and experiences not typically afforded them in traditional educational institutions. On the other hand, the school attempts to restrict and heavily regulate students’ digital media practices. These contrasting and seemingly contradictory perspectives highlight a unique historical moment of tension in which
schools (and society) are struggling to incorporate digital media into traditionally formal and controlled spaces, such as the classroom.

The question at Freeway is not should technology and digital media be a part of formal education, but rather how should digital media be incorporated into formal learning environments? While such questions are certainly not unique to low-performing schools like Freeway, they take on a distinct resonance due to the high stakes and limited opportunities that such schools and their students face. To highlight the challenges Freeway faces in regard to incorporating digital media into the formal learning environment, this chapter considers tensions between institutional perspectives and students’ perspectives within the localized social and economic context of Freeway. We illuminate some of the contradictory ways in which discourses about the future of twenty-first-century learning—such as critical thinking, problem solving, and collaboration—influence the educational practices and opportunities at Freeway. The key aim is to elaborate on the contradictions, tensions, and opportunities associated with the integration of technology into the social and educational life of Freeway.

Valuing Technology in Formal Education

Part of the dialectical struggle over how technology is shaped within schools harkens back to questions regarding how technology itself is constructed. Are smartphones considered tools for learning or are they a means of distraction? Are chat rooms considered harmful spaces lurking with creepy predators or do they connect students to diverse perspectives and ideas? Are social network sites breeding grounds for bullying and drama or do they provide spaces for students to share ideas and receive valuable feedback? The ways in which technology and digital media are discursively constructed impact how they are regulated, incorporated, and adopted by schools. Federal, district, and local school polices overtly attempt to regulate technology at Freeway. Although students and teachers struggle with and at times outright resist rules, it is important to understand how the district policy perspective values technology use. Despite continuous research demonstrating the positive, constructive, and educational uses of digital media in the classroom,
many protectionist federal and state policies reflect misinformed conceptions of risk, and thus detrimentally impede schools’ use of digital media.¹

We do not deny schools have a responsibility to protect young people from risks and harms that they may encounter online. Nor do we want to overlook the fact that digital media present challenges to classroom control, student attention, and optimal learning environments. Technologies challenge the traditional order of classrooms. However, risks are often overstated and deemed unacceptable, which leads to overly restrictive policies that exacerbate problems rather than resolve them.² Van’t Hooft points out that policies regulating students’ and teachers’ use of technologies often blame technologies for much bigger societal problems and distract us from solving other issues.³ As a result, many policies intended to protect students are actually misguided and are problematically techno-phobic and/or moralistic.

Rules and Policies

Federal policies in the United States have mobilized fears and anxieties around young people’s use of the Internet. There have been many policy attempts to restrict young people’s access and engagement online, such as the 1996 Communications Decency Act, the 1998 Children’s Online Protection Act, the 2000 Children’s Internet Protection Act, the 2006 Deleting Online Predators Act, and the 2007 Protecting Children in the 21st Century Act. While a full history of all these acts is unnecessary here, it is important to note that risks associated with young people and the Internet get mobilized through restrictive policies.⁴ Undeniably the Internet presents potential harms, but media panics tend to construct all youth activity as risky and ignore the benefits of teens’ online practices.⁵

Because Freeway is a low-income school, it is financially dependent on federal E-rate discounts for telecommunication services; therefore it must also comply with the Child Internet Protection Act. The act stipulates that any school receiving federal funding must use filters to prohibit students from accessing information deemed inappropriate, such as nudity or pornography. In practice, the filter also blocks educational materials such as sexual health information, art, and news sites depicting
violence. At the time of our study there was not a system in place for students to challenge the administration if a website they tried to access was blocked. For example, teachers were not equipped with codes that could override the filters. Teachers could, however, put in a request to the Informational Technology (IT) department to have the site unblocked, a process that ranged from a few days to several weeks.

Additionally, the Austin MASD, of which Freeway is a part and by whom Freeway is governed, chose to block students’ and teachers’ access to all social network sites (Facebook, Tumblr, Instagram, etc.). Furthermore, the school district blocked students’ access to all video sites, including YouTube, Vimeo, and even embedded videos on news sites such as CNN.com. For a while, teachers were also denied access to videos. However, the policy was later revised so that teachers were allowed to access YouTube from one computer at a time (verified by teachers’ account log-in information), yet they were still completely banned from social network sites.

It is problematic that students receive mixed messages about the value of technology: on the one hand, courses such as the Tech App class teach students that mastering technology and online tools could provide a valuable pathway to future success; on the other hand, they are told that technologies pose threats that they are not responsible enough to handle or learn to negotiate.

Undoubtedly technologies present both risks and opportunities, yet the school largely focuses on restricting use and minimizing risky encounters rather than enabling students to responsibly identify and navigate risks. As the video game production teacher Mr. Warren noted, “We are the classrooms that help define the twenty-first-century classroom and it’s unfortunate that we’re sending out a mixed message; and the people that really are frustrated are the students.” The ambiguity reveals the tensions and challenges schools face as they attempt to integrate technology into the classroom that supports student academic achievement and future opportunities.

Students’ Perspectives of Technology and Rules

It is no surprise that students resisted, and at times even resented, school policies that limited their online engagement. In part, this was because
there were ambiguities and disconnects between official rules and on-the-ground enforcement in classrooms and hallways. Students constantly and persistently bent or outright ignored the rules, and teachers did not consistently enforce the rules. On a deeper level the ambiguity reflected a more general uncertainty about the school's overall value of incorporating technology into the school's values.

For example, Sergio noted that the school “is really anti-technology, but then it supports the technology program that it has, so it's just anti-technology toward the students using it in the hallways and in class, unless the classroom involves that.” His statement acknowledges the abstruseness of Freeway’s relationship with technology and the growing disconnect between how students prefer to learn and how schools perceive learning. Sergio went on to say, “I would change the electronic rule at school because it just limits the students to be free.” By and large, all participants stated that they were frustrated by the restrictive rules and generally felt the school should allow students more freedom with technology because it would help maintain their interest and aid in schoolwork. These attitudes also reflect research demonstrating the ways mobile media, for example, can enhance learning. Anna, a senior, told us the rules were there to

keep people on task. Try and keep them working on schoolwork so everyone can pass, the district looks good, they get paychecks, everyone gets paid. Because if you're sitting there on YouTube all day you might not be learning anything at all. . . . Then at the same time it sounds like they're going too far with it in general. I don't know. It's one of those situations where you're not really sure why the rule's there, but at the same time if it wasn't there it might be worse. At least it stops some people who don't know what the proxy is or something from getting on [to blocked sites]. Then again, who's to stop them from just sitting there not doing anything in general?

Anna's statement echoes other participants who also expressed ambivalence toward the technology rules. With the exception of explicit technology-focused classes, participants largely felt teachers did not encourage them to use personal devices to seek out information or enhance their learning opportunities. For example, in several interviews
Jasmine complained about the school's technology policies regarding personal devices. She thought students should be allowed to use their iPad or iPod in the classroom: “I have books on my mobile, and I want to read those, but [teachers] were like, ‘Just go get a different book.’ But I don’t want that book because I’m already on a different book. I left the physical book at home, but I have the other book on my mobile. I should be able to use that.”

Jasmine’s experience is an example of the ways in which blocking personal technology limited opportunities for academic engagement. Rather than allowing Jasmine to finish a book on her mobile, her teachers would rather she begin another book that is physically available in the classroom or library. It is not hard to imagine a not-so-distant future where all reading in all classrooms will be performed on personal mobile devices, yet as Watkins discusses in chapter two many Freeway teachers did not embrace these opportunities.

We repeatedly observed that students at Freeway developed ways to covertly use mobile and social media during school to exert agency over their learning environment. For example, they would text under their desks, hide earbuds under their hoodies, bypass technical filters via proxies, and negotiate leniency with particular teachers. Taylor describes these acts as “locally assembled resistance against an established set of social structures or ‘rules.’” It is within this vein that we consider the resistive (as well as the compliant) tactics participants exercised to cope with constraints.

Drawing from de Certeau’s concept of resistive tactics, Morgan O’Brien argues that disciplined subjects subvert power with whatever possibilities at hand, but is careful to point out that tactics only allow subjects to “escape without leaving the dominant order.” In other words, students work within institutional discipline without completely overruling it. Participants’ resistant maneuvers are agenteve tactics to cope with the everyday institutional restrictions and power to which teens are subjected. Teens’ resistant tactics may seem inconsequential, but O’Brien writes these practices “are a part of the way through which everyday life is rendered livable for young people.”

Some of the participants’ tactics were intended to deliberately subvert or disrupt institutional power and discipline; other practices demonstrated how some teens did not summon the energy, will, or desire to
challenge restrictions. The back and forth between the school rules and student practices reflected the ongoing tensions shaping whose values were privileged at school.

Working around School Blocks

Several participants were experts at finding proxy servers that allowed them to bypass the school's Internet filter and access restricted sites. Others who did not know how to find a proxy relied on friends to show them how to bypass filters. For example, students such as Antonio and Sergio were adept at finding proxies and discussed their success with an air of pride; they knew they were skirting the system and enjoyed being able to deliberately bypass filters. They used proxies to gain access to online tutorials, videos, and other content that was blocked. Their practices actually reinforced and reflected educational goals, but were not officially sanctioned at school. Some students even belonged to a Google Group called Free Proxy a Day as a way to stay one step ahead of the institutional restrictions blocking access to websites. Despite their best efforts, though, students also expressed frustrations because the school typically discovered proxies and blocked them; thus they were pushed to find a new one to use until it too was eventually discovered.

However, other students such as Javier found proxies more trouble than he thought they were worth. When asked if he used them, he responded, “No, it’s too much work. You go to one and then the next week it’s blocked so you try another, and then you ask someone, and that one is blocked too. It’s too much, I just quit trying.” Interestingly, like Antonio, Javier mentioned the sites he was trying to access were usually tutorials or images and music for his films—sites that enhanced rather than detracted from educational goals. Many students actively chose to bypass filters and regulations, but we must be careful not to assume all students necessarily want to bypass constraints. Some students reluctantly complied with school rules, even if they did not agree with the values behind them.

Another tactic participants used to resist institutional restrictions was to download a different browser onto mobile devices, which enabled them to bypass the school’s technical filters. The majority of participants demonstrated they could access Facebook and YouTube from school.
using Opera and other browsers on their mobile devices (the school’s Wi-Fi filters were set to block sites in only certain browsers). Students also used alternative apps to access videos and social networking sites. Jasmine showed us an app on her mobile that looked like Facebook but it was not blocked at school. Interestingly, she was not the one who installed the alternative app on her mobile; it was one of her friends.

Jasmine did not check Facebook on a regular basis throughout the day, so it did not bother her that she could not access it from school. However, her friend Bianca, who had a limited text message plan, borrowed her iPod Touch all the time. Bianca was the one who downloaded the app as a way to access Facebook at school. Peers often relied on each other to learn how to bypass filters using browsers, proxies, or apps. Peers developed networked economies of sharing as a way to resist institutional limitations and enhance their educational or social lives. Students did not necessarily have to possess the technical prowess to bypass restrictions; instead, they drew from resources available within their respective peer networks. These examples demonstrate the ways social and peer norms actively competed with institutional regulations shaping the value of digital practices.

Finding Balance between Risk and Benefits

Freeway was understandably concerned about the risk of distractibility that arises with the incorporation of social and mobile media in the classroom. Undoubtedly we witnessed plenty of moments in which students were distracted by their mobile devices during class. However, to justify completely banning mobile devices on the premise that it reduces distractions is problematic on at least three accounts.

First, arguing that technologies ought to be banned because they present a distraction in the classroom presumes there was ever a time that students were not distracted. Mobile devices can be disruptive; however, students have always been (and likely will always be) distracted. Prior to mobile devices, students would doodle, pass notes, sneak a magazine into their book, daydream, make to-do lists, and so forth. Technology possibly exacerbates the potential to be distracted, but mobile devices certainly did not create the problem. As we reported in chapter two, several students told us they preferred to use their phones when they were
bored in class. But as noted earlier in this book, we contend that the biggest distraction in the classroom is not media, but rather a dumbed-down curriculum that generates consistently low expectations and rote tasks for many Freeway students.

Second, the always-on presence of technology and the potential for distraction is a real-world adult experience that students will have to learn to manage at some point. Banning mobile devices to create “distraction-free” learning at school constructs a superficial environment that ignores the reality that young people, just like adults, must learn to negotiate the distractions posed by mobile media. Sheltering students from these distractions does nothing to prepare them to manage these situations when they are no longer “protected” in the contrived environment of the classroom. Arguably, the consequences of distractions in the classroom differ from distractions in the workplace, namely, that it is (at least in part) the school’s responsibility to enhance learning environments in which students can focus. This differs from the adult workplace, wherein employees are held responsible for their decisions and practices (and thus also held responsible for the consequences of distractions).

Rather than attempting to outright ban mobile media distractions, schools could institute a scaffolding approach that would allow students to earn the privilege and responsibility of incorporating mobile media in the classroom. Such an approach would integrate students’ preferred modes of learning and help them learn how to manage distractibility in school and beyond. There needs to be a balance between completely restricting mobile media and forgoing any level of control.

Third, students miss out on the benefits of mobile learning in the restricted environment like the one Freeway created. Students understand, to a certain extent, that the rules are designed to keep them “on task”; however, virtually all participants felt the rules went too far. Some students believed the rules limited creativity. Some students believed that they were more productive when they could listen to music, look up online tutorials, search for information online, or take notes on their mobile devices. For example, Cassandra got frustrated when teachers did not allow her to use her phone for class. “I like using the notepad on my phone [to take notes], but I can’t because of my teachers. And sometimes we have to turn in our notes or [we’re allowed to] use our notes on
tests but I can’t have my phone out during a test looking at my notes.” Other participants also commented that they preferred to take notes on their mobile devices because it was faster and more convenient, and they always had their device with them.

Rather than harnessing the educational potential of mobile media and validating the diverse ways teens are already using mobile media, banning it sends the message that mobile media are not valuable in the formal learning environment. But in fact, research has demonstrated the ways mobile media can enhance learning, particularly for disengaged teens. By incorporating media into the classroom, teachers could capitalize on the educational ways teens are already integrating mobile media into their learning ecologies outside of school. Instead, banning media altogether invalidates teens’ practices and preferences.

Not all teachers tried to control technology and mobile media. Mr. Lopez believed the educational values of digital media outweighed the risks, including the risk of distractibility. While he incorporated some personal devices into the classroom, he thought schools should be doing more. He argues that schools should take advantage of the fact that most students own a mobile device. He told us: “Students should be able to bring whatever devices they have. You should have activities in class where you’re like, ‘Okay, go ahead and take out your cell phones or your mp3 players or whatever. You’re going to sit down in a group. Go ahead and record what you discuss and we’re going to upload that recording and we’re going to do this with it’; things like that. Teach them how to use it.” Just as adults must manage distractions presented by technology, so must students. Outside of school, students’ use of technology is not strictly managed; they must learn to use it responsibly, and that includes resisting temptations of distractibility.

The Role of Social Norms in Shaping Practices

Current policy regulations have neglected to account for the role of social norms in regulating teens’ media use. Prior to mobile phones, earlier technology studies have shown that users develop norms for how, when, and what purposes to use new information and communication technology. Feldman describes norms as “the informal rules that groups adopt to regulate and regularize group members’ behavior.”
Norms develop differently among different groups and within different contexts. Beyond an educational context, participants discussed how social norms regulated mobile media use within peer networks. For example, in several interviews students mentioned the social acceptability of checking one’s phone while hanging out, but also noted that at times it was considered rude. Jada said friends usually teased each other in a playful manner when someone was being rude by checking his or her phone too much. She said it was not a big deal, but it usually got the point across. In other words, in social situations outside the classroom, peers regulated when and how often they were distracted by mobile devices, along with the circumstances dictating the appropriateness of such distractions.

It is not hard to imagine how social norms within the classroom, alongside acceptable-use policies, could also serve as a mode of regulation that would be less restrictive than outright prohibition of mobile devices. When discussing the school’s no-technology policy, Anna commented, “When a teacher’s lecturing, that’s incredibly rude, you can’t have your headphones in. You can’t be texting your friends when someone is up there trying to get your attention and teach you something. But in your free time [in the classroom] it really shouldn’t be a big deal as long as you’re doing whatever you’re supposed to be doing.”

As another example, Amina, a confident and high-spirited east African senior, talked about listening to music in class: “I’ll listen to music if we’re not doing anything, we’re just silently doing our homework [in class]... If you do it while [teachers] are talking it’s just rude, you can’t do that. I think we’ve grown up to be like, we know what’s rude and we won’t do it, and it’s not even just not to be rude, it’s cause we want to get our education and we’re not freshmen anymore, we’re not acting like kids.”

Amina’s comments demonstrate how social norms can serve as a mode of regulation that distinguishes between inappropriate and appropriate uses of personal technology in the classroom. We believe that schools would benefit from incorporating mobile media into educational settings, recognizing the central role mobile plays in the way teens communicate and navigate the world around them, and playing an active role in teaching students how to manage distractions and risks. Valuing media in the classroom validates students’ perspectives
and practices, and acceptable-use policies move beyond merely banning technology but recognize teens’ agency to use media in responsible ways.

Critical Digital Literacy in the Age of “Look It Up” Culture

The Internet provides young people (and adults) access to an unprecedented amount of information and resources. We live in a culture that allows us to easily look up the answers to all sorts of queries from the educational to the hyperpersonal. Greater access to information certainly benefits educational opportunities and encourages autonomous learning. Yet, as the recent “fake news” crisis demonstrates, discerning the accuracy, motivation, and context of the information we encounter online requires fine-tuned critical and digital literacy. Fabos connects critical media literacy with digital literacy when she writes that students need to understand “how political, economic, and social context shapes all texts, how all texts can be adapted for different social purposes, and how no text is neutral or necessarily of ‘higher quality’ than another.”

Although not entirely unprecedented—amateur and citizen media, of course, predate the Internet—the Internet nonetheless provides students greater access to amateur voices, including their peers, which provide complex literacy challenges.

Digital media texts require a more nuanced approach to determining the value of information that moves beyond an understanding of reliable or unreliable, but require us to understand the value of different voices, texts, contexts, and platforms. Students could proficiently look up information, but they needed to develop the critical skills necessary to become digitally literate. This section addresses the ways restrictive federal policies and Freeway rules inhibited students’ ability to more fully develop critical digital literacies within their formal learning environments.

Search Engines

Participants said teachers encouraged them to use the library databases to look up information rather than use online resources. In and of itself this is not problematic—the more resources to which students have
access, the better. However, from talking to students it seemed many teachers encouraged library resources in lieu of online resources such as Google, Wikipedia, or YouTube, sites students consistently told us they preferred to “look up information online on their own.” This highlights tensions between the school’s intended incorporation of technology and students’ own practices and values. Schofield and Davidson suggest that student learning is enhanced when students are allowed to experiment with their own procedures for solving problems of seeking out information and to pursue their personal interests.17

Teachers’ policies and practices, which aim to control students’ use of search engines, are antithetical to the ways research tells us students prefer to learn. Students noted that teachers do not necessarily discourage the use of Google, but few recall teachers actively encouraging Google searches. The exception to this was Mr. Lopez, whose students noted he often encouraged them to look up information online using resources such as Google.

School databases are certainly valuable resources; however, as quickly as information changes and evolves, it is a disservice not to encourage and teach students to use other online resources. Unlike static resources, such as books and databases, the Internet can stimulate learners to find the most up-to-date information in a short amount of time. While search engines have become increasingly easy to use, search results require nuance and critical engagement. Discerning reliable information is not an innate skill; it must be honed through experience and teaching. “Fake news”—an umbrella term used to describe disinformation, propaganda, satire/parody, journalistic inaccuracies, partisanship, and hoaxes—is often intentionally disguised to appear as credible and factual news that both students and adults may not be able to easily decipher.18 It is vital that formal education help students fine-tune what Rheingold refers to as their “crap detector”—that is, the ability to critically assess the validity, accuracy, and motivation of information they encounter online.19 The need to help students develop the competence to discern “fake news,” real-time information, and a data-driven world is especially urgent in the aftermath of the 2016 U.S. presidential election and rising concerns about data privacy and data literacy related to big tech companies like Facebook, Google, and Twitter.
When asked how they determined whether a search answer was accurate, some students said they compared answers between sites. In other words, if the same answer appeared elsewhere they assumed it was accurate and reliable. This was not necessarily a bad strategy; however, few participants said they paid much or any attention to the source, URL, author, date, or publication type (e.g., they did not distinguish between user forums and actual published articles), nor did they utilize advanced search features such as placing phrases in quotation marks or using a dash to filter out results they did not want.

Jasmine, a junior very involved with the CAP, said, “You can just tell if a site looks right or not.” Javier agreed, “You have to use common sense [when determining whether a source is accurate].” Although these were not misinformed strategies, clearly there were missed opportunities for critical digital media literacy. Such skills should not be taught in artificial simulations, but rather could be incorporated into real-time classroom situations, which arise as students seek out information in classroom learning environments. This reflects how digital media is compartmentalized into special courses, when in fact it should be more seamlessly and fully integrated into all aspects of students’ learning environments.

By not encouraging students to use everyday search engines in class, teachers missed opportunities to fully engage students with critical digital literacies, which would take into consideration the media content, media grammar, and medium literacy of information. In virtually any class, teachers could incorporate aspects of critical digital literacy by having students look up information and then discuss not only the reliability of the information but also elements of design, ownership, and the values or connotations therein. For example, if a student finds an article that appears credible but is determined to be politically biased misinformation, teachers could help students think about why the article was written, who benefits from its circulation, how algorithms shape the popularity of search results, and how to find and verify information that is accurate. If there was ever a time to teach young people about the implications of algorithmic literacy, it is now.

Although Freeway’s filters purported to block objectionable and harmful material, they did not block advertisements, which aim to capitalize on teens’ insecurities (ads for beauty products, diet pills, etc.).
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Frechette poignantly argues that “educators, librarians, and parents need to ensure that [filters] serve the public interests, rather than private commercial interest.” Schools have a responsibility and opportunity to help students think critically about information and challenge a consumer culture that profits from their online practices.

Wikipedia

Wikipedia provides not only an opportunity for information literacy to move beyond mere critical consumption, but also collaborative participation. As in many schools, students at Freeway were not explicitly encouraged to use Wikipedia, because it is often considered an unreliable source. However, information literacy scholars note that the site has a lot of value in the classroom. For example, Sormunen, Lehtio, and Heinstrom write:

> Wikipedia has explicit guidelines of the accepted practice in writing, using sources and citing them. In school assignments, these guidelines form the framework which students have to consider and reflect on. Open publication of articles furthermore makes the requirements authentic (real world vs. school based norms) which may be an important motivational factor in the learning process (Every, Garcia & Young, 2010, Forte & Bruckman, 2010). Writing for Wikipedia also has potential in helping students to understand Wikipedia as an information source, how its contents are created and how to critically evaluate the information it offers.

Unlike more static online resources, Wikipedia provides the opportunity for students to simultaneously learn to critically evaluate information while also contributing their own knowledge. However, students were unlikely to actually contribute to Wikipedia; they knew “anyone” could contribute, but they had never considered contributing. Concerns have been expressed that the community of contributors often devalues the contributions of others, especially women and people of color, creating a relatively unfriendly environment for participation. This may be one explanation as to why students at Freeway are unlikely to contribute to Wikipedia.
In addition to lack of institutional support from the school, this references how social capital (e.g., connections to individuals who are likely to be makers and not merely consumers of web-based content) and cultural capital (e.g., knowledge and understanding of the subtleties associated with participation in online communities) shape degrees of engagement in online participatory cultures. Schools could help students view themselves as knowledge contributors and facilitate the acquisition of information literacy through the evaluation of Wikipedia. New technologies create learning opportunities that challenge traditional learning models and allow students to play a more agentive role in constructing personal learning ecologies and networks.

Activist projects such as “feminist edit-a-thons” have emerged as a powerful way to mobilize marginalized communities to contribute to databases of knowledge such as Wikipedia. The events bring underrepresented communities together with the goal of intentionally editing Wikipedia entries (or creating new ones) to include more information about women and issues of interest to women that are overlooked or missing from the site. Likewise, teachers could encourage students to identify interests or perspectives that are not represented on Wikipedia, and as a class they could contribute to the growing body of knowledge about that topic. As a lesson in critical digital literacy, this requires students to think critically about the consumption and production of information and to view themselves as active participants in their digital media ecologies.

Many participants noted that teachers outright discouraged the use of Wikipedia. While some students still used it, only a few participants engaged with Wikipedia in ways such as clicking on embedded links, checking cited sources, or viewing the editing history. Yet, there were some students, such as Sergio, who viewed Wikipedia as a resource rather than an authoritative text. He told us: “Sometimes people say don’t use Wikipedia because it’s not always accurate, but I’m not using it for accuracy. I’m using it more as a guide to compare one thing to another to see if they’re the same—similar—and that way I’ll understand. Wikipedia’s more like enlightenment, a little part of the subject, but then I’ll do more research.” Through his own practices, Sergio has constructed a learning ecology, which tapped into the benefits of Wikipedia and simultaneously acknowledged the limitations of it.
Still, other students avoided Wikipedia altogether (at least for traditional educational purposes) because they were concerned it might not be accurate information. Fabos draws attention to the ways digital media literacy often privileges “authoritative” and “accurate” information from professional sources and, thus, tends to marginalize amateur texts. She argues that rather than seeking an objective “truth,” all texts ought to be considered within different contexts and recognized as serving different purposes. Sergio’s use of Wikipedia as a starting point for further research demonstrated his ability to critically engage with Wikipedia in a productive way.

Rather than using Wikipedia as a site for critical digital media lessons, teachers seemed to write it off as a less than valuable resource and dismissed students’ values and cultures of learning. To an extent, students echoed these views as well. Schools are doing students a disservice when they fail to embrace easily accessible and free resources available to students. Although the Freeway policy stated teachers should be equipped with up-to-date technology and online skills, which they were expected to incorporate into student curriculum, in practice participants were largely navigating the Internet without much classroom guidance or teacher support. Policies missed opportunities to validate students’ learning practices and develop critical digital literacy. Wikipedia is an educational resource that can facilitate deeper understanding of power, representation, and the construction of knowledge.

YouTube

There is a sense of irony in the fact that students are learning how to write, produce, and edit their own videos in the classroom, yet they are denied access to videos at school. This explicitly reveals the tensions facing Freeway with regard to digital media. Students repeatedly and consistently reported using YouTube as a source for online tutorials and help. Videos have a long history of being used in the classroom to help visual learners understand difficult concepts. Jones and Cuthrell demonstrate how YouTube has been successfully incorporated into the class to aid in teaching virtually any subject, including math, literature, and social studies. Mohamed Ally writes, “Just-in-time learning encourages high level learning since learners access and apply the information
right away rather than learn the information and then apply the information at a later time.”

Blocked videos and online tutorials that would support just-in-time learning were a source of constant frustration for students. For example, active CAP participant Sergio complained that the school blocked so many useful sites including videos.

Sergio: That’s another thing I didn’t like about the [school’s] computers. Like, a lot of the tutorials seemed really cool when I got the visual [preview] of it, but when I tried to open it, it would be blocked, because apparently it had some unknown content that the school didn’t want. And sometimes I would try to download images from file-sharing sites, and they wouldn’t let me, and I really needed those images to compose an art piece.

Interviewer: Yeah, that’s kind of a bummer, right?

Sergio: Yeah. Like, YouTube is blocked, here, and at home, YouTube is one of my main sources for tutorials, because then I get a spoken kind of tutorial rather than just going back and reading it, . . . someone would just be speaking on what I need to do, and that way it would be more efficient.

Blocking social media in this way reflects one of the long-standing fears that the selective prohibition of resources will disproportionately impact low-income students. For students without broadband at home or Internet-enabled phones, the school should be a place that provides a more equitable learning experience for students and should embrace new tools for learning. The restrictive policies exacerbated digital inequalities when they limited students’ access to valuable online resources such as YouTube tutorials. Further, in chapter five we explore how blocking online videos seriously impacted both the quality and opportunity for students to learn in the school’s game design class.

Blocking YouTube also impeded an opportunity for students to learn to responsibly share their work in a networked public and connect with other amateur filmmakers. Henry Jenkins writes, “In a world in which knowledge production is collective and communication occurs across an array of different media, the capacity to network emerges as a core social skill and cultural competency.” Mr. Warren, the video game
production teacher, recognized the importance of networking and the fact that the game industry expects young people to be using social networking sites as tools for reputation management and self-promotion.

During an interview, Mr. Warren discussed how the current policy inhibited students’ opportunities to network and demonstrated how YouTube and social network sites could enhance his classroom. He was working on a classroom project between his Freeway students and students in Cambodia. As he explained it:

Right now I’m working with a number of students in Cambodia. These students are going to be uploading, downloading, and sharing stories, pictures of their families, their environments. Today we had some [Freeway] students bring some of their favorite foods from their cultures. And we’re going to share those pictures and those stories with the Cambodian students. These students are designing games that will be teaching about the history and art of Cambodia. . . . A group of my students wants to design a game that every time you win a game, rice is being sent to Cambodia. So now we’ve got games that can help a culture, help a community evolve, survive. That’s brilliant, and it’s not my idea. It’s theirs and when it’s their idea, they own it. And when you own it, they’re more passionate about it.

The project was severely limited because the videos the Cambodian students were sharing were available only on YouTube, which Freeway students did not have access to at school. Research demonstrates YouTube fosters communication, collaboration, interaction, and learning. In this instance, the decision to block YouTube not only restricted the scope and complexity of school-related work that Freeway students could produce; it also restricted their ability to connect with students, ideas, and projects in a global economy and reified their position in the digital edge. We noticed these kinds of challenges and contradictions throughout our fieldwork at Freeway. On the one hand, teachers like Mr. Warren and Mr. Lopez were open to new kinds of learning models and experiences. On the other hand, their efforts to pursue these pathways were often constrained by forces—including filters and the lack of professional development—that they simply could not control.
Access, Friendship, and Disengagement

In examining how Freeway's digital policy tends to constrain a number of opportunities for digital learning and development of critical literacies, we argue further that the costs of these limitations are particularly intensified for students in the digital edge. We agree that educational institutions such as Freeway have reasons to be concerned about the use and “abuse” of digital technology at school. Our interviews with students suggest that the boundaries around appropriate and inappropriate applications of digital technology within and outside school time are blurred based on differing levels of access to and practices of meaning-making around digital technology.

In considering how these ambiguous practices of digital media shape learning at Freeway, we argue that access to technology at home and in their broader social lives shapes how students are able to participate in digital technology as a learning medium. The restrictive structuring of student access to digital media at school and separation of certain types of usage as “educational” vs. “recreational,” therefore, is particularly problematic due to students in our sample often lacking access to technology at home. We explore this point specifically through the case of Amina and Cassandra’s sharing of personal digital technology.

Moreover, as we demonstrate with our discussion of Selena, such digital policy might have significant impacts on students who are both interested in digital media and creative practices more broadly and disengaged from traditional academic curricula. Ultimately, the realities of how socioeconomically marginalized students navigate digital use should be considered by schools as they develop digital use policies.

Case Study One: Amina and Cassandra

Amina and Cassandra referred to each other as best friends, and in our study often participated as a pair—in focus groups, interviews, and in-home visits. They were both graduating seniors at the time of our study. However, whereas Cassandra gushed enthusiastically on a range of topics from her cell phone to her love for alternative music, Amina was less
prone to such cheeriness, instead more likely to narrate her long nights working at her part-time job after school and to offer up sarcastic, if not at times cynical, observations about life inside and outside Freeway.

The two girls were, despite differences in their attitudes, uniquely bonded through their living circumstances. For several months of our study, Amina was living with Cassandra’s family, though she continued to return home to her mother’s apartment for visits. They rarely talked about the reasons behind their living arrangements, but their sharing of space clearly shaped many details of their daily lives, down to their iPod Touch. The device was actually Amina’s, but she regularly shared it with Cassandra while she was at work, allowing her friend access to music and to social media websites such as Instagram. In Amina’s narrative, through the development of their friendship the device had taken on a status as shared property. Amina explained how this practice of lending initially emerged from a fix to a temporary problem—that of Cassandra’s mother punishing her by taking away her phone—into a more enduring practice, and one with important social meanings:

So basically I was like, “Look, you can borrow my iTouch until you get your phone back.” And that’s just how comfortable it got with her. She was just like, “Oh, that’s really nice of you.” Yes, I let her do that. Now we live together, we basically share everything. Basically. Her phone is still her phone, my phone is still my phone, my iTouch is still my iTouch, but if she’ll be like, “Hey, you’re going to work. Do you mind if I borrow your iTouch?” I’m cool with that. I’m going to go to work, I’m not going to use it anyway. She won’t steal it I’m pretty sure. When I go home it will be there in my room charging. But yes, basically I’m comfortable sharing stuff with her.

Unlike some of the other students in the room that day in our study more broadly, neither Cassandra nor Amina was a member of Freeway’s digital media club. Instead, they tended to use digital technology strictly for personal and social reasons—to listen to music, to socialize on Facebook and Twitter, and to text with friends and parents. It was clear from their practice of sharing the iPod Touch that such technology played an important role in their social experiences.
Through their collective ownership, the two girls were able to mutually compensate for compromised access to digital technology. Beyond the scope of her cell phone punishment, Cassandra continued to borrow this device because it appeared more user-friendly and conducive to social media applications such as Facebook and Instagram than her own phone. Although they were able to house Amina, Cassandra’s family had its shares of financial concerns, which limited their ability to keep fully updated with technology. Cassandra alternated between referring to her parents as “unemployed” and “self-employed,” with her father and mother both depending on independent contracting work for their income.

Outside of school and Cassandra’s house, Amina reported limited access to the Wi-Fi necessary to use her iPod Touch. In fact, when we asked her more generally about her access to digital technology, Amina’s answer was often shifting and dependent on her living arrangements, a status that frequently changed. At her mother’s house, she had some access to a shared family laptop, but was less able to use some of her personal devices. Similar to the sharing practices that we observed among other students in the study (and discussed in greater detail in chapter two), Amina and Cassandra’s sharing of a mobile device illustrates the importance of social life in creating access to media and meaning-making with technology.

The way that the two friends engaged with digital media, furthermore, disrupts a strict binary of home versus school in the landscape of the digital edge. Here, we argue that the school’s policies are predicated on the assumption that students’ use of technologies might be better served within a home environment. However, in the context of digital edge communities, this idealized separation between recreational (and occasionally risky) and academic use is complicated by the fact that students do not always have quality access to technology in both home and school environments. Wi-Fi is one example of this, but as the case of Amina and Cassandra demonstrates, compromised access is also visible in terms of lack of access to hardware—old and shared computers, and malfunctioning phones. Considering the social meanings of access not only in relation to students but also in the context of their families is important considering how technology takes on important meanings in “hybrid” families as in the case of Cassandra and Amina.
Case Study Two: Selena

Selena was also a graduating senior at Freeway. Meeting for the first time in the school’s digital media lab along with other student participants in a focus group, we noticed her dark wardrobe and eyeliner and generally quiet demeanor. In one-on-one interviews, Selena was more forthcoming about her opinions, of which there were many. For instance, she commented that stores like Hot Top are inauthentic, not truly “gothic”—unlike the realness of her own personal goth style. Just as easily, she critiqued peers at her school for acting “hard” but believed her background growing up in a small town in west Texas had granted her a deeper knowledge of the meanings of this adjective.

Selena is an example of a student who is typically labeled “at risk” according to a number of variables; she had a high school record flagged with academic missteps. Selena spent a year at a nearby alternative high school program where she was sent after getting into multiple fights and failing the tenth grade. As a senior she was struggling with transferring her credits from that year and was making up schoolwork in hopes of graduating.

Selena was forthcoming with her frustrations and feelings of disengagement from the classes at Freeway. In fact, compounding academic troubles from her past, Selena occasionally raised concerns about her ability to graduate from high school, which was also complicated by the fact that no one in her family had a high school diploma. Alienation from her school environment contributed to these worries. When describing her feelings about school, she said: “It just gets on my nerves and I can't pay attention. So, lots of times I usually skip a few days.” Despite skipping class, she would come back to school to meet us for interviews or use the school’s computer labs.

When we asked about her group of primarily Latino friends, Selena was able to offer a litany of derogatory names: “potheads,” “skaters,” and “stoners.” These names were ones that Selena had heard others use in reference to her peers, but she admitted that these stereotypes were not without some truth. However, despite this image, she credited her friends as offering some support for her academic success, with several of her friends encouraging her to stay on the path to graduation. Of her group, she was one of the few to avoid both dropping out of high
school and using drugs “harder” than marijuana. When talking about her family life, Selena also describes a complex situation involving both emotional support and instability. During the course of our study her mother was unemployed and struggling to find work. Disruptions in Selena’s academic record were shaped by a history of moving back and forth between west and central Texas. Her relationship with her single mother was tenuous, but they respected each other. Her mother even maintained contact with a trusted teacher via text message, asking him to check up on Selena’s progress at school.

Despite appearing to be at the border of several risk factors, Selena was motivated by her passion in the creative arts, which encompassed a range of activities including writing, painting, and music. Moreover, she was interested in digital technology and cites her tech classes as some of her favored experiences at Freeway. She enjoyed her freedom in her art class, using software such as Photoshop for projects in her digital media class, and making music. As she puts it, “Yeah. I like making different stuff. I like making music in there sometimes.” Selena also acknowledged YouTube as an important source of inspiration and critiqued the school’s policy of restricting the website:

Selena: Mmhmm. YouTube they block, but what they don’t realize is

YouTube is very helpful.

Interviewer: How is it helpful? What do you use it for?

Selena: YouTube, God dang. I learned so much stuff from YouTube.

Interviewer: Like what? Can you think of examples?

Selena: I’ve learned how to make a tattoo gun out of YouTube. YouTube’s what taught me how to play the piano.31

Given these interests, Selena’s involvement in the after-school digital media club and film project was fitting. However, despite starting the school year as an active member, by the middle of the term Selena reported losing interest and rarely attended meetings. She struggled with finishing and submitting a script for the group’s international film project and felt the sting of rejection when her work was not accepted, in part contributing to her decision not to participate in the film project.

The contradictions present in Selena’s status as an at-risk student suggest that Freeway’s restrictive digital policies might unintentionally
exclude students at the margins or who are interested in forms of learning that have historically been devalued or overlooked within traditional curricula. Moreover, as with other students in our study, Selena’s abilities to access technology of a sufficient quality outside of school was compromised by financial limitations—she and her family shared a computer that was reportedly from 1997; they did not have cable or Internet access at home. As Alex Cho, Vivian Shaw, and S. Craig Watkins discuss in chapter seven, the sidelining of creative interests to extracurricular activities and alternative tracks can be particularly problematic for socioeconomically and racially marginalized students.

While such “alternative” approaches to education do not always explicitly address “at-risk” students, conceptualizations of risk are certainly embedded in both the school’s administrative policies around technology and its academic curricula. Thus, cases such as Selena’s raise serious questions about the need for a more thorough integration of digital technology and creative themes in academic learning.

Arguably, the ways in which both learning and risk are framed within the context of contemporary schooling often resort to a disciplinary model for dealing with those who fit outside the “academic” mode of students. In other words, in understanding the shape of school policies around digital risks—as well as the ways in which the school values students’ technological practice—it is also necessary to interrogate how marginalized students who attempt their own paths of creative and intellectual exploration often encounter significant structural limitations and, unfortunately, get frequently constructed as “risky” and prone to misbehavior.

Conclusion

This chapter demonstrates the challenges Freeway faces when incorporating digital and mobile media. Students, teachers, and policies are often at odds with regard to the appropriate use of technology at school. Daily life at Freeway is fraught with struggles and tensions regarding the value and appropriate use of digital media. Students understandably desire to incorporate digital and mobile media into their educational lives. They have demonstrated the value that online search engines, social network sites, peer communication, and online video tutorials
have in their lives away from school. Teachers understandably want to ensure optimal learning environments with minimal distractions. And of course school districts have a responsibility to minimize students' exposure to inappropriate or harmful content. The different goals, values, and practices that are developing around and through media are competing to shape policies, curricula, and opportunities at Freeway.

The incorporation of technology should not be isolated to formal technology courses, but should be embraced as part of an overall digital culture that values digital literacies and practices in all aspects of students' learning ecologies—creative, recreational, and educational. Technology is an integrated aspect of students' lives, thus they require adult guidance and support as they learn to navigate new terrains. Until schools more fully recognize and embrace the cultures and values of today's generation of learners, they will continue to miss a multitude of opportunities to help students become responsible and engaged digital citizens. Schools have a responsibility to prepare students for their future, and this goes beyond merely teaching them how to use digital media and mobile technologies; it also includes fostering critical thinking, responsible use, and a sense of efficacy. This is particularly true for students in the digital edge, whose access to material resources and digital literacy is already marginalized.